

THE DEVELOPMENT OF A PRINCIPLED LEADERSHIP SCALE



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DECLARATION

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ABSTRACT

In South Africa, as scandals of the moral demise of the leaders in the public and private sectors grow, the need for value-based leaders, who lead from an inner moral compass, is continually highlighted. Several value-based leadership scales, measuring either transformational, authentic, servant or ethical leadership exist. However, while these leadership scales each measure an aspect of value-based leadership, none of them measures the concept as a whole. Furthermore, these scales have largely been developed in countries outside of South Africa. A vacuum therefore exists regarding South African-based leadership scales.

The primary focus of this study was thus to develop a new leadership scale, the Principled Leadership Scale (PLS), which would be a holistic measure of value-based leader behaviour, and which would be developed within the South African context. The development of the scale was grounded in a thorough analysis of the leader behaviours inherent to transformational, authentic, servant and ethical leadership. From these behaviours, the salient features of a principled leader were distilled. Dimensions which measure principled leadership were formulated as well as items by which the behaviour contained in these dimensions could be measured. These dimensions and items of the PLS were depicted in a conceptual measurement model.

A second focus of the study was to contextualise principled leadership within a network of antecedents and outcomes. By exploring the concept of moral intelligence, an answer to what precedes principled behaviour was sought. For principled leadership to be effective, it was also important to explore if it would have a positive effect on outcomes in the work environment. In this context, the effect of principled leadership on trust in the leader, and of trust in the leader on organisational citizenship behaviour was sought. Based on the literature study, a structural model depicting the interaction of these constructs with one another was developed and various hypotheses were postulated.

Data for the quantitative study was collected by means of either a paper-based questionnaire or an electronic web-based questionnaire. A total of 300 completed questionnaires were returned. The final questionnaire consisted of four scales: The adapted Moral Competency Inventory (MCI), the Principled Leadership Scale (PLS), the Leader Trust Scale (LTS) and the Organisational Citizenship Behaviour Scale (OCBS).

Empirical testing of the postulated models and hypotheses was conducted in two phases, by various statistical methods. First the postulated model of the PLS was tested for reliability, where after exploratory factor analysis and confirmatory factor analysis (CFA) were utilised to

test the model for construct validity. During this analysis, one item was eliminated as it was deemed to be a poor item. Reliability of all the dimensions of the PLS was very high. The CFA revealed that acceptable fit was achieved for the measurement model of the refined PLS.

Structural equation modelling (SEM) was utilised to determine the extent to which the structural model, in which the variables moral intelligence, principled leadership, trust in the leader and OCB were postulated to interact, fitted the data obtained from the sample. The results indicated acceptable fit of the data. Furthermore, the results revealed that moral intelligence had a positive effect on principled leadership, which had a positive effect on trust in the leader. In turn, trust in the leader had a positive effect on OCB.

The present study contributes to the existing literature on leadership in that a new, holistic, value-based leadership scale was developed, which showed acceptable initial results with regards to its reliability and construct validity. Furthermore, it provides insight into the effect of moral intelligence on principled leader behaviour, and of principled leadership on trust in leaders and OCB. The scale has managerial implications in that it could be used in the selection and/or development of leaders in organisations. The limitations and recommendations associated with the study provide additional possibilities for future research.

OPSOMMING

Soos wat daaglikse berigte oor die morele agteruitgang van leiers in die publieke en privaat sektore in Suid Afrika toenemend verskyn, groei die behoefte aan leiers wat hulle leierskap op geïnternaliseerde, morele waardes baseer. Verskeie meetinstrumente bestaan wat waarde-gebaseerde leierskap meet, soos transformasionele, outentieke, diensgeoriënteerde en etiese leierskap. Die meetinstrumente wat dié tipes leierskap meet, meet almal 'n spesifieke aspek van waarde-gebaseerde leierskap. Wat ontbreek is 'n meetinstrument wat waarde-gebaseerde leierskap as 'n holistiese konsep meet. Verder is die meetinstrumente wat tans waarde-gebaseerde leierskap meet hoofsaaklik buite Suid-Afrika ontwikkel. 'n Verdere leemte is dus 'n meetinstrument wat in Suid Afrika vir dié doel ontwikkel is.

Die primêre doel van hierdie studie was dus om 'n holistiese, waarde-gebaseerde meetinstrument, die *Principled Leadership Scale* (PLS), in die Suid-Afrikaanse konteks te ontwikkel. Die ontwikkeling van hierdie meetinstrument was gegrond op 'n deeglike analise van die gedrag wat eie aan waarde-gebaseerde leiers is, soos wat deur transformasionele, outentieke, diensgeoriënteerde en etiese leiers uitgebeeld word. Uit hierdie analise is die leierskapsgedrag wat inherent deel is van 'n beginselvaste leier geïdentifiseer. Dimensies wat beginselvaste leierskap meet is ontwikkel, sowel as items wat die gedrag onderliggend aan die dimensies meet. Hierdie dimensies en items is in 'n konseptuele metingsmodel uitgebeeld.

'n Tweede doel van die studie was om die effek van beginselvaste leierskap binne die konteks van die werksomgewing te toets. In dié konteks is dit gepostuleer dat morele intelligensie 'n determinant van beginselvaste leierskap is en dat beginselvaste leierskap 'n positiewe effek op die vertroue van volgelinge in leiers het. Laastens is daar gepostuleer dat vertroue in die leiers van 'n organisasie 'n positiewe effek op organisatoriese burgerskapsgedrag het. 'n Teoretiese strukturele model is ontwikkel wat die gepostuleerde effek van hierdie veranderlikes op mekaar voorstel. Verskeie hipoteses is geformuleer om sodoende die geldigheid van die voorspellings uit die literatuurstudie te bepaal en te toets.

Data vir die kwantitatiewe studie is deur middel van 'n papier-gebaseerde vraelys of 'n elektroniese web-gebaseerde vraelys ingesamel. In totaal is 300 voltooide vraelyste ontvang. Die finale vraelys het uit die volgende vier skale bestaan: Die aangepaste *Moral Competency Inventory* (MCI), die *Principled Leadership Scale* (PLS), die *Leader Trust Scale* (LTS) en die *Organisational Citizenship Behaviour Scale* (OCBS).

Die hipoteses van die metingsmodel en strukturele model is empiries deur middel van verskeie statistiese metodes getoets. Die toetsing van die modelle het in twee fases plaasgevind. Tydens die eerste fase het die PLS item- en eksploratiewe faktorontledings ondergaan om die betroubaarheid en faktorstruktuur van die PLS te toets. Die betroubaarheidsontleding het getoon dat al die subskale (dimensies) van die PLS hoë betroubaarheid toon. Die struktuur van die metingsmodel is deur middel van bevestigende faktorontleding ondersoek en die resultate het aangedui dat die metingsmodel die onderliggende data redelik goed pas. Die konstruktgeldigheid van die PLS is dus bevestig.

Strukturele vergelykingsmodellering is gebruik om die struktuur van die strukturele model te toets en om die effek van die gepostuleerde interverwantskappe van die veranderlikes in die model te toets. Die resultate het bewys dat die model die onderliggende data redelik goed pas. Die resultate het verder aangedui dat morele intelligensie 'n positiewe effek op beginselvaste leierskap het en dat beginselvaste leierskap op sy beurt 'n positiewe effek op vertrouwe in die leiers van 'n organisasie het. Die resultate het ook getoon dat vertrouwe in die leiers 'n positiewe effek op organisatoriese burgerskapsgedrag het.

Die huidige studie dra by tot die bestaande literatuur oor leierskap deurdat 'n nuwe, geldige en betroubare meetinstrument vir waarde-gebaseerde leierskap ontwikkel is. Die studie bied ook insigte ten opsigte van die effek van morele intelligensie op beginselvaste leierskap; beginselvaste leierskap op vertrouwe in leiers; en vertrouwe in leiers op organisatoriese burgerskapsgedrag. Uit 'n praktiese oogpunt kan die PLS in die werksomgewing gebruik word om beginselvaste leiers te identifiseer en te ontwikkel.

Ten slotte is die leemtes van die studie geïdentifiseer sowel as aanbevelings vir toekomstige navorsing gemaak.

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I asked the servant Leo why it was that artists appeared to be only half-alive while their creations seemed so irrefutably alive. Leo looked at me, surprised at my question. Then he said: "It is just the same way with mothers. When they have borne their children and given them their milk and beauty and strength, they themselves become insignificant and no one asks about them anymore."

"But that is sad," I said, without really thinking very much about it.

"I do not think it more sad than all other things," said Leo. "Perhaps it is sad and yet also beautiful. The law ordains that it should be so."

"What law?" I asked curiously. "Which law is that, Leo?"

"It is the law of service. He who wishes to live long must serve, but he who wishes to rule does not live long."

"Then why do so many strive to rule?"

"Because they do not understand. There are few who are born to be masters; they remain happy and healthy. But all the others who have only become masters through endeavour, end in nothing."

"In what nothing, Leo?"

"In a sanatorium¹, for example."

I understood little about it and yet the words remained in my memory and left me with a feeling that this Leo knew all kinds of things, that he perhaps knew more than us, who were ostensibly his masters.

– Hermann Hesse, Journey to the East -

¹ Researcher's reflection: Perhaps the sanatorium is not the physical place, but rather that dark place we go to in our souls when, as leaders, we lead only to satisfy our own selfish ambition.

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CHAPTER 1

INTRODUCTION, RESEARCH OBJECTIVES AND OVERVIEW OF THE STUDY

1.1 Introduction

The Enron debacle of 2001 probably stands out as one of the most complex examples of unethical and corrupt business practices of the past two decades. Despite the lessons that could have been learnt from Enron, local and international news continues to be plagued by similar reports of unethical behaviour, greed and abuse of power by organisational leaders. Internationally, the FIFA corruption scandal, the Panama Papers and the Volkswagen emission scandal, and locally, the Nkandla and the alleged Jacob Zuma corruption scandals, are merely a hand-full of the scandals that have made the news headlines in 2015/2016.

1.2 Definition and Cause of Corrupt Behaviour

Why are societies or organisations plagued by behaviour causing the types of scandals referred to above and how should corruption be understood?

Corrupt behaviour entails misusing a position of public office, or any other position of power, to gain material or social reward for oneself, at the cost of other people. People who are corrupt choose to disengage from behaviour that is ethical, moral, lawful, and that represents tradition and civic virtue (Dassah & Mafunisa, cited in Vorster, 2012, p.133). "Corruption manifests itself as bribery, embezzlement, fraud, extortion, abuse of power, nepotism, conflict of interests, insider trading or abuse of privileged information, and favouritism" (Webb, cited in Vorster, 2012, p.133). Corruption should not only be confined to actions that are illegal, but should also include those actions that are regarded by the public to be immoral (Vorster, 2012, p.133).

Corruption is a greater problem in some countries than in others. Perceptions are that the Scandinavian countries, certain European countries and New Zealand are the least corrupt in the world, while developing countries are badly affected by corrupt behaviour (Transparency International, 2015). Research into the causes of corruption proposes that this malaise can be attributed to several factors, such as:

- 1) highly visible, competitive environments in which winning at any cost becomes an obsession (O'Higgins, 2003; Sims & Brinkman, 2003). Linked to this is a culture focussed purely on profits in which employees, who boost the profits are rewarded and those who don't are culled (O'Higgins, 2003; Sims & Brinkman, 2003). Such organisations, which prioritise performance over other values, tend to have higher rates of unethical behaviour (Ciani, Hannah, Roberts & Tsakumis, 2013, p.582).

- 2) organisations that are highly diversified, complex and have far-flung geographical operations (O'Higgins, 2003, p.8). When subsidiaries or business units are subject to different competitive pressures and are governed by diverse industry, political, social and cultural norms, it becomes difficult to control these affiliates (O'Higgins, 2003, p.8).
- 3) growth in government procurement (Collier, 2000, p.195) which results in certain businesses relying heavily on contracts with the state (O'Higgins, 2003, p.8). Large construction contracts to develop infrastructure and contracts linked to the arms/defence industry, are typically linked to government procurement (O'Higgins, 2003, p.8).
- 4) weak corporate governance structures and processes (Camerer, 2001; O'Higgins, 2003). Ineffective company boards, especially those who must work with a dominant chief executive or senior management team, and/or with non-executive directors who are not truly independent, often fail to protect the interests and risks of investors, as well as the sustainability of the company (O'Higgins, 2003, p.8).
- 5) lack of principled leadership. O'Higgins (2003, p.9) claims that the hierarchical structure of many organisations leads to some people having power over others and in many organisation, especially highly politicised ones, this power leads to corruption and the setting of a poor moral example for followers. This sentiment that corruption results from a lack of commitment by leaders, who set bad examples, is echoed by Hubert in his study on the causes of corruption (Hubert, cited in Camerer, 2001, p.46).
- 6) the weakening of the moral norms of society. Hubert's study (cited in Camerer, 2001, p.46) on the causes of corruption, lists this as the primary cause of corruption. Collier (2000) supports this point of view in that he claims that there is a direct link between the level of a society's morality and that of the individual living in it. In societies marked by a high level of honesty, people tend to be honest themselves because they don't want to feel guilty when comparing their behaviour with that of others. However, in societies where being corrupt has become the norm, people can easily assuage any pangs of guilt by the knowledge that they are no more corrupt than most other people (Collier, 2000, p.198).
- 7) low wages and unemployment. Developing countries tend to find themselves having to deal with problems associated with unemployment and poverty. One such problem is that an attitude of entitlement often infiltrates society, which condones people taking what they believe to be rightfully theirs (Dassah, cited in Vorster, 2012, p.139).

The above are factors that can influence ethical business practices in any country in the world. This study has South Africa as a specific focus. To contextualise the study, an overview of the current state of ethical business practices in South Africa is discussed below.

1.3 Corruption in South Africa

The Corruption Perceptions Index of 2015, provided by Transparency International, ranks South Africa 61st out of 168 countries (Transparency International, 2015). According to this index, any country which has a corruption score of less than 50 is considered to have a serious corruption problem. South Africa's score is 44 (Transparency International, 2015). South Africa thus has a serious corruption problem. This problem is, however, not new.

Twenty-one years ago, during the opening of Parliament on February 17, 1995, former president Nelson Mandela said: "We are conscious of the reality that corruption in many forms has deeply infected the fibre of our society. Precisely because we face the challenge of dealing with systematic corruption, we need a dispassionate and systematic approach to this question" (Rossouw, 1997, p. 1539).

White collar crime more than doubled during the first year of South Africa's new democracy (Rossouw, 1997, p. 1539). Rossouw (1997, p.1540) states that the most popular explanation for this flaw in South Africa's moral fibre is the ingenious, but often immoral means, by which businesses went about operating during the period of sanctions, which limited South Africa entrance into the world markets during the late apartheid years. These means and business practices were often praised rather than scorned and led to a weakening of South Africa's moral fibre.

The weakening of South Africa's moral fibre was also given as one of the main causes of corruption in South Africa in an expert panel survey conducted by Markinor, an independent market research company, in 2001 (Camerer, 2001). This survey listed the reasons shown in Table 1.1 as the respondents' perceptions of the causes of corruption in South African society.

Table 1.1. *Causes of corruption in South African society*

Cause	Percentage
Decline in morals and ethics	31%
Greed/self-enrichment	25%
Socio-economic conditions	18%
Weak checks and balances	14%
Apartheid legacy/political transformation	12%

(Camerer, 2001, p.44)

1.4 Combatting Corruption

If South Africa were to answer former president Mandela's call to systematically deal with corruption, how would one go about it? The literature suggests various methods of dealing with the problem of corruption, which are discussed below.

1.4.1 Legal structures

The law is the primary standard for ethical behaviour (Sauser, 2005, p.346). Any behaviour which contradicts the law would be considered corrupt, unethical and immoral (Sauser, 2005, p.346). Implementing legal structures to curb corrupt behaviour should therefore help to address the problem.

Writing something into law does, however, not necessarily make it ethical. An example of this would be the apartheid laws of the pre-1994 government of South Africa, which while legal, were deemed by many to be immoral and unethical.

1.4.2 Organisational policies

Organisational policies provide guidance to the expected behaviour of employees within organisations. These are normally in alignment with the law and give employees a clear concept of how things are done around their workplace. All employees, and especially management, are expected to work within the law and organisational policies (Sauser, 2005, p.346).

Unfortunately, history proves that organisational policies alone cannot guarantee that corrupt behaviour will not take place. Enron provides us with a prime example of an organisation that had excellent corporate social responsibility and ethics policies and yet had a workforce of deeply corrupt leaders and employees (Sims & Brinkmann, 2003).

1.4.3 Professional codes of conduct

Many professions and trades are guided by a code of behaviour for that specific profession or trade association. These codes are often aspirational in nature and establish higher standards than are required by law. By adhering to these codes, the reputation and ethical standards of the profession or trade are upheld (Sauser, 2005, p,346).

Arthur Andersen, the accounting firm consulting to Enron, fell subject to such codes of conduct endorsed by the Financial Accounting Standards Board (Sims & Brinkmann, 2003, p.245), and yet their behaviour was so corrupt that the Enron debacle caused the dissolution of Arthur Andersen. While professional codes of conduct thus provide solid guidelines for ethical behaviour, they cannot enforce the behaviour or guarantee that those who should, by the nature of their profession ascribe to them, will do so.

1.4.4 Corporate governance

Linked to codes of conduct and organisational policies is the concept of corporate governance. South Africa has made great strides towards encouraging the restoration of business ethics through the implementation of corporate governance. In 1994, the Institute of Directors in South Africa (IoDSA) commissioned the King Commission, under the chair of Professor Mervyn King, to compile the King Report on Corporate Governance. "The primary objective of the King Report is to promote the highest standards of corporate governance in the interest of a wide range of stakeholders" (Barrier; Kakabadse & Korac-Kakabadse, cited in Vaughn & Ryan, 2006, p.506).

Corporate governance, as defined by the King Reports is "about the exercise of ethical and effective leadership, ... [which] should reinforce each other" (IoDSA, 2016, p.2). Effective leadership is about directing and driving performance towards achieving the organisation's strategic purpose and goals (IoDSA, 2016, p.2). The characteristics of ethical leadership are "discipline, transparency, independence, accountability, responsibility, fairness and social responsibility" (IoDSA, 2016, p.2; Vaughn & Ryan, 2006, p.506).

These characteristics of ethical leadership were "further developed and integrated into guidelines for minimum standards of corporate governance" (Vaughn & Ryan, 2006, p.506). The report is based on a principled approach to governance practices, which provides managers with clear guidelines for corporate conduct, while still allowing flexibility for the effective management of companies (Barrier, cited in Vaughn & Ryan, 2006, p.506). Further amendments to the first King Report have been made and, subsequently, the King II and King

III Reports were published in 2002 and 2009 respectively. King IV was published on 1 November 2016.

The King Report has no force of law. However, since 1995 it has been mandatory for all companies listed on the Johannesburg Stock Exchange to disclose, in their annual reports, the extent to which they are complying with the King Report. This is not a requirement for unlisted companies but it is anticipated that this requirement for listed companies will put pressure on unlisted companies to act in accordance with the King Report (Rossouw, 1997; Vaughn & Ryan, 2006).

While this formal attempt at imposing ethical business practices may encourage business leaders to consider the moral implications of their practices and decisions with greater focus and with more responsibility, it cannot ever guarantee that listed and/or other companies are led by ethical leaders. Nor does it bear any direct consequences for leaders of unlisted companies or those operating in the public sector.

The Global Competitiveness Report is perhaps an apt platform to showcase how implementing corporate governance places South Africa between first and eighth in the world on governance issues, and yet on issues that are deeply affected by the moral behaviour of leaders and citizens, such as crime, bribery, trust in public service and education, South Africa falls far behind other countries. In the case of education and labour relations, South Africa shamefully takes the last place in the world of those countries included in the statistics. Selected statistics of this report are shown in Table 1.2.

Table 1.2. *Global Competitiveness Report Statistics*

Area rated	South Africa's ranking out of 140 countries
Strength of auditing and reporting standards	1
Financing through local equity market	1
Regulation of securities exchanges	2
Efficacy of corporate boards	3
Soundness of banks	8
Ethical behaviour of firms	38
Irregular payments and bribes	50
Wastefulness of government spending	91

Diversion of public funds to companies, individuals or groups due to corruption	94
Public trust in politicians	98
Reliability of police service	102
Favouritism in decisions of government officials	105
Business costs of crime and violence	131
Quality of the education system	138
Hiring and firing practices	138
Quality of maths and science education	140
Cooperation in labour-employer relations	140

(Schwab, 2016)

The behaviour, or lack thereof, which underpins a nation's achievement of the above rankings are those the King report associates with ethical leadership, namely "discipline, transparency, independence, accountability, responsibility, fairness and social responsibility" (IoDSA, 2016, p.2; Vaughn & Ryan, 2006, p.506). On the one hand, the presence of the rules (be they the legal system, professional policies and procedures, codes of conduct, or the King Reports on corporate governance) ensure high rankings for South Africa in those areas that are reliant on strict rules being in place (see the first five areas rated above). On the other hand, those areas rated which depend more heavily on ethical behaviour, place South Africa in a poor light. This is further proof that while they may have some effect, rules alone do not make man moral. An alternate method for developing man's morality should therefore be sought.

1.4.5 Ethics training

The literature proposes ethics training as an alternate method of restoring ethical behaviour and ethical business practices to organisations and society (Mayer, Kuenzi, Greenbaum, Bardes & Salvador, 2009; Rossouw, 1997; Sauser, 2005).

One approach would be to instil ethical behaviour in future employees by integrating ethics in the curricula of universities, their business schools, as well as universities of technology and colleges (Rossouw, 1997).

Another approach would be to include ethics as a topic in the training and development programmes of organisations (Mayer et al., 2009; Sauser, 2005). The purpose of such training would be to teach management to improve their ethical behaviour. Mayer et al. (2009, p.10) suggest that relevant topics could include "the importance of ethics, rewarding and supporting employees who behave ethically, and serving as ethical role models."

Despite this suggestion, the literature is inconclusive as to the effectiveness of ethics training in restoring ethical behaviour. Ethics training is similar to rules, which attempt to enforce ethical behaviour in that it is an 'outside-in' approach towards restoring man's morality.

1.4.6 Leadership development training

Across the world leadership training is a huge and lucrative business. Organisations are prepared to invest large sums of money to make better leaders of those in management or leadership positions. Despite the investment, there is little evidence that these courses produce better leaders (Allio, 2005, p.1071).

Allio (2005) argues that while leadership development programs give aspiring leaders a cognitive experience, it is doubtful that they teach them how to lead. Learning to lead requires a change in behaviour. Leadership development courses advocate that by creating awareness of the effect of the leader's behaviour on followers, the leader will be motivated to change his/her behaviour. Allio (2005) states that while this may be so, a leadership course does not provide the time necessary for the leader to reshape their behaviour, nor does it provide an environment like the one the leader operates in every day, in which this reshaping of behaviour can be practiced. Those who attend leadership development courses, thus usually fall back into their old behaviour patterns within weeks (Allio, 2005, p.1072).

Allio (2005) explains that the failure of leadership programs is in part due to confusion about what leaders do. Competent and ethical leaders, are required to do the following:

- “establish and reinforce values and purpose
- develop vision and the strategies necessary to achieve the vision
- build the community necessary to implement the strategies, and
- initiate and manage the changes necessary to assure growth and survival” (Allio, 2005, p.1073).

Leadership traits that have been advocated as necessary to achieve the above include humility, credibility, modesty, character (which includes integrity, honesty, courage and the will to do good), responsibility, accountability, fairness, creativity and compassion (Allio, 2005, p.1073; Badarocco, Collins, Kouzes & Posner, cited in Allio, 2005, p.1073, IoDSA, 2016, p.2). These traits are primarily formed because of a person's early exposure to ethical role models (Allio, 2005, p.1073; Dow 1998, p. ii-iii). Allio postulates that providing moral training later in life, such as during leadership programs, is probably as ineffective as a sermon on morality, reminding an unprincipled, greedy and corrupt congregation not to sin (Allio, 2005, p.1073).

The above discussion provides measures by which society has tried, and continues to try, to impose morality on society. History, however, provides enough examples to prove that these measures do not have the necessary effect. If ethical behaviour cannot be imposed on man from the outside, perhaps the solution to restoring man's morality should be sought via an 'inside-out' approach, starting with the individual conscience (Pillay, 2014, p.32).

1.4.7 The individual conscience

Sauser (2005) claims that the individual conscience is the highest set of moral standards to which man can be held accountable. The moral function of the conscience is to approve or disapprove a person's own thoughts and actions based on that person's value system (Coleman et al., cited in Sauser, 2005, p.346). These values are developed early in life and are reinforced through life experiences and interaction with others. They are often based on a person's religious or philosophical understanding of morality, as learned through these interactions and life experiences (Baelz, cited in Sauser, 2005, p.347).

This opinion is shared by Lennick and Kiel (2008), who developed the construct of moral intelligence. They define moral intelligence as "the mental capacity to determine how the universal human principles should be applied to our values, goals, and actions" (Lennick & Kiel, 2008, p.7)

In a country, as ideologically, culturally and religiously diverse as South Africa, one cannot assume that a given set of principles is regarded as universal and equally acceptable to all. Two questions are thus raised in this context:

- 1) Is a universal understanding of what constitutes moral behaviour necessary?
- 2) Whose principles are we referring to when we speak of universal principles?

As far as the necessity of determining a set of universal moral standards is concerned, any attempt to redress corrupt behaviour can only be successful if the values referred to as ethical, are regarded as such by all. This point is echoed by Kinnier, Kernes and Dautheribes (2000) as follows: "Without universal moral standards we are left with no way to condemn cannibalism, physical torture, mutilation, wife beating, child abuse, slavery, murder, or genocide if they are part of the habitual practice and cultural traditions of a group" (Bell, cited in Kinnier et al., 2000, p.6).

1.4.7.1 *Western and eastern values*

To determine whether a list of universal moral values exists, Kinnier et al. (2000) and Schwartz (2005), examined various religious and secular texts.

Kinnier et al. (2000, p.5) found that the Golden Rule of “do unto others as you would have them do unto you” forms the basis of a code of universal moral values. Their exploration of the sacred texts of the major religions (Judaism, Christianity, Islam, Hinduism, Confucianism, Taoism and Buddhism) and secular organisations (American Atheists Inc., American Humanist Association and the United Nations), (Kinnier et al., 2000, pp.9 - 10), led them to compile the following list of universal values:

- 1) *Commitment to something greater than oneself*
 - *To recognise the existence of and be committed to a Supreme Being, higher principle, transcendent purpose or meaning to one’s existence*
 - *To see the Truth (or truths)*
 - *To seek Justice*
- 2) *Self-respect, but with humility, self-discipline, and acceptance of personal responsibility*
 - *To respect and care for oneself*
 - *To not exalt oneself or overindulge – to show humility and avoid gluttony, greed or other forms of selfishness or self-centredness*
 - *To act in accordance with one’s conscience and to accept responsibility for one’s behaviour*
- 3) *Respect and caring for others (i.e. the Golden Rule)*
 - *To recognise the connectedness between all people*
 - *To serve humankind and to be helpful to individuals*
 - *To be caring, respectful, compassionate, tolerant, and forgiving of others*
 - *To not hurt others (e.g., do not murder, abuse, steal from, cheat or lie to others)*
- 4) *Caring for other living things and the environment* (Kinnier et al., 2000, pp.9 - 10)

In an attempt to similarly define universal values, Schwartz (2005, pp.33 - 35) explored 1) the code of ethics of various companies, 2) global ethics codes such as the Interfaith Declaration (1993) of the Abrahamic faiths and the Caux Roundtable Principles, and 3) business ethics literature, including utilitarianism (the right decision is the one that ensures the greatest good for the greatest number of people) and deontology or Kantianism (people and the environment should never be used as a means to an end).

Schwartz' study lead to the formulation of six universal moral values, namely:

- 1) *Trustworthiness (including notions of honesty, integrity, transparency, reliability and loyalty);*
 - 2) *Respect (including notions of respect for human rights);*
 - 3) *Responsibility (including notions of accountability, excellence, and self-restraint);*
 - 4) *Fairness (including notions of process, impartiality, and equity);*
 - 5) *Caring (including the notion of avoiding unnecessary harm); and*
 - 6) *Citizenship (including notions of obeying laws and protecting the environment)*
- (Schwartz, 2005, p.39).

Based on the above it would seem that a standard of universally accepted moral behaviour, to which people can be held accountable, does exist. However, the above universal values are based on Eastern and Western thinking, religion and humanitarian organisations. Subsequently, the following question arises: what about African values?

1.4.7.2 African values

African values are imbedded within a holistic concept of life in that Africans believe people cannot exist in isolation (Mbiti, cited in Verhoef & Michel, 1997, p. 395). For Africans, their deepest moral obligation is to become more fully human (Shutte, cited in Metz & Gaie, 2010, p.275) and this can only be done in relation to other people. This is summed up in the concept of *Ubuntu* which means "I am because we are, and since we are, therefore I am" (Verhoef & Michel, 1997, p.396). The concept that morality and humanness are achieved through relationship with others is distinct from a Western world-view in which the individual develops morality and humanness through reason and self-control (Metz & Gaie, 2010, p.275).

A second way in which African morality is distinct from Western morality is that, unlike Western morality, it is not a 'justice' morality (Metz & Gaie, 2010, p.275). Western moral rules, such as the Kantian categorical imperative, focus on strict absolutes of right and wrong, which are applicable to all individuals in all situations. In this sense, Western morality is very "black and white", leaving little room for possible "grey" areas of morality (Verhoef & Michel, 1997, p.397).

In African morality, whether an action is right or wrong, is determined by how the action influences harmony in the community. This makes African morality more dynamic than the static morality of the West (Mbiti, cited in Verhoef & Michel, 1997, p.398). Rather than emphasising the importance of justice and individual rights, African morality emphasises the importance of maintaining good relationships with others (Verhoef & Michel, 1997, p.397)

“Moral transgression is marked by extreme relativity... some morals apply in one area and not in another, or at one time but not forever... [and] the seriousness of the offence varies according to its nature” (Mbiti, cited in Verhoef & Michel, 1997, p. 398).

In an attempt to establish an African moral theory, such as those of utilitarianism and Kantianism, Metz (2007) proposes the following as an African guideline to determine right from wrong action:

“An action is right just insofar as it promotes shared identity among people grounded on goodwill; an action is wrong to the extent that it fails to do so and tends to encourage the opposites of division and ill-will” (Metz, 2007, p.338).

Stated differently, “What is right is what connects people together; what separates people is wrong” (Mbiti, cited in Verhoef & Michel, 1997, p.397).

1.4.7.3 Universal moral standards

The moral perspectives discussed above, pose a potential problem for the researcher. South Africa is a cauldron of cultures which each deserve respect for their unique moral perspective. The problem is further complicated by the fact that South Africans, especially in the business world, do not operate in Africa alone but also within the global context, which is predominantly influenced by Western moral philosophy. The only way to resolve this dilemma is to determine if there is any common ground among the various moral perspectives.

Metz (2007, p.338), states that “both Westerners and friends of *Ubuntu* equally hold the following to be wrong: (roughly) killing, raping, lying, stealing, breaking promises and discriminating”.

It may be plausible to argue that the values which oppose the behaviours listed above would be trustworthiness, respect, responsibility, fairness, caring and citizenship. These are the universal values listed by Schwartz (2005). When a person regards the behaviours of “killing, raping, lying, stealing, breaking promises and discriminating” (Metz, 2007, p.338) as wrong, it follows that they would most likely support a value system that includes the universal values listed by Schwartz (2005).

The researcher thus concludes that while the application of these values may be different between West, East and Africa, in that one may stress individual rights and the other

community, the principles underlying the moral philosophies are essentially the same. It is therefore plausible that the values as described by Kinnier et al. (2000) and Schwartz (2005) could be regarded as universal, and would be accepted by all as such. It follows that a person who has internalised these values and expresses them through his/her actions, would be regarded as a moral person.

This brings the researcher to the following two questions:

- 1) How can an organisation know to what extent a leader, or candidate for leadership, is a moral person?
- 2) How does the morality, which is embedded within the leader, spread from the inside out, to influence others to be ethical?

1.4.8 Leadership selection

Leader processes such as “modelling behaviour, creating, interpreting and enforcing policies” (Mayer, et al. 2009, p.10) are important in that they influence employees to display either positive or dysfunctional behaviour. For this type of modelling behaviour to be present, Pillay (2014, p.32) states that organisations require leaders who are principled, character-based and who lead from the inside out, i.e. their behaviour is based on their inner moral convictions.

A good selection process plays a critical role in ensuring that moral leaders are promoted or appointed. It is therefore important that the selection process makes use of selection methods from which the correct inferences about the inherent value-based behaviour of a potential leader can be drawn. The use of appropriate behavioural tests, structured interviews and in-basket exercises focussing on ethical issues, may be an appropriate way of doing this (Mayer et al., 2009, p.10).

Behavioural tests for this purpose are based on leadership theories. The main leadership theories which address value-based behaviour (i.e. behaviour based on commonly recognised moral principles) are transformational, authentic, servant and ethical leadership. While considerable reference has been made to the term ‘ethical’ in the discussion up to this point, it is important to note that ethical (also, moral or principled) behaviour is a critical component of all four leadership theories and not only of the ethical leadership theory.

Each of the four leadership theories provide unique and complementary insights into the behaviour of a value-based leader. The question is therefore, which theory, and its underlying scales, would best infer value-based behaviour? The researcher is of the opinion, that a

holistic approach is needed. Should the dimensions defined in any one of the four leadership theories be excluded in a scale, critical aspects of value-based leadership would be lost. While it is possible to use several behavioural scales to measure value-based leadership, having one, all-encompassing scale to measure this with, would be more practical and economical.

Furthermore, apart from the ELI developed by Spangenberg and Theron (2005), none of the current scales measuring aspects of value-based leadership have been developed in South Africa. The researcher thus proposes the development of a new, South African based scale, which encompasses the critical behaviours of the four leadership theories and thereby provides a holistic view of value-based leader behaviour, under the collective term 'principled' leader behaviour.

Moreover, it is envisaged that the scale could be used for the further development of incumbents in leadership positions. Behavioural tests provide powerful insights into a person's behaviour. By developing an 'other-rating' scale which can be used by followers to rate their leaders, these leaders can be led to greater insights about themselves. Self-awareness can lead to greater levels of authenticity and self-regulation, which are both important for role-modelling value-based behaviour (Goleman, 1996).

1.4.9 Role modelling morality

Allio (2005, p.1071) claims that while leadership cannot be taught, it can be learned. Considering the "inside-out" approach discussed above, this makes sense. Teaching is something that is imposed on a person from the outside, while learning is an internal process, by which a person chooses to internalise that which he/she observes on the outside, or is taught.

A theory that advocates this process is social learning theory (SLT), developed by Bandura (Bandura, cited in Mayer et al., 2009). SLT suggests that individuals will strive to emulate the behaviour of attractive role models in their work environment. Furthermore, when employees witness reward for appropriate behaviour and punishment for inappropriate behaviour, they will tend to ensure that their behaviour is in line with acceptable norms (Mayer et al., 2009, p.2).

SLT, together with the "cascading effect" of leadership (Bass, Waldman, Avolio & Webb, cited in Mayer et al., 2009, p.2) suggests that through role modelling, and because of reward and punishment systems, ethical leader behaviour is likely to cascade from top leadership, through

supervisory levels, down to employees. As part of the cascading effect, employees at all levels will tend to most closely emulate the behaviour of their immediate supervisor. The importance of having principled leaders at the very top is therefore highlighted. If the most senior management in an organisation act unethically, the organisation can be assured of complete moral decline, by the time the behaviour has cascaded through to the lowest ranks. As the saying goes, the fish always rots from the head.

1.4.10 Mentoring and on-the-job training

In Section 1.4.6. the researcher discussed the notion that leadership development programs are largely ineffective. Despite Allio's (2005) point of view on this, the intention was not to throw the proverbial baby out with the bathwater. Allio goes on to argue that leadership development is effective if done in conjunction with mentoring and on-the-job training, which are successful methods by which aspiring leaders can learn the behaviour necessary for effective and ethical leadership (Allio, 2005; Sauser, 2005). Allio suggests that leadership development follows the principles of surgical training which is based on the classic procedures of "see one, do one, teach one" (Allio, 2005, p.1074). This will allow the 'apprentice' leader to develop a repertoire of behaviours on which to draw when faced with certain leadership challenges (Allio, 2005, p.1074).

Being an effective mentor, however, requires a leader who is 'other centred'. Such a leader understands that leadership is not about controlling people, being the boss or holding on to territory or authority. It is about caring for people and being a useful and genuine resource to them. It is about building others up and assisting them to be the best they can be for their own sakes (Autry, cited in Sauser, 2005, p.355). Such a person must motivate, educate and lead by example (Allio, 2005, p.1075). For this, a principled, authentic leader, who inspires others to transcend their own abilities and who is willing to patiently serve the other while he/she learns, is necessary.

1.5 The Research Initiating Question

The discussion above leads to the research initiating question to be explored in this study:

What constitutes value-based leader behaviour, and how can this behaviour be measured so that potential leaders, who will lead selflessly, with integrity and morality, can be identified during the selection process and/or be developed?

1.6 The Research Objectives

The primary objective of this research is the development of a reliable and valid value-based leadership scale, within the South African context. Value-based leadership behaviour is, however, not a random occurrence. It operates within a complex nomological network of interacting latent variables. The relationship between value-based leadership and other variables in its nomological network will thus also be studied.

Consequently, the specific objectives of the proposed research are:

- 1) Deducing from the literature the salient behaviours of value-based leaders
- 2) Using the above to define the concept of principled leadership, with its underlying dimensions
- 3) Developing a reliable and valid principled leadership scale that is suitable to the South African context
- 4) Testing the absolute fit of the measurement model
- 5) Testing the absolute fit of the structural model
- 6) Evaluating the significance of the hypothesised paths in the structural model
- 7) Providing recommendations for further research
- 8) Providing practical managerial implications of the research for organisations

1.7 Generic Steps for Scale Development

In developing the principled leadership scale, the generic steps for scale development, as outlined in the Table 1.3, will be used as a base.

1.8 Outline of the study

The study will be conducted within the following framework:

- 1) Chapter 2 will present a discussion of the literature which was reviewed for this study. The literature review will focus on determining the salient features of value-based leadership by exploring several studies on transformational, servant, authentic and ethical leadership. From this analysis, definitions and items for principled leadership will be distilled and a conceptual model for principled leadership will be proposed. Next, the literature reviewed with regards to the antecedents and outcomes of principled leadership will be discussed. The assumptions drawn from this will lead to the conceptualisation of principled leadership within a structural model where the

relationship of principled leadership with these antecedents and outcomes is postulated.

- 2) Chapter 3 will present the research methodology and research plan which will be followed to assess the conceptual model of principled leadership, the structural model relating to the interaction of principled leadership with other latent variables, and the testing of the hypotheses resulting from these.
- 3) In Chapter 4 the research results of the statistical analyses followed in the research plan will be presented.
- 4) The study concludes with Chapter 5. Here the practical implications of the results presented in Chapter 4 will be discussed. Limitations of the study as well as suggestions for future research will also be presented.

Table 1.3. *Generic steps in scale development*

<i>Conceptualisation</i>	<i>Develop a conceptual definition of the construct</i>	<i>Step 1</i>
	↓	
<i>Development of measures</i>	<i>Generate items to represent the construct</i>	<i>Step 2</i>
	<i>Assess the content validity of the items</i>	<i>Step 3</i>
	↓	
<i>Model specification</i>	<i>Formally specify the measurement model</i>	<i>Step 4</i>
	↓	
<i>Scale evaluation and refinement</i>	<i>Collect data to conduct pre-test</i>	<i>Step 5</i>
	<i>Scale purification and refinement</i>	<i>Step 6</i>
	↓	
<i>Validation</i>	<i>Gather data from new sample and re-examine scale properties</i>	<i>Step 7</i>
	<i>Assess scale validity</i>	<i>Step 8</i>
	<i>Cross-validate the scale</i>	<i>Step 9</i>
	↓	
<i>Norm development</i>	<i>Develop norms for the scale</i>	<i>Step 10</i>

(McKenzie et al., 2011, p. 297)

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

The purpose of the literature review is firstly to infer from the literature what the inherent leader behaviours are, as defined by the four main value-based leadership theories: transformational, servant, authentic and ethical. Based on these, the researcher will define dimensions and items for the principled leadership scale. Secondly, the researcher aims to establish antecedents and outcomes of value-based leadership from the literature, to explore principled leadership within a larger nomological network.

During the examination of the four leadership theories, the focus will be to provide a broad definition of each leadership theory, and to explore the underlying dimensions and items of these theories. Furthermore, the statistical analyses of the scales used to test these theories, will be briefly reviewed. This review is relevant as items from the scales may be used in the development of the holistic principled leadership scale. Therefore, it is important that dimensions and items of existing scales meet the necessary psychometric criteria of reliability and validity.

2.2 Conceptualisation of Transformational Leadership

Transformational Leadership was first termed by Burns in 1978 when he conducted an analysis of political leaders. Burns' study led him to make a distinction between transactional and transformational leadership, and to develop the Full Range Leadership Model (FRLM). The FRLM categorises leaders as either transformational, transactional or laissez-faire (Muenjohn & Armstrong, 2008). Transactional and laissez-faire leadership are not value-based leadership styles, and will therefore not be discussed as part of this literature review.

Bass, cited in Hemsworth et al. (2013), defined a transformational leader as one who possesses certain characteristics which motivate followers to perform beyond expectations, by moving beyond their own interests to commit themselves to organisational goals. Transformational leadership thus "creates a deep internal desire for motivation that is not sustained through transactions" (Kim & Yoon, cited in Orabi, 2016, p.90). Instead, the follower's motivation is sustained by being truly inspired or transformed by his/her leader to desire the achievement of certain goals (Kim & Yoon, cited in Orabi, 2016, p.90).

It could however, be perceived that this type of transformational inspiration is manipulative and primarily serves the end goal of the organisation. Yukl (1999, p.46, citing Stephens, D'Intino & Victor) for example, questions whether transformational leadership, which appears to be focussed on influencing followers to constantly do more for their organisation, and thereby possibly benefitting the shareholders more than the employees, is ethical. In this study, it is important to determine whether transformational leadership is a form of leadership based on universal moral values.

Several researchers argue that there is a strong moral component to transformational leadership. Burns (cited in Brown et al., 2005, p.118) states that “transforming leaders inspire followers by aligning their own and their followers’ value systems towards important moral principles.” Engelbrecht, van Aswegen and Theron (2005) agree. Their study showed a positive relationship between transformational leadership and an ethical climate. They state that transformational leaders can significantly impact ethical performance in organisations (Engelbrecht, et al., 2005, p.25). In addition, Avolio states that transformational leaders show followers how to conduct themselves ethically and can be relied upon to “do the ‘right thing’” (Avolio, cited in Brown et al., 2005, p.134).

Bass and Avolio conceptualised the FRLM in terms of nine dimensions of which the following four dimensions measure transformational leadership (Vinger & Cilliers, 2006):

- **Idealised influence** (originally referred to as charisma) refers to the ability of the leader to make followers feel that they can trust and respect the leader and they feel admiration and loyalty towards him or her. Such a leader is regarded as having high moral and ethical standards (Bass & Avolio, cited in Hemsworth et al., 2013, p.854). In the Multifactor Leadership Questionnaire (MLQ) idealised influence is split into “idealised attributes”, indicating whether the leader is perceived as being powerful, confident and focussed on higher-order ideals and ethics, and “idealised behaviour”, which refers to whether the leader’s actions are centred on principles, beliefs and a sense of purpose (Antonakis, Avolio, & Sivasubramaniam, 2003, p.264).
- **Individualised consideration** is shown by a leader who supports and respects their employees on an individual basis, giving them personal attention and providing them with regular feedback and follow-up. This allows followers to develop and self-actualise (Avolio, Waldman & Einstein cited in Hemsworth et al., 2013, p.854; Bodla & Nawaz, 2010, p.210).

- **Intellectual stimulation** refers to the leader's ability to challenge followers to think creatively, question the status quo, and engage in problem solving. Leaders appeal to followers to engage their intellect and logical thinking (Bodla & Nawaz, 2010, p.210).
- **Inspirational motivation** is provided by leaders who inspire and motivate followers through their actions, emotional appeals and the effective communication of their expectations (Bass & Avolio, cited in Hemsworth et al., 2013, p.854). These leaders have an optimistic view of the future. They can project an idealised vision and communicate the achievability of this vision to their followers (Bodla & Nawaz, 2010, p.210).

2.2.1 Measurement of Transformational Leadership

The MLQ is the instrument most widely used to assess transformational leadership. Since its inception, the MLQ has undergone several revisions to address concerns about its psychometric properties. The current version, the MLQ 5x, contains 45 items which are linked to the subscales of the MLQ.

The subscales of the MLQ, with specific detail of transformational leadership items, are provided in Table 2.1 (Antonakis et al., 2003; Hemsworth et al., 2013, p.857).

Table 2.1. *The subscales of the MLQ*

Subscale	Items
<i>Idealised attributes</i>	<ul style="list-style-type: none"> • <i>Instils pride in others.</i> • <i>Goes beyond self-interest for the good of the group.</i> • <i>Acts in ways that builds others.</i> • <i>Displays a sense of power and confidence.</i>
<i>Idealised behaviours</i>	<ul style="list-style-type: none"> • <i>Talks about most important values and beliefs.</i> • <i>Specifies the importance of having a strong sense of purpose.</i> • <i>Considers the moral and ethical consequences of decisions.</i> • <i>Emphasizes the importance of having a collective sense of mission.</i>
<i>Inspirational motivation</i>	<ul style="list-style-type: none"> • <i>Talks optimistically about the future.</i> • <i>Talks enthusiastically about what needs to be accomplished.</i> • <i>Articulates a compelling vision of the future.</i> • <i>Expresses confidence that goals will be achieved.</i>

- | | |
|-------------------------------------|---|
| <i>Intellectual stimulation</i> | <ul style="list-style-type: none"> • <i>Re-examines critical assumptions for appropriateness.</i> • <i>Seeks differing perspectives when solving problems.</i> • <i>Gets others to look at problems from many different angles.</i> • <i>Suggests new ways to look at how to complete assignments.</i> |
| <i>Individualised consideration</i> | <ul style="list-style-type: none"> • <i>Spends time teaching and coaching.</i> • <i>Treats others as individuals rather than merely members of a group.</i> • <i>Considers an individual as having different needs, abilities, and aspirations from others.</i> • <i>Helps to develop individuals' strengths.</i> |

(Antonakis et al., 2003; Hemsworth et al., 2013, p.857)

2.2.1.1 Criticism and defence of the psychometric properties of the MLQ

Throughout the past two decades, the MLQ 5x has received criticism from various quarters. Criticism of the psychometric properties primarily centres on the construct validity of the MLQ 5x. Researchers differ in opinion as to whether the factors of the MLQ measure one single hierarchical construct of transformational leadership, and whether these factors are sufficiently discriminant to validate the factor model of the MLQ 5x (Antonakis et al., 2003; Hemsworth et al. 2013; Muenjohn & Armstrong, 2008; Rafferty & Griffin, 2004).

Several studies have been conducted to examine the legitimacy of the abovementioned criticisms. The results appear to differ depending on the context, the sample size and homogeneity, and the aspects and versions of the MLQ that were studied (Antonakis et al., 2003; Hemsworth et al., 2013; Muenjohn & Armstrong, 2008). Reference will be made here to the results of two studies which defend the validity of the MLQ 5x as it now stands.

Hemsworth et al. (2013) used a sample of 372 chief executives in the United States government to examine the psychometric properties of the five transformational leadership subscales of the MLQ 5x. The Cronbach's alphas for internal consistency reliability ranged between .70 and .80 indicating an acceptable level of internal consistency (Hemsworth et al., 2013).

Convergent validity was examined using confirmatory factor analysis (CFA). The standardised loadings of all the items on their relative transformational leadership (TFL) subscale were significant ($p < .05$). This indicated that the items contributed significantly to the subscale that they loaded on (Hemsworth et al., 2013, p.857).

The MLQ 5x was examined for discriminant validity to ensure that each of the five TFL subscales was distinct from the other. CFA indicated that the inter-subscale correlations were significant but moderate, showing that the MLQ 5x displays discriminant validity (Hemsworth et al., 2013, p.858).

Muenjohn and Armstrong (2008) conducted a study utilising the full MLQ 5x, and not only the section relating to transformational leadership, as was frequently done in other studies (Muenjohn & Armstrong, 2008, p.10). They tested three different factor models in their study. In the first model, all items loaded on one factor (global leadership). In the second model the relevant items loaded on three factors namely, transformational, transactional and non-leadership. In the third model (the full range leadership model), items loaded onto relevant dimensions of all nine leadership dimensions of the MLQ 5x. The sample size was 138 (Muenjohn & Armstrong, 2008, pp.7 – 10).

The reliability checks yielded Chronbach's alpha values of .86 and .87 for the English and Thai versions of the scale, respectively (Muenjohn & Armstrong, 2008, p.8). In terms of model fit, this study showed that the nine-factor model showed a better fit and improved chi-square results, than the one-factor model (Muenjohn & Armstrong, 2008, p.9). The nine-factor model showed the following fit statistics: RMSEA of .03, a goodness-of-fit index of .84, adjusted goodness of fit index of .78 and a ratio of 1.14 for chi-square/degrees of freedom. They concluded that the nine-factor model could be regarded as a reasonable fit for the data (Muenjohn & Armstrong, 2008, p.9).

Besides its construct validity, the MLQ is also criticised, specifically by Yukl (1999, p.37) for omitting certain transformational behaviours necessary for effective leadership. These behaviours include specific task behaviours (clarifying and planning), relations behaviours (team building and networking), and change-orientated behaviours (analysis of the external environment, strategic actions, building support for change) (Yukl, 1999, p.37). This study is focussed on establishing the value-based behaviours of leaders. While aspects of leader behaviour mentioned here by Yukl should thus be further examined in the broader context of effective leadership, the behaviours mentioned here are not underpinned by universal moral values. As such, this criticism does not affect this study.

2.2.2 Unique contribution to value-based leadership

Transformational leadership is the first theory which highlights the significance of value-based behaviour on leader effectiveness and organisational success. The literature review will

indicate that the MLQ and transformational leadership are frequently used to test other value-based measures for convergent and discriminant validity. In a sense, transformational leadership is therefore the benchmark for other value-based leadership theories.

Transformational leadership also places emphasis on the leader's ability to inspire followers, by increasing their awareness of what is right, good and important, and to focus their actions on what is best for the organisation, rather than to focus on self-interest (Bass & Steidlmeier, cited in Van Aswegen & Engelbrecht, 2009, p.1). Elements of inspirational, ethical visioning are present here.

2.3 Conceptualisation of Servant Leadership

Servant leadership was first introduced into organisations by Greenleaf in the 1970s after his reading of Hermann Hesse's (1956) *Journey to the East*. In this novel, Leo the servant, becomes the leader of a group on a spiritual journey, through his servanthood (Sendjaya, Sarros, & Santora, 2008). According to Greenleaf's theory, a servant leader begins his leadership journey by feeling a natural desire to serve others first. The aspiration to lead is then brought about by conscious choice (Greenleaf, cited in Sendjaya et al., 2008).

This desire to serve the needs of others, has strong links to all major religions (Judaism, Christianity, Islam, Buddhism, Hinduism), as well as non-religious philosophies such as the moral philosophies, Taoism and Siddha yoga (Sendjaya et al., 2008, p.406). The common thread is "the internal conviction that the servant leader is a servant of a higher being or power, and in obedient gratitude to that higher power, serves other people" (Sendjaya et al., 2008, p.406).

The focus to serve the follower is an important distinction from transformational leadership. Transformational leadership encourages followers to transcend their own needs and desires and focus on exceeding organisational goals. Servant leadership, on the other hand, focuses on growth, development and the well-being of the follower. Stone, cited in Sendjaya et al. (2008, p.403), asserts that the achievement of organisational goals is the long-term effect of this short-term focus on serving and developing the follower.

A subtle but important linguistic emphasis of servant leadership is that it regards the servant as leader rather than the leader as servant. Greenleaf (cited in Barbuto & Wheeler, 2006, p.301) states that

the leader-first and the servant-first are two extreme types ... The difference manifests itself in the care taken by the servant-first to make sure that other people's highest priority needs are being served. The best test, and difficult to administer, is: Do those served grow as persons? Do they, while being served, become healthier, wiser, freer, more autonomous, more likely themselves to become servants?

While these are important questions to ask, the answers in themselves do not make servant leadership a reliable or valid theory. Instead, the empirical evidence of the leadership theory should be examined.

2.3.1 Measurement of Servant Leadership

Compared to transformational leadership, where the MLQ appears to be the most dominant and widely researched measurement instrument, little consensus has been reached with regards to the constructs of servant leadership (Barbuto & Wheeler, 2006, p.304). Several instruments to measure servant leadership have thus been developed. Barbuto and Wheeler (2006, p.304) state that the most accepted views in the field of servant leadership are those of Greenleaf and Spears. Any construction of instruments should therefore begin with their major tenets. The first scale to be discussed is the Servant Leadership Questionnaire (SLQ), which uses the 10 characteristics of Spears as its base: "listening, empathy, healing, awareness, persuasion, conceptualisation, foresight, stewardship, commitment to the growth of people, and community healing" (Barbuto & Wheeler, 2006, p.302).

In addition to the above, two further measures, the Servant Leadership Behaviour Scale (SLBS) and the Servant Leadership Survey (SLS), will be discussed. These two scales have been added to the literature review. The discussion will indicate that they bring additional views of behaviours of a servant leader into the arena.

2.3.1.1 Servant Leadership Questionnaire (SLQ)

In the development of the SLQ, Barbuto and Wheeler started by conceptualising the 10 servant leadership characteristics identified by Spears and added to it the 11th dimension namely, 'calling' (Barbuto & Wheeler, 2006, p.304). Table 2.2 presents an outline of the 11 dimensions and how they were operationalised (Barbuto & Wheeler, 2006, pp.304 - 309).

Table 2.2. *Original dimensions of the SLQ*

Dimension	Operationalization
<i>Calling</i>	<i>The desire to serve and willingness to sacrifice self-interest for the benefit of others.</i>
<i>Listening</i>	<i>The ability to hear and value the ideas of others.</i>
<i>Empathy</i>	<i>The ability to appreciate the circumstances that others face.</i>
<i>Healing</i>	<i>The ability to know when and how to foster the healing process, which involves helping to mend broken spirits and help followers through emotional pain.</i>
<i>Awareness</i>	<i>The ability to discern cues in the environment.</i>
<i>Persuasion</i>	<i>The ability to influence others by other means than formal authority.</i>
<i>Conceptualisation</i>	<i>Fostering an environment that uses mental models and encourages lateral thinking.</i>
<i>Foresight</i>	<i>An ability to anticipate the future and its consequences.</i>
<i>Stewardship</i>	<i>Believing that organisations have a legacy to uphold and must purposefully contribute to society.</i>
<i>Growth</i>	<i>The ability to identify others' needs and provide developmental opportunities.</i>
<i>Community building</i>	<i>The ability to instil a sense of community spirit in an organisation.</i>

(Barbuto & Wheeler, 2006, pp.304 - 309)

Items were established for each of the above dimensions and a preliminary measure was developed. The content and face validity were verified by a panel of experts. Once the experts were satisfied with this validity, the measure was tested on a pilot sample that was also asked to complete the MLQ and the LMX-7 (Leader-Member-Exchange measure). Factor analysis was used to reduce the 11 dimensions to five. It was found that certain factors loaded on each other and others again were not unique to servant leadership. The final dimensions and items with their relevant reliability alphas, as defined by Barbuto and Wheeler (2006, pp. 318-319, 322-323), are illustrated in Table 2.3.

Table 2.3. *Final dimensions of the SLQ*

Dimension	Definition
<i>Altruistic calling</i> ($\alpha = .82$)	<p><i>Refers to a leader's deep-rooted desire to make a positive difference in others' lives. It is a generosity of the spirit consistent with a philanthropic purpose in life. Because the ultimate goal is to serve, leaders high in altruistic calling will put others' interests above their own and will work diligently to meet followers' needs.</i></p> <p>Items</p> <ul style="list-style-type: none"> • <i>This person puts my best interests above their own.</i> • <i>This person does everything they can to serve me.</i> • <i>This person sacrifices their own interests to meet my needs.</i> • <i>This person goes above and beyond the call of duty to meet my needs.</i>
<i>Emotional healing</i> ($\alpha = .91$)	<p><i>Describes a leader's commitment to and skill in fostering spiritual recovery from hardship and trauma. Such leaders are highly empathetic and great listeners, making them adept at facilitating the healing process. Leaders create environments that are safe for employees to voice personal and professional issues.</i></p> <p>Items</p> <ul style="list-style-type: none"> • <i>This person is one I would turn to if I had a personal trauma.</i> • <i>This person is good at helping me with my emotional issues.</i> • <i>This person is talented at helping me to heal emotionally.</i> • <i>This person is one that could help me mend my hard feelings.</i>
<i>Wisdom</i> ($\alpha = .92$)	<p><i>Wisdom is a combination of awareness of surroundings and anticipation of consequences. In combination, these two characteristics allow leaders to be adept at picking up cues from the environment and understanding their implications. Wisdom combines the height of knowledge and utility.</i></p> <p>Items</p> <ul style="list-style-type: none"> • <i>This person seems alert to what is happening.</i> • <i>This person is good at anticipating the consequences of decisions.</i> • <i>This person has great awareness of what is happening.</i> • <i>This person seems to know what is going to happen.</i>

Persuasive mapping ($\alpha = .87$) *Describes the extent to which leaders use sound reasoning and mental frameworks. They are skilled at mapping issues and conceptualising greater possibilities and are persuasive when articulating these opportunities. They encourage others to visualise the organisation's future and offer compelling reasons to get others to do things.*

Items

- *This person offers compelling reasons to get me to do things.*
- *This person encourages me to dream 'big dreams' about the organisation.*
- *This person is very persuasive.*
- *This person is good at convincing me to do things.*
- *This person is gifted when it comes to persuading me.*

Organisational stewardship ($\alpha = .89$) *Describes the extent to which leaders prepare an organisation to make a positive contribution to society through community development, programs and outreach. It reflects an ethical commitment to take responsibility for the well-being of the community and to ensure that company strategies and decisions taken, leave things better than they were found. Such leaders work to develop a community spirit in the workplace and desire to leave a positive legacy.*

Items

- *This person believes that the organisation needs to play a moral role in society.*
- *This person believes that the organisation needs to function as a community.*
- *This person sees the potential of the organisation to contribute to society.*
- *This person encourages me to have a community spirit in the workplace.*
- *This person is preparing the organisation to make a positive difference in the future.*

(Barbuto & Wheeler, 2006, pp. 318-319, 322-323)

To test for convergent and predictive validity, the SLQ was compared to the MLQ and LMX-7. Positive correlations with transformational leadership pointed towards convergent validity. The

servant leadership scale correlated positively with extra effort, satisfaction and leader effectiveness, and to some extent, with the LMX. This proved the SLQ's predictive validity (Barbuto & Wheeler, 2006, p.316).

2.3.1.1.1 Criticism and defence of the SLQ

One of the criticisms of the SLQ is that the instrument is one-dimensional, rather than five-dimensional (Dannhauser & Boshoff, cited in Mahembe & Engelbrecht, 2013, p.1). Sun and Wong (cited in Mahembe & Engelbrecht, 2013, p.1), however refute this, stating that the five-dimensional construct of the SLQ may well be valid in different cultural contexts. To explore this, Mahembe and Engelbrecht (2013) used first and second order confirmatory factor analysis (CFA) to test the construct validity of the SLQ when applied in the education sector of the Western Cape Province in South Africa. The reliability of the measure was also examined.

Mahembe and Engelbrecht's (2013) results indicated that the instrument was reliable in the South African context. All Cronbach's Alphas were 0.87 or above. The first order CFA showed that the items provided a sufficient and credible estimate of the servant leader subscales that they were linked to. The second-order CFA "confirmed that the five servant leadership dimensions contributed significantly to an overall servant leadership construct" (Mahembe & Engelbrecht, 2013, p.6). The SLQ was thus deemed to be sufficiently construct valid (Mahembe & Engelbrecht, 2013, p.6).

While their research showed a positive result, Mahembe and Engelbrecht (2013) concede that further research in other sectors such as the public and corporate sectors should be conducted to further validate the five-factor structure. In addition, they recommend that further research regarding the divergent and convergent validity of the instrument be undertaken, as it appears that little research has been conducted on these aspects in the South African context (Mahembe & Engelbrecht, 2013, p.7).

2.3.1.2 The Servant Leadership Behaviour Scale (SLBS)

Sendjaya et al. (2008) identified more than 20 themes relevant to servant leadership, which they categorised into six dimensions. The theoretical framework they used for the scale is presented in Table 2.4 (Sendjaya et al., 2008, pp.406-409).

Table 2.4. Dimensions of the SLBS

Dimension	Description
<p>Voluntary Subordination</p> <ul style="list-style-type: none"> • Being a servant • Acts of service 	<p>The leader willingly takes up opportunities to serve others whenever there is a legitimate need, irrespective of the nature of the service, who needs to be served or the mood of the leader.</p>
<p>Authentic Self</p> <ul style="list-style-type: none"> • Humility • Integrity • Accountability • Security • Vulnerability 	<p>The focus is on 'being' and therefore on authenticity. Leaders have a secure sense of self. They can operate behind the scenes, without needing constant acknowledgement or approval. They lack defensiveness and can be vulnerable and accountable to others.</p>
<p>Covenantal relationships</p> <ul style="list-style-type: none"> • Acceptance • Availability • Equality • Collaboration 	<p>Leaders accept others as they are and treat everyone with radical equality. This allows followers to experiment, grow and be creative without fear of criticism. A deep personal bond, shared values, mutual trust, open-ended commitment and a concern for the other, mark this relationship.</p>
<p>Responsible morality</p> <ul style="list-style-type: none"> • Moral actions • Moral reasoning 	<p>The exercise of power and authority is always open to ethical challenges. Servant leaders ensure that the ends they seek and the means employed are morally legitimate, thoughtfully reasoned, and ethically justified.</p>
<p>Transcendental Spirituality</p> <ul style="list-style-type: none"> • Religiousness • Interconnectedness • Sense of mission • Wholeness 	<p>Servant leaders have a sense of calling and seek to make a difference in the lives of others. Today's workplace is marked by disconnectedness, compartmentalisation and disorientation. Servant leaders seek to restore wholeness and integration. Their relationships are permeated with spiritual values and they seek to find and give meaning and purpose in and to life.</p>
<p>Transforming influence</p> <ul style="list-style-type: none"> • Vision • Modelling • Mentoring • Trust • Empowerment 	<p>The aim of servant leadership is largely to transform followers into the next generation of servant leaders and thereby to transform organisations and society emotionally, intellectually, socially and spiritually. Because of the contagious nature of servant leadership, positive change has an effect on organisations and societies. This is done through modelling behaviour, mentoring, building trust, empowering others and communicating a compelling vision.</p>

(Sendjaya et al., 2008, pp.406-409)

An important distinction between the SLQ and the SLBS is the inclusion of spirituality and morality-ethics in the SLBS. Sendjaya et al. (2008, p.410) argue that without these two aspects, the scales measuring servant leadership are not distinct from transformational leadership questionnaires.

To establish reliability and content validity of the SLBS, Sendjaya et al. (2008) conducted two studies. The first study comprised 15 semi-structured interviews with senior managers from various Australian organisations. The aim was to establish “content validity of the multidimensional nature of servant leadership” (Sendjaya et al., 2008, p.410). The interview data was used to establish the initial pool of 101 items that were used to operationalise the six dimensions mentioned above (Sendjaya et al., 2008, p.412). These 101 items were further reduced to 73 items by examination of a panel of experts in servant leadership who used content validity ratio to calculate the content validity of the items (Sendjaya et al., 2008, pp.414 – 415).

In the second study, confirmatory factor analysis (CFA) was used to model the factor structure of the SLBS. The Cronbach’s alphas for all six factors ranged from 0.72 to 0.93, thereby exceeding the recommended 0.70 level for internal reliability consistency (Sendjaya et al., 2008, p.415).

Furthermore, each of the six dimensions was analysed separately to establish the quality of the items based on the underlying data (Sendjaya et al., 2008, p.416). In the process the 73 items were reduced to a final 35, resulting in a good-fitting, parsimonious model (Sendjaya et al., 2008, p.416).

2.3.1.2.1 Further validation of the SLBS

Sendjaya et al. (2008) recommended that further studies be conducted regarding the discriminant, predictive and concurrent validity of the SLBS. Considering this, Sendjaya and Cooper (2011) conducted research to determine whether the multidimensional construct of the SLBS was valid.

Using structural equation modelling, they found that a hierarchical model, rather than a six-factor model, was the best representation of the construct of servant leadership. After similar verification of the structural models of the MLQ 5x and the SLQ, Sendjaya and Cooper (2011) conceded that the validity of the six-factor model may be context dependent. Moreover, they grant that it is useful to retain the six-factor model for practical management purposes,

especially for training and development, selection or promotion purposes (Sendjaya & Cooper, 2011, p.429).

In terms of predictive validity, Sendjaya and Cooper (2011, p.433) cited studies by Beazley and Gemmill, Joseph and Winston, and Linden et al., who suggest that servant leadership is a positive predictor of soft measures of corporate performance such as subordinate organisational commitment, innovative behaviour, spiritual and moral values, and community citizenship behaviour. However, as it is difficult to measure these behaviours, the effect they have on the long-term profitability of organisations, remains largely speculative. In fact, the fixation on short-term profits in organisations may well run contrary to servant leadership which is focused on long-term results (Sendjaya & Cooper, 2011, p.433).

It is thus clear that further research is still required regarding the discriminant validity of the SLBS, the effect of context on the six-factor structure, as well as the predictive validity of the SLBS.

2.3.1.3 *The Servant Leadership Survey (SLS)*

Up to this point in the discussion of both the SLQ and the SLBS, the primary focus of servant leadership has been on the development and needs of the follower. As mentioned, this may contradict the need of organisations to achieve short-term profitability goals and therefore it may hinder the uptake and implementation of servant leadership in organisations. Van Dierendonck and Nuijten (2011, p.251) argue that it is equally important to pay attention to the “leader” part of servant leadership. Citing Greenleaf, they claim that “a servant leader knows very well where to take the organisation and the people in it.” Servant leadership is therefore also about giving direction and about having the courage to hold people accountable for their own good (Van Dierendonck & Nuijten, 2011, p.25).

Furthermore, while Van Dierendonck and Nuijten (2011, p.251) agree that problems exist in proving the multi-factor structure of measures such as the SLBS, servant leadership is too complex a theory to be measured on a one-dimensional scale.

Considering the above, Van Dierendonck and Nuijten developed the SLS. In their research they identified eight servant leadership dimensions, which are presented with their respective descriptions and items in Table 2.5 (Van Dierendonck & Nuijten, 2011, pp.251 – 252).

Table 2.5. Dimensions of the SLS

Dimension	Description
Empowerment $\alpha = .94$	<p>Empowerment aims at fostering a pro-active, self-confident attitude among followers and it gives them a sense of personal power. The servant leader's belief in the intrinsic value of each individual is the central issue in empowerment. Empowering behaviour includes coaching followers for innovative performance, encouraging them to make their own decisions, and promoting information sharing.</p> <p>Items</p> <ul style="list-style-type: none"> • My manager gives me the information I need, to do my work well. • My manager encourages me to use my talents. • My manager helps me to further develop myself. • My manager encourages his staff to come up with new ideas. • My manager gives me the authority to take decisions which makes work easier for me. • My manager enables me to solve problems myself instead of just telling me what to do. • My manager offers me abundant opportunities to learn new skills.
Accountability $\alpha = .93$	<p>When followers know what is expected of them, it is beneficial to both the follower and the organisation. Holding followers accountable for the performance they can control, is a powerful way of showing confidence in followers and it provides them with the necessary boundaries within which they can achieve their goals.</p> <p>Items</p> <ul style="list-style-type: none"> • My manager holds me responsible for the work I carry out. • I am held accountable for my performance by my manager. • My manager holds me and my colleagues responsible for the way we handle a job.
Standing back $\alpha = .92$	<p>To make the interests of others a priority; to give others the necessary support they need to accomplish their tasks; to step</p>

	<p><i>back and to allow the follower to be successful and to take the credit.</i></p>
	<p>Items</p> <ul style="list-style-type: none"> • <i>My manager keeps him/herself in the background and gives credit to others.</i> • <i>My manager is not chasing recognition or rewards for the things he/she does for others.</i> • <i>My manager appears to enjoy his/her colleagues' success more than his/her own.</i>
<p><i>Humility</i> $\alpha = .95$</p>	<p><i>Humility is the ability to regard one's own accomplishments and talents from the true perspective. Vulnerability, the admission of being fallible and of having limitations, is part of humility.</i></p>
	<p>Items</p> <ul style="list-style-type: none"> • <i>My manager learns from criticism.</i> • <i>My manager admits his/her mistakes to his/her superior.</i> • <i>My manager tries to learn from the criticism he/she gets from his/her superior.</i> • <i>My manager learns from the different views and opinions of others.</i> • <i>If people express criticism, my manager tries to learn from it.</i>
<p><i>Authenticity</i> $\alpha = .76$</p>	<p><i>Authenticity is about being true to oneself and accurately representing internal states, intentions, and commitments, privately and publicly.</i></p>
	<p>Items</p> <ul style="list-style-type: none"> • <i>My manager is open about his/her weaknesses.</i> • <i>My manager is often touched by the things he/she sees happening around them.</i> • <i>My manager is prepared to express his/her feelings even if this might have undesirable consequences.</i> • <i>My manager shows his/her true feelings to his/her staff.</i>
<p><i>Courage</i> $\alpha = .91$</p>	<p><i>Courage relates to the ability to rely on the values and convictions that govern one's actions to be pro-active, take risks and try new ways to approach old problems.</i></p>
	<p>Items</p>

<p><i>Interpersonal acceptance (changed to Forgiveness after completion of the first three studies)</i></p> <p>$\alpha = .90$</p>	<ul style="list-style-type: none"> • <i>My manager takes risks even when he/she is not certain of the support from his/her own manager.</i> • <i>My manager takes risks and does what needs to be done in his/her view.</i> <p><i>This is about having empathy and compassion. It is also about being able to forgive when offended or faced with the arguments and mistakes of others. Servant leaders should be able to create an atmosphere of trust where followers feel safe to experiment and make mistakes. This kind of atmosphere should facilitate in bringing out the best in followers.</i></p> <p>Items</p> <ul style="list-style-type: none"> • <i>My manager keeps criticizing people for the mistakes they have made in their work. (r)</i> • <i>My manager maintains a hard attitude towards people who have offended him/her at work. (r)</i> • <i>My manager finds it difficult to forget things that went wrong in the past. (r)</i>
<p><i>Stewardship</i></p> <p>$\alpha = .87$</p>	<p><i>The willingness to take responsibility for the larger institution and go for service instead of control and self-interest. This can be achieved by leaders setting the kind of example that encourages others to embrace teamwork and loyalty, and thereby transcend their self-interest for the greater good of the community or organisation.</i></p> <p>Items</p> <ul style="list-style-type: none"> • <i>My manager emphasises the importance of focusing on the good of the whole.</i> • <i>My manager has a long-term vision.</i> • <i>My manager emphasises the societal responsibility of our work.</i>

(Van Dierendonck & Nuijten, 2011, pp.251 – 252)

Van Dierendonck and Nuijten (2011) initially developed 110 items for the abovementioned dimensions. Through a series of three studies using exploratory factor analysis, confirmatory factor analysis and structural equation modelling respectively, the items were reduced to 30. The internal consistency reliability of the eight dimensions was good. The Cronbach's alphas

for each dimension are shown below the dimensions in Table 2.5 (Van Dierendonck & Nuijten, 2011, p.257).

Furthermore, to ensure that the eight-factor model would hold in a different culture, the SLS was translated into English and tested in the United Kingdom (UK). The original studies were conducted in Dutch in the Netherlands. The eight-factor structure was found to be valid in the UK study (Van Dierendonck & Nuijten, 2011, p.257).

Having established the validity of the eight factors, Van Dierendonck and Nuijten conducted further studies to determine the content and criterion-related validity of the scale.

To establish content validity, the SLS was compared with leader-member-exchange (LMX-7), transformational, ethical, charismatic, transactional and two other servant leadership measures. High correlations with other servant leadership scales, ethical, transformational, charismatic leadership, and the LMX-7 were found for empowerment, standing back, humility, authenticity and stewardship.

Low correlations were found between the punishment behaviour of transactional leadership and that of servant leadership. These findings sanction the content validity of the scale since they confirm the similarities and differences between servant leadership and other leadership scales (Van Dierendonck & Nuijten, 2011, p.259). Furthermore, low correlations between the SLS and other scales were found for accountability, courage and forgiveness. This is an indication and confirmation of the discriminant validity of the SLS (Van Dierendonck & Nuijten, 2011, p.259).

Criterion-related validity was tested by correlating the eight dimensions with organisational commitment, performance, and leadership clarity. Weak to moderate correlations were found giving some support for the predictive validity of servant leadership. The relatively weak correlations could have been a result of the sample size (N=48) (Van Dierendonck & Nuijten, 2011, p.259).

The 2011 Van Dierendonck and Nuijten study is an important one in that it incorporates aspects of the leader as well as the follower. Specifically, stewardship, which is defined differently from organisational stewardship in the SLQ, as well as accountability, courage and forgiveness, are unique to the SLS. Stewardship is particularly important in countering the criticism that servant leadership is only focussed on serving and developing the follower, and

that as a result, the short-term profitability goals of companies may suffer at the hand of servant leaders.

2.3.2 Unique contribution to value-based leadership

Servant leadership is unique as it focuses on leading through service, that is motivated by a sense of calling. This sense of calling implies voluntary submission to a higher power, and it brings spirituality into the realm of leadership. Spirituality heightens the level of moral awareness within the leader. True servant leaders will thus base their behaviours on the values that they have internalised through their spirituality, rather than on own ambition. Forgiveness and emotional healing are two additional characteristics unique to servant leadership, which sprout from acting on these internalised values. Servant leadership also has a strong focus on developing and empowering the follower.

2.4 Conceptualisation of Authentic Leadership

Authenticity is rooted in Greek philosophy where the well-known statement, “To thine own self be true” (Avolio & Gardner, 2005, p.319) comes from. Giving credit to Rogers and Maslow on their work regarding fully functioning, self-actualised persons, Avolio and Gardner (2005, p.319) state that because fully functioning persons are “in tune” with themselves and have a realistic opinion of themselves and their lives, they are not burdened by the expectations of others and so therefore they can make sound personal choices.

Authenticity is naturally self-referential – rather than allowing itself to be shaped by the evaluation of others in society, it is deeply self-aware, shapes itself and “is actively involved in the construction of reality rather than being merely a reflection of that reality” (Hewitt, cited in Avolio & Gardner, 2005, p.320).

Authenticity was first applied to leadership in sociology and education. The focus at that time was to define a measure for inauthenticity rather than authenticity (Avolio & Gardner, 2005, p.320). A leader was considered inauthentic when he/she modelled their behaviour on leader stereotypes and on the expectations placed on leaders by others (Henderson and Hoy, cited in Avolio & Gardner, 2005, p.321).

Current notions of authentic leadership are rooted in positive psychology that adopt a positive view of what authentic leadership is, rather than what it is not (Avolio & Gardner, 2005). As such, authentic leaders are defined as

those who are deeply aware of how they think and behave and are perceived by others as being aware of their own and others' values/moral perspectives, knowledge, and strengths; aware of the context in which they operate; and who are confident, hopeful, optimistic, resilient, and of high moral character (Avolio, Luthans and Walumbwa, cited in Avolio & Gardner, 2005, p.321).

Shamir and Eilam (cited in Avolio & Gardner, 2005, p.321) postulate that authentic leaders have the following four characteristics: 1) they don't fake their leadership by conforming to the expectations of others, but are instead true to themselves; 2) their personal convictions are the source of their motivation, rather than the benefits they can gain through their position; 3) they don't copy what others do, but rather lead from their own point of view; 4) their actions are grounded on their personal beliefs.

The ability to remain true to oneself requires heightened levels of self-awareness and self-regulation which are important aspects of authentic leadership. Avolio and Gardner (2005, p.324) state that self-awareness is an ongoing process whereby leaders continually become aware of their "unique talents, strengths, sense of purpose, core values, beliefs and desires." Self-regulation relates to self-control. Authentic leaders learn self-regulation by setting their own internal standards or values, and then aligning their behaviour with these values (Avolio & Gardner, 2005, p.324).

Another critical aspect of authentic leadership, is the high moral and ethical standards that these leaders use to guide their behaviour, according to Avolio and Gardner (2005). Shamir and Eilam (cited in Walumbwa, Avolio, Gardner, Wernsing, & Peterson, 2008, p.93) disagree with this point of view, arguing that leaders can be true to themselves without having attained high levels of moral development or basing their behaviour on moral principles. They caution that authenticity in narcissistic or other dysfunctional personalities can be dangerous.

Gardner, Avolio and Walumbwa (cited in Walumbwa et al., 2008, p.94) however, reject the abovementioned argument, stating that by including self-awareness and self-acceptance in the definition of authentic leadership, low moral development is precluded. Individuals with low moral development are unlikely to be capable of the level of introspection required for a true understanding of oneself.

Considering the above, Walumbwa et al. modified Luthans and Avolio's (2005) definition mentioned earlier as follows: Authentic leadership is

a pattern of leader behaviour that draws upon and promotes both positive psychological capacities and a positive ethical climate, to foster greater self-awareness, an internalised moral perspective, balanced processing information, and relational transparency on the part of the leaders working with followers, fostering positive self-development (Walumbwa et al., 2008, p.94).

Using this definition of authentic leadership, Walumbwa et al. (2008, p.95) operationalised the construct into the four dimensions shown in Table 2.6.

Table 2.6. *Dimensions of authentic leadership*

Dimension	Description
<i>Self-awareness</i>	<i>Refers to the ability to understand how one derives meaning from and makes sense of the world and how this process impacts the way one views oneself over time. It also refers to showing an understanding of one's strengths and weaknesses and the multifaceted nature of the self, which includes gaining insight into the self through disclosing oneself to others, and being cognizant of one's impact on other people.</i>
<i>Relational transparency</i>	<i>Presenting one's authentic self to others. This type of behaviour promotes trust through openly sharing one's true thoughts and feelings while at the same time minimizing displays of inappropriate emotions.</i>
<i>Balanced processing</i>	<i>Refers to the ability to objectively analyse all relevant information before making a decision. Authentic leaders encourage others to give their opinions and to challenge the leader's point of view.</i>
<i>Internalised moral perspective</i>	<i>Refers to an internalised and integrated form of self-regulation that is guided by moral standards and values rather than by group, organisational or societal pressures. It results in decision making and behaviour that is congruent with the internalised values.</i>

(Walumbwa et al., 2008, p.95)

The development of two measures for authentic leadership will be discussed. The first is the Authentic Leadership Questionnaire (ALQ), developed by Walumbwa et al. (2008) and the second is the Authentic Leadership Inventory (ALI) developed by Neider and Schriesheim

(2011). Both measures make use of the abovementioned dimensions. The latter study addresses several aspects of the criticism that Neider and Schriesheim had against the ALQ.

2.4.1 The Authentic Leadership Questionnaire (ALQ)

Walumbwa et al. (2008) conducted three studies using data from the United States, China and Kenya to test the reliability and validity of the ALQ. The inclusion of the Chinese and Kenyan samples was important to this study, as a review by House and Aditya (cited in Walumbwa et al., 2008) indicated that 98% of leadership theory originates in the United States. This culturally diverse study would add to the generalizability of the instrument.

Walumbwa et al. (2008) proposed 22 items for the four dimensions which were reduced to 16 after a content validity assessment conducted by faculty members and doctoral students of a university. Sample items for the ALQ are shown in Table 2.7 (Walumbwa et al., 2008, p.121):

Table 2.7. *Dimensions and items of the ALQ*

Dimension	Sample items
<i>Self-awareness</i>	<ul style="list-style-type: none"> • <i>Seeks feedback to improve interactions with others.</i> • <i>Accurately describes how others view their capabilities.</i>
<i>Relational transparency</i>	<ul style="list-style-type: none"> • <i>Says exactly what they mean.</i> • <i>Is willing to admit mistakes when they are made.</i>
<i>Internalised moral perspective</i>	<ul style="list-style-type: none"> • <i>Demonstrates beliefs that are consistent with actions.</i> • <i>Makes decisions based on their core beliefs.</i>
<i>Balanced processing</i>	<ul style="list-style-type: none"> • <i>Solicits views that challenge their deeply held positions.</i> • <i>Listens carefully to different points of view before coming to conclusions.</i>

(Walumbwa et al., 2008, p.121)

The instrument was translated from English into Chinese using back-translation. In Kenya, the English version of the instrument was used since English is the official language of Kenya (Walumbwa et al., 2008).

In the first study, confirmatory factor analysis (CFA) was used to test the factorial structure of the instrument. It was found that with all three samples the second-order factor model, in which the items loaded onto their respective factors, and these four factors in turn loaded onto a second-order latent authentic leadership factor, was the best fit (Walumbwa et al., 2008). The

high convergent validity of the four dimensions suggested that they do not measure entirely separate and distinct constructs. Further confirmation of the construct validity of the measure was sought in the second study.

In terms of reliability, the internal consistency Cronbach's alphas presented themselves as follows in the US sample: self-awareness, .92; relational transparency, .87; internalised moral perspective, .76; and balanced processing, .81 (Walumbwa et al., 2008, p.98). The Cronbach's alphas for the Chinese sample and Kenyan samples were slightly lower, ranging from .72 to .79 and .70 to .77, respectively. All Cronbach's alphas therefore met or exceeded the minimum acceptable level of .70 (Walumbwa et al., 2008).

During the second study the ALQ was compared to the MLQ and the Ethical Leadership Scale developed by Brown et al. (cited in Walumbwa et al., 2008, p.107) to determine discriminant validity. The results showed that authentic leadership is positively correlated to ethical and transformational leadership, but that it was also significantly distinguishable from these two leadership theories, providing some support for divergent validity. Furthermore, the study provided additional support for the second-order structure of the instrument (Walumbwa et al., 2008).

To determine predictive validity, the effect of authentic leadership on organisational commitment, follower satisfaction and organisational citizenship behaviour (OCB) was measured and compared to the effect of transformational and ethical leadership, on the same constructs. Authentic leadership was found to "account for additional variance in OCB, organisational commitment and satisfaction with supervisor" (Walumbwa et al., 2008, p.111). Walumbwa et al. (2008, p.111) advise that despite this result, authentic leadership may not necessarily be a better predictor of performance across all organisational domains than ethical or transformational leadership, and that further studies should be conducted in this regard.

In the third study, the effect of follower perceptions of the leader's authenticity on job satisfaction as well as individual job performance were examined. The study controlled for the effect of organisational climate. The results showed a positive effect, further enhancing the instrument's predictive validity (Walumbwa et al. 2008, p.117).

An important contribution of the ALQ to the field of authentic leadership is the fact that it provided the first operationalization of the construct and was based on a thorough review of existing leadership theories. This was an important first step in construct development and

validation (Neider & Schriesheim, 2011). Nonetheless, the instrument has not escaped criticism.

2.4.1.1 Criticism of the ALQ

Neider and Schriesheim (2011) are critical of the ALQ for several reasons. They are concerned about the fact that while the item analysis was based on in-depth research, Walumbwa et al. (2008) relied heavily on the subjective opinions of a small number of doctoral students and faculty members for content validation. Quantitative methods have been devised in recent years which are a more effective and objective approach to content validation. They argue that the importance of measurement in the field of leadership calls for the use of rigorous procedures in content validity early in the development of a measure (Neider & Schriesheim, 2011, p.1147).

A further criticism is that the full ALQ is commercially copyrighted. While the ALQ is available to researchers at no cost, Neider and Schriesheim (2011, p.1147) believe access to the instrument could prove problematic in future.

In addition, while Walumbwa et al. (2008) found that the ALQ shows discriminant validity when compared to transformational leadership, Neider and Schriesheim (2011) propose that this finding may not be accurate. Walumbwa et al. (2008) correlated the ALQ with the MLQ, which Neider and Schriesheim argue has serious construct validity issues. This criticism against the MLQ was discussed under transformational leadership in Section 2.1 above. Even though the claims were refuted by Antonakis et al. (2003), Neider and Schriesheim proposed it would be better to compare an authentic leadership measure to the Transformational Leadership Inventory, which they claim to be psychometrically superior to the MLQ (Schriesheim, Alonso & Neider, cited in Neider & Schriesheim, 2011, p.1148).

Lastly, Neider and Schriesheim are concerned about the factor analysis of the ALQ. Based on personal communication from Walumbwa (cited in Neider & Schriesheim, 2011, p.1148), two 'garbage parameters' were included in the specification and testing of their first- and second-order factor models. Neider and Schriesheim state that these parameters would result in inflated model fit and would "weaken the conclusion that a second-order factor model is a significantly better portrayal of authentic leadership than a simple first-order model" (Neider & Schriesheim, 2011, p.1148).

2.4.2 The Authentic Leadership Inventory (ALI)

Based on the above discussion, Neider and Schriesheim (2011) developed a new measure for authentic leadership, the Authentic Leadership Inventory (ALI), in which they aimed to pay specific attention to the criticism levelled at the ALQ.

Neider and Schriesheim (2011) used the same four dimensions for the ALI as used by Walumbwa et al. (2008) for the ALQ. To provide maximum convergence and conformity with the ALQ, Neider and Schriesheim (2011) paraphrased two items from the sample items provided by Walumbwa et al. for each dimension, and developed two new items. This totalled four items per dimension.

Neider and Schriesheim (2011) made use of one-way ANOVAs and t-tests to validate the items. Support was found for seven of the eight Walumbwa et al. (2008) items. In total two items were deleted, leaving 14 items in the final version of the measure (Neider & Schriesheim, 2011, p.1149). These are shown in Table 2.8.

Table 2.8. *Dimensions and items of the ALI*

<i>Dimension</i>	<i>Item</i>
<i>Self-awareness</i>	<ul style="list-style-type: none"> • <i>My leader describes accurately the way others view his/her abilities.</i> • <i>My leader shows that he/she understands his/her strengths and weaknesses.</i> • <i>My leader is clearly aware of the impact he/she has on others.</i>
<i>Relational transparency</i>	<ul style="list-style-type: none"> • <i>My leader clearly states what he/she means.</i> • <i>My leader openly shares information with others.</i> • <i>My leader expresses his/her ideas and thoughts clearly to others.</i>
<i>Internalised Moral Perspective</i>	<ul style="list-style-type: none"> • <i>My leader shows consistency between his/her beliefs and actions.</i> • <i>My leader uses his/her core beliefs to make decisions.</i> • <i>My leader resists pressures on him/her to do things contrary to his/her beliefs.</i> • <i>My leader is guided in his/her actions by internal moral standards.</i>

<i>Balanced Processing</i>	<ul style="list-style-type: none"> • <i>My leader asks for ideas that challenge his/her core beliefs.</i> • <i>My leader carefully listens to alternative perspectives before reaching a conclusion.</i> • <i>My leader objectively analyses relevant data before making a decision.</i> • <i>My leader encourages others to voice opposing points of view.</i>
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(Neider & Schriesheim, 2011, p.1149)

The internal consistency reliability was acceptable with the Cronbach's alphas ranging between .74 and .85 (Neider & Schriesheim, 2011, p.1153).

When correlating the Transformational Leadership Inventory and the ALI, support was found for the discriminant validity of the ALI (Neider & Schriesheim, 2011, p.1159).

Interestingly, the ideal factor structure of the ALI was however not conclusive. During the Neider and Schriesheim study, participants were asked to rate two US presidential candidates, Obama and McCain, when completing the questionnaire. The results showed best fit for a first-order, four-factor model, or a higher-order, more general unitary construct, depending on which candidate was being rated. The latter model appeared to fit better when rating Obama, which could be because he was stereotypically seen as authentic, charismatic and almost magical, and opinions therefore lacked the granularity which would support a first-order, four factor model (Neider & Schriesheim, 2011, p.1163).

During their study, Neider and Schriesheim (2011) managed to overcome three of the four criticisms they had of the ALQ in their ALI. The ALI has added value in that it provides researchers with the items used in the ALI. More stringent, quantitative measures were used to validate the content, and further confirmation of the discriminant validity of the measure has been provided. Further research is however required concerning the structural validity of the measure.

2.4.3 Unique contribution to value-based leadership

Avolio and Gardner (2005) argue that self-awareness, self-regulation and the anchoring of behaviour in the leaders' deep sense of self and their moral values, distinguish authentic leadership from other value-based leadership theories such as transformational and servant

leadership. This then, is the main contribution that authentic leadership adds to the field of value-based leadership.

2.5 Conceptualisation of Ethical Leadership

Ethical scandals in business in the past two decades have sparked renewed interest in ethical leadership. As discussed in Chapter 1, social learning theory dictates that followers will tend to do what they see their leaders doing. When organisations gain the reputation of being unethical (Enron being a good example) the origin of the unethical behaviour should be sought in the office of the leaders (Brown, Trevino, & Harrison, 2005; Spangenberg & Theron, 2005; Yukl, Mahsud, Hassan, & Prussia, 2013). To build ethical organisations, it would therefore be prudent to ensure that the leaders of these organisations are ethical leaders.

One way of doing that would be to assess, by means of a behavioural test, the extent to which potential leaders meet the criteria of an ethical leader. Developing such a test, requires a clear definition of ethical leadership. It appears however, that pinning down an exact definition of ethical leadership has proved problematic, and that many thoughts about ethical leadership have been based on philosophical ideas of how leaders ought to behave (Brown et al., 2005). As recently as 2013, Yukl et.al. stated that “the question of how to define and measure ethical leadership has not been resolved, and there is substantial conceptual confusion about this construct” (Yukl et.al., 2013, p.39).

2.5.1 Initial notions of ethical leadership

Brown et al.'s (2005) empirical search for a definition of ethical leadership started with comparisons between transformational leader characteristics and what they deemed to be characteristics of ethical leadership. Ethical and transformational leadership are linked in that such leaders can be relied upon to do what is right and they are role models of high levels of moral behaviour (Avolio, cited in Brown et al., 2005, p.118).

A further link to transformational leadership is found in the concepts honesty, integrity and trustworthiness, which are components of a transformational leader's idealised influence (Avolio, Bass & Steidlmeier, cited in Brown et al., 2005, p.119). These concepts are generally linked to the idea of a 'moral person' which is congruent with the ideal of an ethical person (Engelbrecht, Heine, & Mahembe, 2015; Trevino, Hartman & Brown, cited in Brown et al., 2005, p.119).

In addition to being a 'moral person', the ethical leader is also a 'moral manager' (Gini; Trevino et al., cited in Brown et al., 2005, pp.118 - 119) in that he/she holds followers accountable for their ethical conduct and for upholding ethical standards. In this sense, the leader is more of a transactional than a transformational leader. Transactional leadership is generally not considered a value-based leadership theory. However, it seems that ethical leaders are likely to "use both transformational and transactional leadership approaches to influence followers" (Brown et al., 2005, p.118) in that they use "processes such as standard setting, performance appraisal, and reward and punishment to hold followers accountable for ethical conduct" (Brown et al., 2005, p.118).

Brown et al. (2005, p.119) found that elements of ethical leadership are also present in notions of justice through the creation of a just work environment. This includes the leader practicing fairness in his/her interactions with followers and treating them with respect and dignity (Bies and Moag, cited in Brown et al., 2005, p.119). Trevino et al., (cited in Brown et al., 2005, p.119) confirm this by stating that perceptions of ethical leadership are derived from leader behaviour marked by concern for, and fair treatment of followers.

Furthermore, ethical leadership encompasses the leader basing his/her decisions on moral principles, as well as providing followers with ethical guidelines that they are expected to uphold (Avolio; Trevino et al., cited in Brown et al., 2005, p.119). The ethical leader is a role model for appropriate behaviour, who communicates the benefits of modelling ethical behaviour, as well as the costs of inappropriate behaviour, to his followers (Brown et al. 2005, p.120). The importance of role modelling in leader behaviour was discussed in the introductory chapter (Chapter 1) and is raised again here by Brown et al., (2005). Followers cannot be expected to behave ethically if this behaviour is not modelled by a leader who is regarded as "attractive, credible and legitimate" (Brown et al., 2005). The leader must make a point of talking to followers about the importance of ethical behaviour and this rhetoric must be underpinned by the ethical, fair and considerate behaviour of the leader, to build the leader's credibility as an ethical leader (Brown et. al, 2005).

Spangenberg and Theron (2005) add the ethical leader's responsibility of setting a moral climate, and building a moral culture in an organisation, as further critical behaviours for an ethical leader. Ethical leaders do this by defining organisational ethics and values and by modelling these ethical principles and values daily (Jose & Thibodeaux; O'Boyle & Dawson, cited in Spangenberg & Theron, 2005, p.2). A culture of ethics is built by what leaders "monitor and control, how they react to critical events and what criteria they use for recruiting, selecting,

rewarding and dismissing organisational members” (Schein, cited in Spangenberg & Theron, 2005, p.2).

For ethical management to be successful, it must be embedded in an ethical vision. Spangenberg and Theron (2005, p.2) state that an ethical vision is unique to ethical leadership and it differs from the traditional organisational vision. While the traditional organisational vision concerns itself with the overall effectiveness of the people and the organisation (Spangenberg & Theron, 2005, p.2), the ethical vision aims to achieve ethical organisational behaviour. As such, it may include aspects such as “*giving people a sense of moral purpose, reconciling business efficiency with social responsibility, fostering the uniqueness and integrity of the individual and group, and treating all internal and external stakeholders with respect, honesty and integrity*” (Spangenberg & Theron, 2005, p.2). Spangenberg and Theron (2005) suggest that the ethical vision can either be incorporated in the general vision of the organisation, or run parallel to it.

The most recent attempt to establish what behaviours constitute ethical leadership was conducted by Yukl et al. (2013). They did so by analysing the constructs measured in the following leadership scales: The Ethical Leadership Survey (Brown et al., cited in Yukl et al., 2013), Perceived Leader Integrity Scale (Craig & Gustafson, cited in Yukl et al., 2013), Ethical Leadership at Work Questionnaire (De Hoog & Den Hartog, cited in Yukl et al., 2013), as well as the ALQ (Yukl et al., 2013) and the SLQ (Yukl et al., 2013), discussed earlier in this chapter.

Yukl et al. (2013) found that the topics covered in these measures that are most pertinent and unique to ethical leadership include:

- a) *honesty and integrity (including consistency of actions with espoused values);*
- b) *behaviour intended to communicate or enforce ethical standards;*
- c) *fairness in decisions and the distribution of rewards (no favouritism or use of rewards to motivate improper behaviour);*
- and d) *behaviour that shows kindness, compassion, and concern for the needs and feelings of others (rather than attempts to manipulate, abuse, and exploit others for personal gain)* (Yukl et al., 2013, pp.40 – 41).

2.5.2 Defining ethical leadership

Several notions of what ethical leadership is, have been discussed here. Brown et al. (2005) provided a definition of ethical leadership, based on several of these notions, which is commonly referred to when researchers discuss ethical leadership: It is “*the demonstration of normatively appropriate conduct through personal actions and interpersonal relationships, and*

the promotion of such conduct to followers through two-way communication, reinforcement and decision-making" (Brown et al., 2005, p.120).

Brown et al. (2005, p.120) state that they have purposefully kept the definition vague, because that which is regarded as normative behaviour in one culture, may not be considered normative in another. Eisenbeiss (2012, p.791), however, regards this vagueness as problematic and states that without providing specific norms that ethical leaders can refer to, the definition is ethically relative. Giessner and Van Quaquebeke (2010) echo this thought by stating that while they cannot argue against this definition, it does not provide much to work with. The term "normatively appropriate" is vague and provides no guidelines for behaviour (Giessner & Van Quaquebeke, 2010, p.43).

The problem of ethical relativism was also discussed in the introductory chapter. The researcher wishes to reiterate here the opinion that ethical absolutism is preferable, as "without universal moral standards we are left with no way to condemn cannibalism, physical torture, mutilation, wife beating, child abuse, slavery, murder, or genocide if they are part of the habitual practice and cultural traditions of a group" (Bell, cited in Kinnier et al., 2000, p.6).

Giessner and Van Quaquebeke (2010), as well as Eisenbeiss (2012) attempted to establish clarity around what normatively appropriate conduct is, but from two different perspectives, as will be explained below.

2.5.2.1 Relational model theory

An important part of Brown et al.'s (2005) definition is the focus on the relationship between the leader and follower and the role that this interaction has in ethical leadership. Giessner and Van Quaquebeke (2010) agree that this relationship is key to understanding ethical behaviour. Giessner and Van Quaquebeke (2010, p. 44) argued that the type of relationship between leader and follower plays an important role in determining whether the leader's actions are regarded as ethical. Judging whether a leader is ethical or not, is thus dependent on the normative standards that are embedded in the relationship between the leader and stakeholders, rather than whether the leader adheres to a specific list of ethical behaviours or not (Giessner & Van Quaquebeke, 2010, p.44 and p.52).

They based their research on the Relational Models Theory (RMT) (Fiske, cited in Giessner & Van Quaquebeke, 2010, p.44). RMT suggests four basic mental models whereby people

manage their interactions with others (Giessner & Van Quaquebeke, 2010, p.45). These four models with the underlying normatively appropriate conduct for each, are shown in Table 2.9.

Table 2.9. *Relational models, guiding relationship principles and underlying norms*

Relational model	Underlying guiding relationship principle	Morality	Follower's mental model of ethical leadership
<i>Communal Sharing</i>	<i>Equivalence; people get things according to needs and give things according to abilities.</i>	<i>'One-for-all and all for one'; altruism. Sharing generously with others; love and care; fulfilling needs; unity</i>	<i>Leader and follower must belong to a common psychological group in which resources are shared and leadership is caring about others and shows altruistic behaviour.</i>
<i>Authority ranking</i>	<i>Hierarchy; higher ranking people get more.</i>	<i>'Noblesse oblige'; respect, deference, loyalty, and obedience by followers; responsibility, security, protection and direction by leader</i>	<i>Leader must guide and provide security for followers and treat all parties according to hierarchical rank</i>
<i>Equality matching</i>	<i>Balance; things must be equal</i>	<i>'Tit-for-Tat'; equal treatment; reciprocal revenge; everyone should get the same thing</i>	<i>Leadership must be even-handed, provide equal opportunities, equal voice and equal contributions</i>
<i>Market pricing</i>	<i>Proportion; calculation of cost-benefit ratios based on value or utility metrics</i>	<i>'Greatest good for the wealthiest'; Calculation of utilities based on negotiated contracts; costs and benefits</i>	<i>Leadership through negotiated contracts between the follower and the leader with a common metric (e.g. money). Follower considers cost-benefit calculations to determine appropriate actions.</i>

(Giessner & Van Quaquebeke, 2010, p.46)

What makes this research of Giessner and Van Quaquebeke (2010) interesting and relevant is that the way in which these mental models are expressed in a relationship, is dependent on the culture in which the relationship finds itself, be that an ethnic, organisational or situational culture (Giessner & Van Quaquebeke, 2010, p.47). While the research concurs with the research of Brown et al. (2005), Brown and Trevino (2006), Spangenberg and Theron (2005) and Yukl et al. (2013) in that certain leader behaviours such as altruism, caring, equality, fairness and guidance are defined as typical of ethical leaders, (thus providing an ethical absolutist base), the focus on the relational context puts this research back into the realm of ethical relativism.

The argument does, however, make perfect sense to the researcher in the context of the differences between African (Ubuntu) and Western moral philosophy that were discussed in Chapter 1. Take for example the relational models 'community sharing' (CS) and 'authority ranking' (AR). Community is central to the concept of Ubuntu and it is through relationship with others that morality and humanness are developed (Metz & Gaie, 2010). Within the community "values such as caring, sharing, compassion, communalism, communocracy and related predispositions" (Khoza, cited in Gumbo, 2014, p.67) are practiced. This ties in with "altruism, sharing generously with others, love and care, fulfilling needs" (Giessner & Van Quaquebeke, 2010, p.46) expressed in CS, as well as the notion that "leader and follower must belong to a common psychological group in which resources are shared" (Giessner & Van Quaquebeke, 2010, p.46). Extending these values to those within one's psychological group, is therefore in line with Ubuntu thinking. From a Western perspective, the psychological group to which these values should extend, may however, not be limited to the immediate community, but should rather be extended to society as whole, with whom a common, concrete notion of morality is expected to be understood.

Authority ranking is another case in point. Ubuntu calls for younger generations to treat their elders, who are the custodians of wisdom and knowledge, with respect and dignity (Gumbo, 2014). In Western culture, despite the saying 'respect your elders', which is commonly used to reprimand children, respect is often viewed as something that must be earned and is not automatically bestowed upon a person because of their age. Gumbo specifically notes that since African governments have moved away from the community-based government systems informed by Ubuntu, and have taken on Western forms, an attitude of disregard for elders has crept in and they are often regarded as illiterate or ignorant (Gumbo, 2014, p.69). The possibility that the notion of 'noblesse oblige' finds a different interpretation among followers of Ubuntu, versus followers of Western morality, is therefore plausible.

The researcher thus finds herself here between the proverbial rock and the hard place. There are compelling arguments both for and against ethical relativism. On balance, and perhaps primarily because to date more research has been done on this topic in the West than elsewhere, the argument for ethical absolutism appears stronger. Possibly more research on ethical relativism is needed, especially as defining exactly what constitutes ethical leader behaviour remains elusive (Yukl et al., 2013, p. 39).

For the purposes of this study, the researcher chooses to refer to definitive ethical behaviours as inferred from the literature, in the development of a behavioural scale for holistic value-based leader behaviour. This scale could be used in varying cultural contexts in further research, to uncover the effect of culture on the interpretation of the behaviours.

2.5.2.2 Central ethical orientations

Eisenbeiss provided an alternate attempt to define ethical leader behaviour. Citing Trevino and Weaver, Eisenbeiss stated that for actions to be judged as ethical or not, a normative framework for ethical behaviour should exist (Trevino & Weaver, cited in Eisenbeiss, 2012, p.793). Eisenbeiss analysed the research conducted prior to her own research, and found that it fell short in that it focussed solely on a Western perspective of ethics (Eisenbeiss, 2012, p.793). This ties in with the researcher's point of view explored in the introductory chapter, that a global standard for normative moral behaviour should be established.

Based on this, Eisenbeiss (2012) conducted a study through which she established four overall guiding principles, which she termed the "central ethical orientations" (Eisenbeiss, 2012, p.792). In arriving at these principles, Eisenbeiss analysed Western, Eastern and to some extent, African viewpoints, on the following four central ethical orientations (see Table 2.10):

Table 2.10. Central Ethical Orientations

Ethical Orientation	Leadership component addressed	Leader behaviour
Humane orientation	The humane and justice orientations mainly address the influence that the leader has on followers, the way the	"Treating others with dignity and respect and seeing them as ends and not means" (Eisenbeiss, 2012, p.795).

Justice orientation	leader exerts control over followers and how he/she treats stakeholders (Eisenbeiss, 2012, p.795).	Being fair, consistent and non-discriminatory in interaction with followers (Eisenbeiss, 2012, p.796).
Responsibility and sustainability orientation	This relates specifically to the “leadership component of setting goals and making strategic decisions and therein may mirror the leader’s concern about long-term success, the welfare of the wider community and environmental protection” (Eisenbeiss, 2013, p.795).	Taking responsibility for, and being concerned about, the wellbeing of society and the environment (Eisenbeiss, 2012, p.796)
Moderation orientation	This is a cross-sectional dimension relating to both the process of influencing interpersonal relationships, and the task-orientated leadership aspects of goal setting and strategic decision-making (Eisenbeiss, 2013, p.795).	Balanced leader behaviours expressed in the “ability to restrain emotions and personal desires, humility, as well as careful and wise attempts to find balance between organisational objectives and stakeholder interests” (Eisenbeiss, 2012, p.797).

(Eisenbeiss, 2012, p.792)

In her analysis of ethical leadership literature, Eisenbeiss, concluded that

- 1) the approaches on ethical leadership she had analysed, focussed on the humane and justice orientations, but they neglected the moderation, responsibility and sustainability orientations (Eisenbeiss, 2012, p.797), and
- 2) when analysing the literature to determine whether there were any other normative reference points beyond the four mentioned above, it seemed that these four incorporated all other reference points (Eisenbeiss, 2012, p.797).

To gain an understanding of how the theory discussed above was operationalised and by what dimensions and items ethical leadership has been measured, three instruments, the Ethical Leadership Scale (ELS) (Brown et al., 2005), the Ethical Leadership Inventory (ELI)

(Spangenberg & Theron, 2005) and the Ethical Leadership Questionnaire (ELQ) (Yukl et al., 2013) will be discussed. These have been chosen because the ELS was one of the first scales developed on this topic, the ELQ appears to have been the most recent scale developed, and the ELI was developed in South Africa. These three scales should thus provide a balanced spectrum of dimensions and items for ethical leadership.

2.5.3 The Ethical Leadership Scale (ELS)

The ELS was most likely the first scale to have been developed for ethical leadership and thus gives subsequent scale developers a base to work from. The ELS is based on social learning theory which proposes that followers learn ethical conduct by observing the behaviour modelled by their leaders (Brown et al., 2005, p.119). Modelling relates to Bandura's concept of vicarious experience in his theory on self-efficacy. According to Bandura, anything that can be learned through direct experience can also be learned via vicarious, or second-hand, experience (Bandura, cited in Brown et al., 2005). This is important for ethical leadership, as it highlights how critical it is that leaders model ethical behaviour to develop ethical followers, and an ethical organisation.

Based upon the empirical research into a definition for ethical leadership which was discussed in the previous section, Brown et al. developed 48 items with which to measure ethical leadership. These were reduced to 10 items after conducting exploratory factor analysis and consulting a construct development expert (Brown et al., 2005). The final 10 items are listed in Table 2.11.

Table 2.11. *Items of the ELS*

<i>Items</i>
<ul style="list-style-type: none"> • <i>Listens to what employees have to say.</i> • <i>Disciplines employees who violate ethical standards.</i> • <i>Conducts his personal life in an ethical manner.</i> • <i>Has the best interest of employees in mind.</i> • <i>Makes fair and balanced decisions.</i> • <i>Can be trusted.</i> • <i>Discusses business ethics or values with employees.</i> • <i>Sets an example of how to do things the right way in terms of ethics.</i> • <i>Defines success not just by results but also by the way that they are obtained.</i> • <i>When making decisions, asks "what is the right thing to do?"</i>

(Brown et al., 2005, p.125)

The internal consistency reliability of the ELS was excellent with the Cronbach's alpha equal to .92 (Brown et al., 2005).

Through a series of seven studies, using samples from various universities and from a financial services firm, Brown et al. (2005) used exploratory factor analysis, confirmatory factor analysis and structural equation modelling to test for construct, discriminant and predictive validity. Structurally, the results indicated that the best fit was a one-dimensional model where items loaded onto a single ethical leadership factor (Brown et al., 2005, p.125).

The ELS showed predictive validity in terms of "perceived leader effectiveness, job dedication (willingness to give extra effort to one's job) and followers' willingness to report problems to management" (Brown et al., 2005, p.130). In comparing the ELS to consideration-orientated leadership and passive-avoidant leadership from the MLQ, results indicated that eight of the 10 ELS items were significantly more likely to predict ethical leadership than passive avoidant leadership, and seven of the 10 ELS items were more likely to predict ethical leadership than the LBDQ-Form XII used to measure consideration. This provides evidence of discriminant validity.

The ELS has added value in terms of the empirical research conducted to define ethical behaviour, and provided a benchmark for further development of scales and research regarding ethical leadership.

2.5.4 The Ethical Leadership Inventory (ELI)

The ELI is an important inclusion in the current research, because it was developed in South Africa. During the content validation phase, business leaders were asked to rate the items. This contributed to the support of the instrument in the business community (Spangenberg & Theron, 2005, p.3). In addition, while the ELS focused on the ethical behaviour of the leader, the ELI also focusses on leaders' ability to implement the vision of ethical leadership and monitor ethical behaviour. In comparison to the ELS, which is a condensed 10-item scale, the ELI is very comprehensive.

The purpose of developing the ELI was to create a 360-degree instrument which could be used to assess middle to executive level managers in all organisational sectors (Spangenberg & Theron, 2005, p.3). Through 360-degree feedback, leaders tend to receive more insightful feedback than through self-assessments.

Initially, 24 dimensions with 276 items were formulated, which were checked for relevance by a panel of industrial psychologists. These were reduced to 19 dimensions and 103 items after two rounds of using the Delphi technique (Spangenberg & Theron, 2005, p.4). The final dimensions with their descriptions are listed in Table 2.12.

Table 2.12. *Dimensions of the ELI*

Creating and sharing an ethical vision

- 1) ***Understanding the ethical dynamics in the external and internal environments.***
Diagnoses ethical dynamics in the external and internal environments to develop an ethical vision.
- 2) ***Developing a challenging vision***
Develops a collective ethical vision that inspires people and gives them a sense of purpose, is customer-focused and advances diversity in people.
- 3) ***Building trust in the leader and the unit.***
The leader creates trust in him/herself and builds confidence in the unit.
- 4) ***Articulating an ethical vision and enlisting followers.***
Articulates an ethical vision for the future that provides direction. Inspires confidence in the vision and obtains follower commitment for the vision.
- 5) ***Conceptualising ethical strategy***
Defines strategic ethical issues clearly. Builds strategies and plans based on thorough problem analysis and broad-based fact-finding. Considers consequences of decisions.

Enabling the leader and the unit to implement the ethical vision

- 6) ***Enabling the leader***
Identifies challenging opportunities for self-development and is committed to continuous learning. Appreciates feedback and has good insight into his/her own ethical identity, capabilities and behaviour.
 - 7) ***Empowering followers***
Encourages followers to accept responsibility for their own ethical learning and growth. Creates conditions which allow them the opportunity to take meaningful decisions.
 - 8) ***Formulating and implementing ethical structures and systems***
Adapts structures, processes and procedures to support implementation of ethical strategy in a changing environment. Implements ethical structures and systems, for example a code of ethics, an ombudsman, an ethics committee, and ethics training programmes.
-

9) Building an ethical culture and climate

Builds a culture that reflects shared beliefs, values and norms; shared perceptions of ethically correct behaviour; and guidance for handling difficult ethical issues.

Implementing the ethical vision**Leading with courage, integrity and sensitivity****10) Acting honestly and with integrity**

Honestly manages the organisational unit and consistently lives according to the values embedded in the vision.

Considers ethical implications of decisions, assures agreed upon values and adheres to and deals honestly with all stakeholders.

11) Decisiveness and hardiness

Acts decisively and makes tough ethical decisions. Performs effectively under stress and reacts positively to change and uncertainty.

12) Demonstrating interpersonal sensitivity

Considers the needs, feelings and dignity of others. Works towards productive interpersonal relations.

Encouraging ethical behaviour**13) Challenging current reality and stimulating learning**

Challenges current thinking about ethics, reconsiders and improves current practices on an ethical basis. Promotes continuous ethical learning.

14) Inspiring people towards ethical behaviour

Raises the aspirations of followers and builds confidence in them to perform effectively and ethically. Articulates ethical issues clearly.

Stimulating ethics across boundaries**15) Facilitating interdepartmental co-ordination**

Facilitates cross-functional collaboration and teamwork. Helps people to see the ethical big picture.

16) Influencing external stakeholders

Maintains productive relationships with external stakeholders and builds the ethical image of the organisation.

Leading ethical initiatives and rewarding ethical contributions**17) Planning and implementing ethical initiatives**

Ensures that ethical expectations of the unit and its members are clarified, and that ethical initiatives are designed and aligned with ethical and business strategies.

18) Reviewing ethical initiatives and behaviour

Reviews the outcomes of unit, team and employee ethical initiatives. Provides specific feedback to followers to help them assess their own contribution to these initiatives.

19) Rewarding ethical contributions and behaviour

Gives recognition for accomplishing ethical initiatives as well as for exemplary work-related attitudes and behaviour; celebrates ethical success.

(Spangenberg & Theron, 2005, p.4)

Item analysis was performed to determine whether any of the items should be eliminated, because they did not contribute significantly to the ethical leadership dimension they were associated with (Spangenberg & Theron, 2005, p.6). Two items were identified as problematic and they were removed. A further four items were identified as suspect, but these were not removed as their removal would have resulted in only a marginal increase in the Cronbach's alphas (Spangenberg & Theron, 2005, p.6). In the final analysis, the reliability Cronbach's alphas were above .80 for 18 of the subscales and one subscale scored .79. This was a satisfactory reliability result (Spangenberg & Theron, 2005, p.6).

Factor analysis was performed to determine the factor structure. The eigenvalue rule was used to determine the number of factors to be extracted. All nineteen dimensions passed the unidimensionality test with factor loadings of between .565 and .870, which was a satisfactory result (Spangenberg & Theron, 2005).

Next, the fit of the first-order measurement model was assessed. Four fit measures were used to arrive at a conclusion regarding the overall fit of the model. The Satorra-Bentler chi-square test statistic was significant ($p < .01$), and the null hypothesis of exact model fit was therefore rejected. The chi-square result suggested an acceptable fit of the data. When expressing the chi-square (χ^2) in terms of degrees of freedom (χ^2/df) the result was 2.26. This result suggested acceptable fit of the data, as the value was between 2 and 5. The root mean square error of approximation (RMSEA) indicates reasonable fit when the RMSEA value is greater than .05 but less than .08. In this case, the RMSEA value was .063, indicating a reasonable fit (Spangenberg & Theron, 2005, p. 9). "The expected cross-validation index (ECVI) was smaller (5.12) than the value obtained for the independence model (332.31) but larger than the ECVI value associated with the saturated model (4.72). The parsimonious normed fit index (PNFI = .69) and the parsimonious goodness-of-fit index (PGFI = .51) approached model fit however, together with the ECVI results seemed to suggest that the model still lacks one or more influential paths" (Spangenberg & Theron, 2005, pp. 10 – 11).

While the factor analysis results, together with the fit results seem to support a unidimensional model, Spangenberg and Theron (2005, p.7) suggest that to give credibility to this claim, the measurement model would need to be expanded into a fully-fledged, theory-driven structural model. Confirmatory factor analysis should then be performed, using the same data set as was used for the exploratory factor analysis above.

Furthermore, “the moderately high component loadings, the moderate percentage of variance in the data explained by the single components, and the general inability of the single component solutions to reproduce the observed correlation matrices, suggest that the ELI items generally also reflect a fair amount of non-relevant information” (Spangenberg & Theron, 2005, p.7).

Compared to other ethical leadership measures, the ELI is very comprehensive. It could thus be criticised for being too long and too detailed, however, the extensiveness of the items adds value as it provides a solid base of dimensions and items for further research.

2.5.5 The Ethical Leadership Questionnaire (ELQ)

In Yukl et al.'s (2013) analysis of scales which measure aspects of ethical leadership (i.e. Ethical Leadership Survey, Perceived Leader Integrity Scale, Ethical Leadership at Work Questionnaire, the ALQ and the SLQ) as discussed earlier, Yukl et al. attempted to add further clarification to the concept of ethical leadership. During their analysis, some short-comings in the scales analysed were identified, and in response a new scale, which aims to address these short-comings, was developed.

The short-comings of the scales Yukl et al., (2013) analysed, included items that were negatively instead of positively worded, vaguely worded items which lead to confusion, the absence of certain ethical behaviours, and the inclusion of core task and relations behaviours which are not exclusively ethical behaviours (Yukl et al., 2013, pp.39 – 40).

Yukl et al.'s analysis concluded that the most relevant behaviour to include when evaluating ethical leadership are honesty and integrity, communication of ethical standards, fairness in decision making and reward distribution, and benevolence (i.e., kind, caring, compassionate behaviour) (Yukl et al., 2013, pp.40 – 41). In addition to including these behaviours in their proposed measurement, Yukl et al. (2013) wanted to explore the impact of ethical leadership on leader-member-exchange (LMX) and on work unit performance, while controlling for task, relations and change behaviours (Yukl et al., 2013, p.42).

During the item development phase, Yukl et al. (2013) aimed to use and adapt items from the measurements they had analysed, to maintain some continuity. Any items that appeared to confuse ethical leadership “with task and relations-orientated behaviour (e.g., clarifying roles and empowering or developing subordinates), or with items in the LMX-7 scale (e.g., trust the leader to defend your interests)”, were excluded (Yukl et al., 2013, p.43).

The 15 items used in the ELQ are listed in Table 2.13 (Yukl et al., 2013, p.46).

Table 2.13. *Items of the ELQ*

My boss:

1. *Shows a strong concern for ethical and moral values.*
2. *Communicates clear ethical standards for members.*
3. *Sets an example of ethical behaviour in his decisions and actions.*
4. *Is honest and can be trusted to tell the truth.*
5. *Keeps his actions consistent with his stated values ('walks the talk').*
6. *Is fair and unbiased when assigning tasks to members.*
7. *Can be trusted to carry out promises and commitments.*
8. *Insists on doing what is fair and ethical even when it is not easy.*
9. *Acknowledges mistakes and takes responsibility for them.*
10. *Regards honesty and integrity as important personal values.*
11. *Sets an example of dedication and self-sacrifice for the organisation.*
12. *Opposes the use of unethical practices to increase performance.*
13. *Is fair and objective when evaluating member performance and providing rewards.*
14. *Puts the needs of others above his own self-interest.*
15. *Holds members accountable for using ethical practices in their work.*

(Yukl et al., 2013, p.46)

The results showed that the ELQ has high reliability, with Cronbach's alphas ranging from .74 to .96 (Yukl et al. 2013, p.44).

Factor analysis confirmed that the ELQ items are distinct from task- and change-orientated behaviours. There was also minimal overlap with relations-orientated behaviours (Yukl et al., 2013, p.45). Discriminant validity was thus verified.

The ELQ explained additional variance in the LMX and overall leadership effectiveness when effects of task-, relations- and change-orientated behaviours were controlled for. This finding

showed that ethical leadership can also result in high levels of work unit efficiency (Yukl et al., 2013, p.45), thus providing predictive validity.

The ELQ adds value in that the developers focussed on ethical leadership behaviours that are not contaminated by leadership behaviours which are unrelated to ethical leadership, such as task-, relations-, and change-orientated behaviours. It therefore provides a succinct list of pure ethical leader behaviours.

The researcher wishes to point out that while the ELQ provides clarity on what ethical behaviour is, through some items which clearly measure behaviours such as fairness, honesty and integrity, it still falls into ethical relativism with other statements where overarching words like ethical, moral values, and ethical values are used. The behaviour that underpins these words is not clear.

The following statement is particularly problematic for the researcher:

- *Keeps his actions consistent with his stated values ('walks the talk')*

What if the leader's stated values were something that others may deem unethical, such as that he/she believed that women who have child-rearing responsibilities should not be promoted into management positions, because their primary focus should be their children and not their career? If the leader adheres to this stated value, then he/she 'walks his/her talk', but the underlying value is not necessarily ethical, because it is not fair, and fairness is an underlying principle of ethical leadership (Eisenbeiss, 2012).

The researcher therefore shares the opinion of Eisenbeiss (2012), that ethical values should be defined, lest they succumb to relativism.

Yukl et al.'s article discussing the ELQ was published one year (2013) after Eisenbeiss' article (2012). Yukl et al. made no reference to Eisenbeiss' research in their own research, implying that they were either not aware of it, or did not take it into consideration. The researcher thus suggests that the development of an ethical leadership scale that encompasses the most recent research on this topic, namely that of Giessner and Van Quaquebeke (2010), Eisenbeiss (2012) and Yukl et al. (2013), could further enhance efforts to clarify the construct of ethical leadership. The researcher will take cognisance of this latest research in her development of the proposed holistic value-based leadership scale.

2.5.6 Unique contribution to value-based leadership

Ethical leadership emphasises the importance of being a role model of ethical (normative) behaviour, of talking to stakeholders about ethical values and of holding stakeholders accountable for acting in an ethical way. The emphasis of ethical leadership is not so much on inspiring, empowering and holding stakeholders to account in general terms, but rather to specifically focus on ethical values. Thus, the vision used for inspiration is ethical, stakeholders are held to account regarding ethical behaviour and followers are empowered to think and act in ethical ways.

2.6 Analysis of Value-based Leader Behaviours

Having discussed the concepts of transformational, authentic, servant and ethical leadership in detail, the researcher now provides a list of behaviours per value-based leadership theory, as derived from the literature reviewed. See Table 2.14.

Table 2.14. *Value-based leader behaviours*

Behaviours	Transforma tional leadership	Servant leadership	Authentic leadership	Ethical leadership
1. Acts with integrity	X	X	X	X
2. Is a role model of ethical behaviour	X	X	X	X
3. Behaves in ways that engender trust and loyalty from followers	X	X	X	X
4. Is open to criticism	X	X	X	X
5. Considers the moral and ethical consequences of decisions.	X	X	X	X
6. Has a strong sense of purpose and emphasises the importance of this	X	X	X	X
7. Questions the appropriateness of the status quo before accepting it	X	X	X	X
8. Acts in the best interest of the group/organisation	X	X		X
9. Helps individuals to develop their potential	X	X		X
10. Is empathetic	X	X		X

11. Takes time to coach and mentor followers	X	X		X
12. Displays a tolerance for and encourages the acceptance of diversity	X	X		X
13. Is benevolent (caring, kind, compassionate)	X	X		X
14. Empowers followers to act autonomously	X	X		X
15. Is focused on others rather than him/herself	X	X		X
16. Encourages creative problem solving	X	X		X
17. Displays wisdom by bringing environmental awareness into decision making		X	X	X
18. Encourages collaborative decision-making and participation		X	X	X
19. Promotes self-regulation within self and others		X	X	X
20. Admits mistakes		X	X	X
21. Is prepared to make him/herself vulnerable		X	X	X
22. Is self-aware		X	X	X
23. Has the courage to do what is right in the face of adversity		X	X	X
24. Provides an ethical vision		X		X
25. Reacts positively to change and uncertainty	X			X
26. Provides followers with a compelling vision	X	X		
27. Creates an emotionally safe environment for his/her followers		X		X
28. Emphasises the importance of community development and corporate social responsibility		X		X
29. Promotes equality and fairness		X		X
30. Holds followers accountable for ethical behaviour		X		X

31. Makes decisions objectively		X	X
32. Makes time for self-development		X	X
33. Is confident and displays a sense of power	X		
34. Is optimistic about and engenders enthusiasm for the future	X		
35. Instils pride in others	X		
36. Displays a sense of calling to his/her leadership position and therefore subservience to a higher power		X	
37. Holds followers accountable for the performance they can control		X	
38. Is able to influence others with logical reasoning rather than charisma		X	
39. Does not bear grudges/forgives		X	
40. Develops an ethical strategy			X
41. Implements structures which support and build ethical culture			X
42. Influences all stakeholders to act ethically			X
43. Rewards ethical behaviour			X

The comparative analysis conducted above confirms the initial assumption that the four value-based leadership theories examined in the literature review show a definite overlap of several behaviours. At the same time, there are behaviours which are unique to at least three of the leadership theories, indicating that each theory adds additional and unique value to value-based leadership. The authentic leader behaviours reviewed in this study, appear to overlap with behaviours expressed in the other three value-based leadership styles. The overlap serves to augment those behaviours inherent to one or more of the other three leadership theories.

It is also clear from the analysis that ethical and servant leadership make the greatest contribution to, and share the greatest commonality of value-based leader behaviours.

2.7 Conceptualisation of Principled Leadership

The foregoing literature review and the behavioural analysis conducted above, enable the researcher to conceptualise Principled Leadership as an aggregate value-based leadership concept. The researcher has formulated six dimensions for Principled Leadership, shown in Table 2.15.

Table 2.15. *Dimensions of Principled Leadership*

<p>Internalised values: The leader's actions are based on a strong foundation of universally accepted moral principles (values). These principles include being committed to something greater than oneself, humility, integrity, honesty, transparency, self-discipline, trustworthiness and reliability. Such leaders are role models of behaviour based on these principles. They will 'walk their talk' and act in agreement with these values, even when faced with opposition.</p>
<p>Self-awareness: The leader is secure in his/her understanding of him/herself. This awareness is continually developed by seeking feedback from others and choosing to react positively to the feedback. Self-awareness leads to a good understanding of the leader's strengths and weaknesses, and of the impact that they have on others. The leader uses this understanding to exercise appropriate self-monitoring over his/her behaviour to interact effectively with others.</p>
<p>Principled Strategist: The leader acts from a deep-seated sense of purpose, even calling, that goes beyond his/her own interests. This sense of purpose drives the leader to develop and promote a vision and strategy for the organisation that is inspiring, meaningful and morally sound.</p>
<p>Other-centred: Rather than being focussed on his/her own agenda, the leader places a priority on mentoring and developing others and sees this as one of his/her primary responsibilities. He/she builds confidence and trust in team members by empowering them and by creating an environment which is fair and respectful. The leader recognises that team members have unique development needs, strengths and weaknesses, and therefore gives individual attention to team members.</p>
<p>Stewardship: Leaders regard themselves as stewards of the organisation. Therefore, they are responsible for the long-term success of the organisation. Success should be understood as organisational well-being in the bigger picture, in that it includes financial and operational success, ethical interaction with all stakeholders and the environment, as well as employee well-being. Stewardship includes taking accountability for organisational performance and holding others accountable for their performance. Ultimately, stewardship aims to ensure longevity of the organisation and to leave a positive legacy.</p>

Balanced Processing: Leaders recognise that critical thinking and problem solving are crucial for effective functioning in a diverse and ever changing world. The leader's thinking is marked by humility, courage, empathy and autonomy. Leaders encourage others to challenge the status quo, think critically about their own perspectives, to be open to alternative points of view, and to embrace uncertainty.

In developing the items to measure the six dimensions of Principled Leadership, the researcher attempted to focus on the following four points:

- 1) To provide clarity on the meaning of words such as 'ethical', 'moral', 'doing the right thing'. The purpose of this was twofold namely, a) to move away from the problem of ethical relativism and b) to assist with the understanding of the word. In South Africa, most of the population are not native English speakers, although the business language is English. One can therefore not assume that concepts such as these are understood equally by everybody.
- 2) To measure only one aspect of the dimension per item.
- 3) To ask throughout whether the behaviour assessed in the item is a characteristic of principled leadership, as opposed to general, 'good' leadership. In some cases, it may be both, but the behaviour tested should not be a behaviour that is unrelated to principled leadership.
- 4) To ensure that the behaviour can be observed by others.

A distinction is usually made between leadership and management. Leaders are usually regarded as those who provide vision, direction and strategy, while managers focus on the operational aspects of implementing the vision and strategy. This research is about leadership. However, in practice even if the superior is a leader and not a manager, it would be highly unusual for employees to refer to their superior as 'my leader'. To keep things practical, the researcher has therefore chosen to use the term 'my manager' throughout the items developed. Other researchers on leadership have done the same, using terms such as 'My manager' (Van Dierendonck & Nuijten, 2011, p.256) and 'My boss' (Yukl, 2013, p.46).

The items, the aspect of the dimension measured by each item, and the detail of how these items have been inferred from the literature, are provided in detail in the following section.

2.7.1 Internalised Values: definition and items

The definition of the dimension 'Internalised Values' and the items which operationalise this dimension are shown in Table 2.16:

Table 2.16. *Internalised Values: definition and items*

Internalised Values: The leader's actions are based on a strong foundation of universally accepted moral principles (values). These principles include being committed to something greater than oneself, humility, integrity, honesty, transparency, self-discipline, trustworthiness and reliability. Such leaders are role models of behaviour based on these principles. They will 'walk their talk' and act in agreement with these values, even when faced with opposition.

Items	Aspects of dimension assessed	Literary source of items
1. My manager's actions are consistent with commonly accepted moral principles (i.e. he/she is not greedy or selfish, is honest, has integrity, is trustworthy, transparent and reliable).	Integrity/congruence with values	<p>"My leader shows consistency between his/her beliefs and actions" (Neider & Schriesheim, 2011, p.1149).</p> <p>"Self-respect, but with humility, self-discipline, and acceptance of personal responsibility:</p> <ul style="list-style-type: none"> • To not exalt oneself or overindulge – to show humility and avoid gluttony, greed or other forms of selfishness or self-centredness • To act in accordance with one's conscience and to accept responsibility for one's behaviour" (Kinnier et al., 2000, p.9)

2. My manager has the courage to do what is right (i.e. be honest, transparent, trustworthy and reliable), even when there is pressure to do the opposite.	Integrity/resistance to pressure	<p>“Trustworthiness (including notions of honesty, integrity, transparency, reliability and loyalty)” (Schwartz, 2005, p.39)</p> <p>“Honesty and integrity (including consistency of actions with espoused values)” (Yukl, 2013, p.40).</p> <p>“My manager resists pressure on him/her to do things contrary to his/her beliefs” (Neider & Schriesheim, 2011, p.1149).</p> <p>“Refers to an internalised and integrated form of self-regulation that is guided by moral standards and values rather than by group, organisational or societal pressures” (Walumbwa et al., 2008, p.95).</p>
3. My manager regularly talks to us about the importance of doing the right thing (i.e. being honest, transparent, trustworthy and reliable) in our business dealings.	Congruence/role model	<p>“Discusses business ethics or values with employees” (Brown et al., 2005, p.125).</p>
4. My manager shows us how to behave ethically by being a role model of ethical behaviour (i.e. he/she is not greedy or self-centred, is honest, transparent, self-disciplined and reliable).	Congruence with values/role model	<p>“Sets an example of ethical behaviour in his decisions and actions” (Yukl et al., 2016, p.46).</p> <p>“rather than attempts to manipulate, abuse, and exploit others for personal gain” (Yukl et al., 2013, p.41).</p>

5. When making decisions, my manager takes the ethical consequences of the decision into consideration, i.e. decisions result in my manager or the business being regarded as honest and transparent.	Congruence with values	“Considers ethical implications of decisions” (Spangenberg & Theron, 2005, p.4). “Considers the moral and ethical consequences of decisions” (Hemsworth et al., 2013, p.857).
6. My manager delivers on what he/she promises.	Reliability/integrity	“Can be trusted to carry out promises and commitments” (Yukl et al., 2016, p.46).
7. My manager admits his/her mistakes to others.	Humility/transparency	“Is willing to admit mistakes when they are made” (Walumbwa et al., 2008, p.121).
8. My manager does not seek recognition or reward for things he/she does for others.	Humility	“My manager is not chasing recognition or rewards for the things he/she does for others” (Van Dierendonck & Nuijten, 2011, pp.251 -252).
9. My manager can be trusted to tell the truth.	Honesty	“Is honest and can be trusted to tell the truth” (Yukl et al., 2016, p.46).
10. My manager does not wrongfully take credit for work that was done by others.	Humility/honesty/integrity	“My manager is not chasing recognition or rewards for the things he/she does for others” (Van Dierendonck & Nuijten, 2011, pp.251 -252). “it is about retreating into the background and allowing the follower to be successful and take the credit” (Van Dierendonck & Nuijten, 2011, p.251).
11. My manager opposes the use of dishonest practices to increase performance.	Honesty/value congruence	“Opposes the use of unethical practices to increase performance” (Yukl et al., 2016, p.46).

12. My manager openly discusses with me, what is going on in the organisation.	Transparency	“My leader openly shares information with others” (Neider & Schriesheim, 2011, p.1149).
13. My manager has zero tolerance for dishonest business practices.	Congruence with values	“deals honestly with all stakeholders” (Spangenberg & Theron, 2005, p.4).

2.7.2 Self-awareness: definition and items

Table 2.17 provides the definition of the dimension ‘Self-awareness’, as well as the items which operationalise it.

Table 2.17. *Self-awareness: definition and items*

Self-awareness: The leader is secure in his/her understanding of him/herself. This awareness is continually developed by seeking feedback from others and choosing to react positively to the feedback. Self-awareness leads to a good understanding of the leader’s strengths and weaknesses, and of the impact these have on others. The leader uses this understanding to exercise appropriate self-monitoring over his/her behaviour to interact effectively with others.		
Items	Aspects of dimension assessed	Literary source of items
1. My manager displays a secure sense of who he/she is.	Self-acceptance	“Leaders have a secure sense of self” (Sendjaya et al., 2008, p.406).
2. My manager is not blind to his/her weaknesses.	Awareness of weakness	“My leader shows that he/she understands his/her strengths and weaknesses” (Neider & Schriesheim, 2011, p.1149).
3. My manager is aware of what his/her strengths are.	Awareness of strengths	“My leader shows that he/she understands his/her strengths and weaknesses” (Neider & Schriesheim, 2011, p.1149).

- | | | |
|---|-------------------------------|--|
| 4. My manager welcomes feedback on how his/her actions affect others. | Seeks feedback | “Seeks feedback to improve interactions with others” (Walumbwa et al., 2008, p.121). “Appreciates feedback and has good insight into his/her own ethical identity, capabilities and behaviour” (Spangenberg & Theron, 2005, p.4). |
| 5. My manager does not become defensive when criticised. | Reacts positively to feedback | “If people express criticism, my manager tries to learn from it” (Van Dierendonck & Nuijten, 2011, p.252).
“Their secure sense of self ... [is] marked by a lack of defensiveness when criticised” (Sendjaya et al., 2008, p.407). |
| 6. My manager is sensitive to how his/her behaviour affects others. | Aware of impact of actions | “My leader is clearly aware of the impact he/she has on others” (Neider & Schriesheim, 2011, p.1149).
“gaining insight into the self through exposure to others, and being cognizant of one’s impact on other people” (Walumbwa et al. 2008, p.59). |
| 7. My manager uses feedback about his/her behaviour to improve interaction with others. | Reacts positively to feedback | “Seeks feedback to improve interactions with others” (Walumbwa et al., 2008, p.121). “Appreciates feedback and has good insight into his/her own ethical identity, capabilities and behaviour” (Spangenberg & Theron, 2005, p.4). |

8. My manager practices appropriate self-control over his/her actions.	Aware of impact of actions	Balanced leader behaviours expressed in the “ability to restrain emotions and personal desires” (Eisenbeiss, 2012, p.797). Relational transparency promotes trust through the open sharing of one’s true thoughts and feelings while at the same time minimizing displays of inappropriate emotions (Walumbwa et al., 2008, p.28).
9. My manager is committed to improve the way he/she interacts with others.	Awareness of interaction	“Identifies challenging opportunities for self-development and is committed to continuous learning. Appreciates feedback and has good insight into his/her own ethical identity, capabilities and behaviour” (Spangenberg & Theron, 2005, p.4).
10. My manager thinks before he/she acts.	Self-monitoring	Balanced leader behaviours expressed in the “ability to restrain emotions and personal desires” (Eisenbeiss, 2012, p.797).

2.7.3 Principled Strategist: definition and items

The definition of the dimension 'Principled Strategist' and the items which operationalise this dimension are shown in Table 2.18:

Table 2.18. *Principled Strategist: definition and items*

Principled Strategist: The leader acts from a deep-seated sense of purpose, even calling, that goes beyond his/her own interests. This sense of purpose drives the leader to develop and promote a vision and strategy for the organisation that is inspiring, meaningful and morally sound.		
Items	Aspects of dimension assessed	Literary source of items
1. My manager leads with a sense of purpose (calling) which is greater than his/her own interests.	Calling	<p>“Commitment to something greater than oneself: To recognise the existence of and be committed to a Supreme Being, higher principle, transcendent purpose or meaning, to one’s existence” (Kinnier et al., 2000, p.9).</p> <p>“Servant leaders have a sense of calling and seek to make a difference in the lives of others” (Sendjaya et al., 2008, p.406).</p>
2. Through the organisation’s vision, my manager strives to make a positive difference in the lives of others.	Meaningfulness	<p>“Develops a collective ethical vision that inspires people and gives them a sense of purpose” (Spangenberg & Theron, 2005, p.4).</p> <p>Servant leaders have a sense of calling and seek to make a difference in the lives of others (Sendjaya et al., 2008, p.408).</p>

3. My manager ensures that the organisation's vision is morally sound.	Vision/value congruence	"Articulates an ethical vision for the future that provides direction" (Spangenberg & Theron, 2005, p.4).
4. My manager encourages me to dream big dreams about the positive role our organisation can play in society.	Inspiration	"This person encourages me to dream 'big dreams' about the organisation" (Barbuto & Wheeler, 2006, p.322).
5. My manager ensures that the strategy is not achieved by methods that are unethical (e.g. dishonest, harmful or unsafe, motivated by greed, benefitting only a few).	Moral soundness	"Defines strategic ethical issues clearly. Builds strategies and plans based on thorough problem analysis and broad-based fact-finding. Considers consequences of decisions" (Sangenberg & Theron, 2005, p.4).
6. My manager encourages me to find meaning in the work that I do.	Meaningfulness	"Servant leaders seek to restore wholeness and integration ... they seek to find and give meaning and purpose in and to life" (Sendjaya et al., 2008, p.408). "Develops a collective ethical vision that inspires people and gives them a sense of purpose" (Spangenberg & Theron, 2005, p.4).

2.7.4 Other-centred: definition and items

The definition of the dimension 'Other-centred' and the items which operationalise this dimension are shown in Table 2.19:

Table 2.19. *Other-centred: definition and items*

Other-centred: Rather than being focussed on his/her own agenda, the leader places a priority on mentoring and developing others and sees this as one of his/her primary responsibilities. He/she builds confidence and trust in team members by empowering them and by creating an environment which is fair and respectful. The leader recognises that team members have unique development needs, strengths and weaknesses and therefore gives individual attention to team members.

Items	Aspects of dimension assessed	Literary source of items
1. My manager allows me to learn from my mistakes.	Build confidence	Covenantal relationships allow “followers to experiment, grow and be creative without fear of criticism” (Sendjaya et al.,2008, p.407).
2. My manager helps me to develop myself further.	Development/individual attention	“My manager helps me to further develop myself” (Van Dierendonck & Nuijten, 2011, p.251).
3. My manager makes time to listen to my ideas and concerns.	Individual attention	Listening is demonstrated by the ability to hear and value the ideas of others (Barbuto & Wheeler, pp. 305 – 306).
4. My manager regularly provides me with constructive feedback.	Development/individual feedback	Leaders “support and respect their employees on an individual basis, giving them personal attention and providing them with regular feedback and follow-up” (Bodla & Nawaz, 2010, p.210).

5. My manager treats everyone with respect.	Respect	<p>“Considers the needs, feelings and dignity of others” (Spangenberg & Theron, 2005, p.4).</p> <p>“Humane orientation means to treat others with dignity and respect and to see them as ends, not as means” (Eisenbeiss, 2012, p.795).</p>
6. My manager assists me to overcome work-related difficulties.	Empowerment	<p>This is based on the concepts of altruistic calling and emotional healing (Barbuto & Wheeler, 2006) where leaders will go out of their way to assist followers and are skilled at enabling followers to deal with hardship, trauma and healing.</p>
7. My manager allows me to solve problems on my own instead of telling me what to do.	Empowerment	<p>“My manager enables me to solve problems myself instead of just telling me what to do” (Van Dierendonck & Nuijten, 2011, p.251).</p>
8. My manager helps me to build confidence in my abilities.	Build confidence	<p>“Raises the aspirations of followers and builds confidence in them to perform effectively and ethically” (Spangenberg & Theron, 2005, p.4).</p>
9. My manager is fair when assigning tasks to team members.	Fair environment	<p>“Servant leaders treat all people with radical equality” (Sendjaya, 2008, p.407).</p> <p>“Justice orientation refers to making fair and consistent decisions and not discriminating against others” (Eisenbeiss, 2012, p.796).</p>

10. My manager provides opportunities for me to learn new skills, when possible.	Development	“My manager offers me abundant opportunities to learn new skills” (Van Dierendonck & Nuijten, 2011, p.251). Growth is characterised by the ability of the leader to identify others’ needs and provide developmental opportunities (Barbuto & Wheeler, 2006, p.308).
11. My manager cares about me.	Trust	Covenantal relationships are marked by a deep personal bond, shared values, mutual trust, open-ended commitment and a concern for the other (Sendjaya, 2008, p.407). “behaviour that shows kindness, compassion, and concern for the needs and feelings of others” (Yukl, 2013, p.40).

2.7.5 Stewardship: definition and items

Table 2.20 provides the definition of the dimension 'Stewardship' as well as the items which operationalise this dimension.

Table 2.20. *Stewardship: definition and items*

Stewardship: Leaders regard themselves as stewards of the organisation. Therefore, they are responsible for the long-term success of the organisation. Success should be understood as organisational well-being in the bigger picture in that it includes financial and operational success, ethical interaction with all stakeholders and the environment, as well as employee well-being. Stewardship includes taking accountability for organisational performance and holding others accountable for their performance. Ultimately, the aim of stewardship is to ensure longevity of the organisation and to leave a positive legacy.

Items	Aspects of dimension assessed	Literary source of items from value-based scales, where applicable.
1. My manager takes responsibility when things in our team or the organisation go wrong.	Leader accountability	"The willingness to take responsibility for the larger institution and go for service instead of control and self-interest" (Van Dierendonck & Nuijten, 2011, p.251).
2. My manager creates a culture of accountability where each person is held responsible for his/her actions.	Accountability in others	"A servant leader needs to be a courageous steward who is able to hold people accountable for their own good" (Van Dierendonck & Nuijten, 2011, p.251).
3. My manager holds me accountable for achieving agreed goals.	Accountable for performance	"My manager holds me responsible for the work I carry out" (Van Dierendonck & Nuijten, 2011, p.256).

4. My manager holds external stakeholders (e.g. external service providers) accountable for honest and transparent practices.	Accountability – external, ethical practice	<p>“I am held accountable for my performance by my manager” (Van Dierendonck & Nuijten, 2011, p.256).</p> <p>Influences external stakeholders by “maintaining productive relationships with external stakeholders and building the ethical image of the organisation” (Spangenberg & Theron, 2005, p.4). “Accountability: holding people accountable for performance they can control ... It ensures that people know what is expected of them, which is beneficial for both employees and the organisation” (Van Dierendonck & Nuijten, 2011, p.251).</p>
5. My manager holds external stakeholders accountable for service delivery.	Accountability – external	<p>Influences external stakeholders by “maintaining productive relationships with external stakeholders and building the ethical image of the organisation” (Spangenberg & Theron, 2005, p.4). “Accountability: holding people accountable for performance they can control ... It ensures that people know what is expected of them, which is beneficial for both employees and the organisation” (Van Dierendonck & Nuijten, 2011, p.251).</p>

6. My manager plans for the organisation to positively impact society.	Accountable to society/community/ethical practice	Believing that organisations have a legacy to uphold and must purposefully contribute to society (Barbuto & Wheeler, 2006, p.308).
7. My manager plans for the organisation to have minimal negative impact on the environment.	Accountable to environment	Taking responsibility and showing “concern for the welfare of society and the environment” (Eisenbeiss, 2012, p.796).
8. My manager regularly communicates organisational results (financial, service delivery, ethical initiatives, etc.) to employees.	Culture of accountability	The responsibility and sustainability orientation may be “expressed by a long-term focus on organisational performance [and] reflection upon the impact of decisions on society and the environment” (Eisenbeiss, 2012, p.796). “Reviews the outcomes of unit, team and employee ethical initiatives. Provides specific feedback to followers to help them assess their own contribution to these initiatives” (Spangenberg & Theron, 2005, p.4).
9. My manager measures success not only by the results achieved but also by whether the results were achieved responsibly and ethically.	Ethical performance/accountability	“Defines success not just by results but also by the way they are obtained” (Brown et al., 2005, p.125).
10. My manager is concerned about the morale of team members and acts to improve morale if it is low.	Organisational well-being	The humane orientation means the leader has compassion and concern for the well-being of the people (Eisenbeiss, 2012, p.795).

11. My manager takes the physical safety of team members at work seriously.	Organisational well-being	The humane orientation means the leader has compassion and concern for the well-being of the people (Eisenbeiss, 2012, p.795).
12. My manager encourages us to live healthy and balanced lives.	Organisational well-being	The humane orientation means the leader has compassion and concern for the well-being of the people. Based on the moderation orientation, the leader is “careful and wise [in his/her] attempts to find balance between organisational objectives and stakeholder interests” (Eisenbeiss, 2012, pp.795 - 797).

2.7.6 Balanced Processing

Creative and critical thinking is included in the dimensions of several value-based leadership scales (Antonakis et al., 2003; Bodla & Nawaz, 2010; Hemsworth et al., 2013; Spangenberg & Theron, 2005; Walumbwa et al., 2008). To expand the understanding of the importance of critical thinking for the value based leader, the researcher includes here a brief review from a source not directly related to value-based leadership, but nonetheless useful for the clarification of this point.

Paul and Edler (2007, p.4) define critical thinking as the “the art of analysing and evaluating thinking with a view to improving it”. They state that one of the benefits of critical thinking is that it helps people to overcome their egocentric thinking, which does not consider the rights and needs of others. Egocentric thinking is unable to see past the limitations of its own viewpoint and is not able to appreciate that others may have a valid, albeit, different point of view (Paul & Edler, 2007, p.9). These ideas of critical thinking link directly to principled leader behaviour which incorporates humility, openness, serving the other and mutual respect.

Traits of critical thinking listed by Paul & Edler (2007, p.16 – 17) which are pertinent to this study are listed in Table 2.21:

Table 2.21. *Traits of critical thinking*

Trait	Trait definition
Intellectual Autonomy	Through critical thinking one strives to learn to understand one's own thinking process. It requires a commitment to use reason and evidence to analyse and evaluate one's thoughts, "to question when it is rational to question, to believe when it is rational to believe, and to conform when it is rational to conform" (Paul & Edler, 2007, p.17). Intellectual autonomy stands in opposition to intellectual conformity (Paul & Edler, 2007, p.17).
Intellectual Humility	Intellectual humility is the opposite of intellectual arrogance. A person displaying intellectual humility does not claim to know more than he/she actually knows. "It implies the lack of intellectual pretentiousness, boastfulness, or conceit, combined with insight into the logical foundations, or lack of such foundations, of one's beliefs" (Paul & Edler, 2007, p.16).
Intellectual Courage	Intellectual courage is the opposite of intellectual cowardice. Having intellectual courage means one recognises that absurd or dangerous ideas are sometimes rational, and that deep-seated beliefs or ideas that we have, may sometimes be false. People with intellectual courage do not passively and uncritically accept what they have learnt to be the truth, but rather apply critical thinking to determine what is true and correct (Paul & Edler, 2007, p.16).
Intellectual Empathy	Intellectual empathy requires one to consciously and imaginatively put oneself 'in the others' shoes' to sincerely seek to understand a situation from their point of view. This stands in opposition to intellectual narrowmindedness (Paul & Elder, 2007, p.16).

The dimension 'Balanced Processing' and its underlying items are thus derived from the reviewed literature as shown in Table 2.22.

2.7.6.1 *Balanced Processing: definition and items*

The definition of the dimension 'Balanced Processing' and the items which operationalise this dimension are shown in Table 2.22:

Table 2.22. *Balanced Processing: definition and items*

Balanced Processing: Leaders recognise that critical thinking and problem solving are crucial for effective functioning in a diverse and ever changing world. The leader's thinking is marked by humility, courage, empathy and autonomy. Leaders encourage others to challenge the status quo, think critically about their own perspectives, be open to alternative points of view and to embrace uncertainty.		
Items	Aspects of dimension assessed	Literary source of items from value-based scales, where applicable.
1. My manager encourages me to challenge his/her ideas.	Critical thinking	"Solicits views that challenge their deeply held positions" (Walumbwa et al., 2008, p.121). "The ability to hear and value the ideas of others" (Barbuto & Wheeler, 2006, p.304).
2. My manager listens carefully to alternative perspectives before reaching conclusions.	Intellectual humility/courage/empathy	"Listens carefully to different points of view before coming to conclusions" (Walumbwa et al., 2008, p.121). "The ability to hear and value the ideas of others" (Barbuto & Wheeler, 2006, p.304).
3. My manager does not claim to know more than he/she actually knows.	Intellectual humility	"Intellectual humility depends on recognising that one should not claim

more than one actually knows" (Paul & Elder, 2007, p.16).

"Having a consciousness of the need to imaginatively put oneself in the place of others in order to genuinely understand them" (Paul & Elder, 2007, p.16).

"Re-examines critical assumptions for appropriateness" (Hemsworth et al., 2013, p.857).

"Analysing and evaluating beliefs on the basis of reason and evidence, to question when it is rational to question, to believe when it is rational to believe, and to conform when it is rational to conform" (Paul & Elder, 2007, p.17).

- | | |
|---|-------------------------------|
| 4. My manager makes an effort to understand my point of view from my perspective. | Intellectual empathy |
| 5. My manager has the courage to change a deeply held opinion when he/she recognises that he/she is wrong. | Intellectual courage |
| 6. My manager thinks through a matter and comes to his/her own conclusions, rather than simply conforming to what everyone else thinks. | Intellectual courage/autonomy |

2.8 Measurement Model

The dimensions of principled leadership discussed above are operationalised in the measurement model depicted in Figure 2.1.

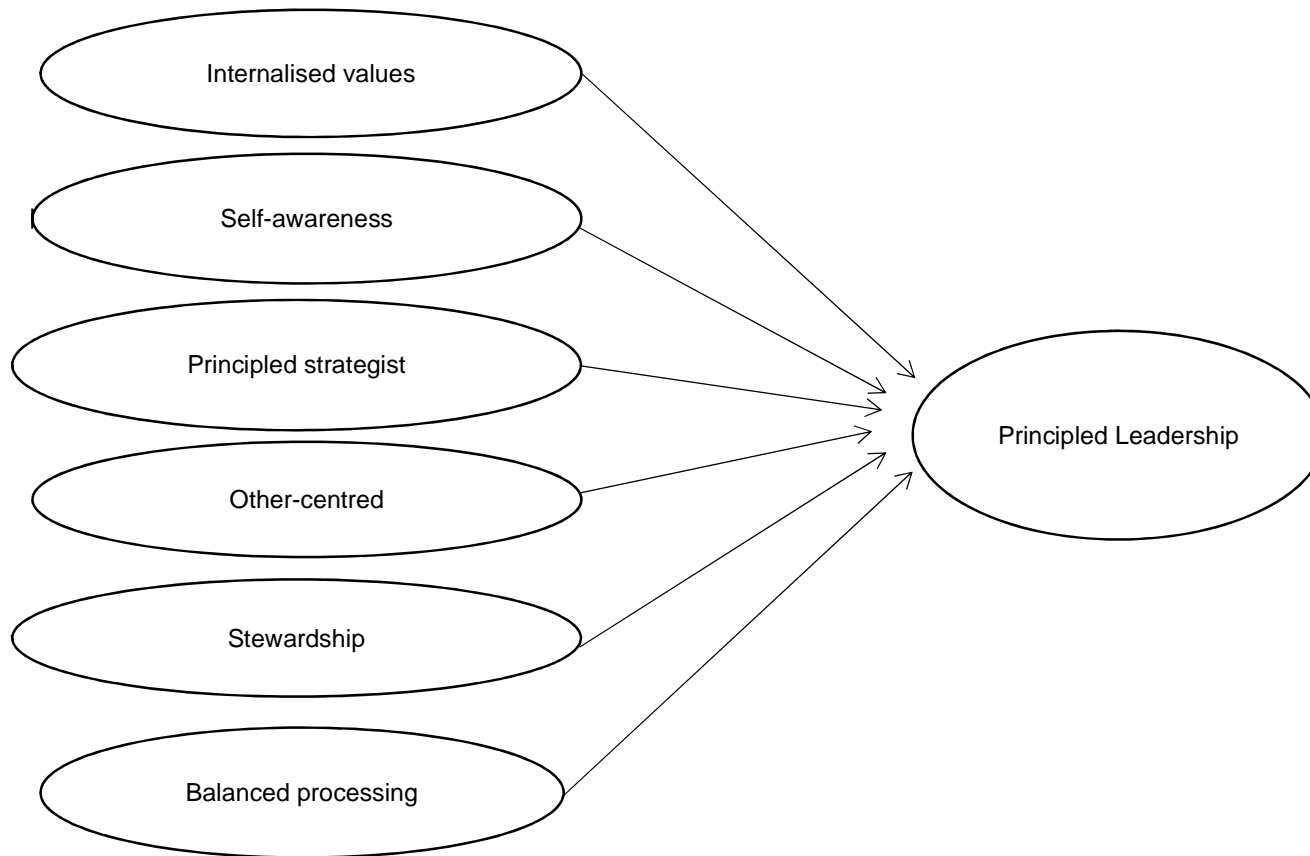


Figure 2.1. Principled Leadership Measurement Model

2.9 Antecedents and Outcomes of Principled Leadership

Adding predictive validity and practical application to this proposed study, enhances the value of the study. To do so, the researcher thus endeavours to answer the question: “So what, if a leader behaves in a principled manner, or not?”

In an attempt to answer the question, the researcher proposes that principled leadership forms part of a complex nomological network of latent variables. These latent variables form antecedents and outcomes of principled leadership, which have a direct impact on the effectiveness of organisations. A discussion of the proposed antecedent (i.e. moral intelligence) and outcomes (i.e. trust in leaders and OCB) follows.

2.9.1 Moral Intelligence

Philosophers and theologians as far back as Plato, Aristoteles and Augustine have debated issues of morality and human-kind (Hass, 1998; Narvaez, 2010). Moral intelligence as a concept has, however, entered the intelligence arena only relatively recently, with literature dating from the late 1990s to the present. The concept thus requires some discussion. Research on the topic primarily focuses on 1) the origins of moral behaviour, 2) whether the definition of moral behaviour is culture specific, 3) what exactly defines moral intelligence, and 4) what the benefits of moral intelligence are to individuals, organisations and society.

2.9.1.1 Definition of moral intelligence

The most widely used definition of moral intelligence in the literature is the one coined by Lennick and Kiel (2008): “Moral intelligence is the mental capacity to determine how the universal human principles should be applied to our values, goals, and actions” (Lennick & Kiel, 2008, p.7). The universal human principles are also called the “golden rule” by Lennick and Kiel (2008, p.7). This golden rule refers to doing unto others as you would have them do unto you (see also Kinnier et al., 2000, in Chapter 1).

Lennick and Kiel (2008, p.7) expand their definition of moral intelligence to include the four principles described in Table 2.23:

Table 2.23. *Moral intelligence principles*

Integrity	Integrity is displayed when people act in line with their principles and beliefs. Integrity is the trademark of a morally intelligent person. Those who lack integrity therefore lack moral intelligence.
Responsibility	A morally intelligent person is willing to take responsibility for his/her actions as well as the consequence of those actions.
Compassion	Respect for others is communicated through compassion. Being compassionate towards others also creates a climate of reciprocity, where compassion from others can be expected when needed.
Forgiveness	A tolerance for the mistakes of others and an awareness of one's own fallibility are communicated through forgiveness. It leads to flexibility and the ability to engage with people in ways that promotes mutual good.

2.9.1.2 The origins of moral intelligence

When exploring morality, the question arises, as to why some people behave morally and others do not. In Plato's opinion, humans were viewed as "a mind-spirit caged in a body wracked by passions" (Narvaez, 2010, p.78). The development of the ability to reason brought about morality, which in turn controlled the wayward emotions of humankind (Narvaez, 2010, p.78). By implication then, those who have developed a greater ability to reason, are more likely to behave morally than those who haven't.

Plato's pupil, Aristotle, believed that humans are naturally orientated toward the good and toward excellence. Furthermore, he alleged that humans "possess the emotional and rational capacities necessary to attain full moral excellence" (Dow, 1998, p. 7). The morally excellent person will use reason to choose to act in ways which are consistent with his/her purpose. Choosing well requires "intellectual excellence and unity among desires" (Dow, 1998, p.7). Aristotle takes the view that moral excellence can be developed through proper guidance by society and family (Dow, 1998, p.7). Proper guidance includes training of the intellect and habits to direct the impulses of the child towards moral excellence (Dow, 1998, ii – iii).

The theologian, Augustine, who's thinking was influenced by Neoplatonism (Wogaman, 2011, p.54), ascribed immoral behaviour to the free will, given by God to mankind. He argued that essentially, man desires happiness and peace. However, when his will is directed towards selfish desires instead of towards God, he will act immorally (Wogaman, 2011, p.55). To

counteract this inherent selfishness, morality must be developed through training of good habits via the painstaking process of punishment and reward (Narvaez, 2010, p.78).

Similarly, Confucius in China, and Buddha in India, held the view that people within themselves want to be just, self-controlled, and temperate as this is critical for their well-being and happiness (Hass, 1998, p.5).

The views of above philosophers/theologians still influence “approaches to parenting, education, and moral development theory” (Narvaez, 2010, p.78) today. The usefulness and importance of moral/ethical training cannot be negated, as also discussed in Chapter 1. However, empirical science has begun to prove that these dualistic views which propose that the mind and body, and reason and emotion are separate from one another, can no longer be regarded as true (Narvaez, 2010, p.78). A discussion of empirical scientific findings of the origin of morality thus follows.

2.9.1.3 Moral intelligence in infants and children

Psychologists studying new-born behaviour have found that infants will cry in response to the distress created by the crying of another infant. This response is termed “neonate responsive crying” (Lennick & Kiel, 2008, p.21). To rule out the possibility that the new-born cries because of the noise created by crying, they subjected new-borns to a recording of their own crying. This did not induce crying in the new-born. Psychologists thus believe that neonate responsive crying is the first sign that humans have an innate ability to feel empathy (Lennick & Kiel, 2008, p.22). It proves that we have an inborn capacity to appreciate that others exist independently of ourselves and that others have their own needs to which we can respond (Lennick & Kiel, 2008, p.22).

Additional studies regarding the behaviour of toddlers showed that by the age of two, children are able to comfort others and express sympathy. This is often shown by actions such as patting, or offering a security blanket or toy to someone who is crying (Hass, 1998, p.24; Lennick & Kiel, 2008, p.23). Furthermore, children at this age begin to show an understanding of justice, responsibility and blame. They also start testing the boundaries by behaving negatively. Negative behaviour is important to moral learning, because without it, children would not be able to distinguish right from wrong (Lennick & Kiel, 2008, p.24).

2.9.1.4 Moral development through nurturing

Modern psychology and ancient philosophy agree when it comes to the necessity of nurturing a moral spirit in children. In literature, the innate ability to be moral is compared to the innate ability to speak (Lennick & Kiel, 2008, p.22). We do not emerge from the womb speaking our mother-tongue fluently. As we develop, we learn to speak through the nurturing of those around us. The same applies to morality. We are hard-wired to act morally however, to develop into moral adults, we need the correct nurturing (Lennick & Kiel, 2008, p.22).

Cognitive, emotional and moral development is influenced by experiences of children in their formative years. Experiences that strongly influence this development include breastfeeding, “nearly constant touch in the first years of life, prompt response to fusses and crying, multi-age play groups, and multiple adult caregivers” (Narvaez, 2010, p.79). This type of responsive parenting is related to vagal nerve establishment and tone. The vagal nerve is part of the parasympathetic nervous system which is related to several body functions, including moral functioning and the ability to feel compassion (Donzella, Gunnar, Krueger & Alwin; Eisenberg & Eggum; Propper et al.; Stam, Akkermans, & Wiegant, cited in Narvaez, 2010, p.79). Non-responsive parenting results in poor vagal tone and lack of compassion (Calkins, Smith, Gill & Johnson; Porter, cited in Narvaez, 2010, p.79).

Lennick and Kiel (2008, p.24) state that parents need not be perfect to produce moral offspring, they merely need to be 'good enough' in that they treat their children well most of the time, by being consistently affectionate and dependable. This kind of support allows the morally hard-wired new-born to develop into an adult who is morally competent (Lennick & Kiel, 2008, p.25).

2.9.1.5 Moral brain-functioning

Research showed that the brains of two-year-olds, who had 'good-enough' parenting, had a normally developed limbic system. However, the cortical and subcortical brain areas of children who are abused or are subjected to poor parenting, are 20 to 30 percent smaller than normal. The brain 'wiring' of these children is also less dense than that of children with 'good-enough' parents. This lack of brain organisation prevents these children from connecting strongly with others. The lack of connection with others, leads to unrealised empathy and therefore impaired morality (Bruce & Pollard cited in Lennick & Kiel, 2008, p.26).

In other studies, the effect of injury to the prefrontal cortex in adults and infants was explored. Results indicated that adults who had normal moral functioning before the injury, were not

able to distinguish between right and wrong, and make moral choices after the injury. Infants who sustained this injury were never able to learn moral behaviour, even though their IQ was normal (Anderson, Bechara, Damasio, Tranel & Damasio cited in Lennick & Kiel, 2008, p.27).

Furthermore, studies using functional magnetic resonance imaging (fMRI), have shown that when “viewing pictures with moral content (such as physical assaults, poor children abandoned in streets, war scenes) distinct areas of the brain were activated, that were not activated by any other types of pictures, including those with strong emotional content” (Sala, cited in Lennick & Kiel, 2008, p.29).

The above physical and empirical evidence leads to the conclusion that humans have an innate propensity to be moral. Nurturing of this morality, as suggested by the ancient philosophers and theologians, is however necessary for humans to function effectively in terms of their morality.

2.9.1.6 Benefits of moral intelligence

The most defining benefit of developing moral intelligence is that it is viewed as the “central intelligence”. As such, it directs our other forms of intelligence to do something purposeful with our lives (Beheshtifar, Esmaeli, & Moghadam, 2011, p.9). “Without moral intelligence, we wouldn’t know why we do what we do, or even what difference our existence makes in the great cosmic scheme of things” (Lennick and Kiel cited in Beheshtifar et al., 2011, p.9).

Furthermore, moral intelligence provides an anchor for other intelligences like emotional intelligence. While certain emotional intelligence skills, like being influential and charismatic may be well developed, moral intelligence grounds these skills in constructive principles, rather than allowing them to be used in possible destructive ways (Lennick & Kiel, 2008, p.10).

2.9.1.7 The relationship between moral intelligence and principled leadership

The literature advocates a strong association between intelligence (IQ) and leadership effectiveness. IQ alone however, does not guarantee the success of a leader. It appears that moral intelligence, rather than IQ alone is the distinguishing factor in leading organisations effectively (Beheshtifar et al., 2011).

In today’s world of work, leaders will inevitably be faced with moral and ethical choices and the more adept they are at handling these, the more successful they will be (Clarken;

McGregor; Rahimi cited in Beheshtifar et al., 2011, p.10). “In organisations, moral intelligence involves a combination of knowledge, desire and willpower. It involves the way we think, feel and act” (Clarcken, cited in Beheshtifar et al., 2011, p.9). As an ‘über-intelligence’, moral intelligence thus allows the leader to direct his/her other intelligences, those that make him/her think, feel and act in a way that ensures that the right thing is done. Therefore, morally intelligent leaders have an edge on those who have an underdeveloped inner moral compass (McGregor, cited in Beheshtifar et al., 2011, p.10).

A mark of principled leaders is that they have internalised the universal moral values, which Lennick and Kiel (2008, p.7) sum up as the golden rule of “do unto others as you would have them do unto you”. Such leaders base their decision making and actions on these internalised, golden rule values, even when faced with opposition. This shows them to have the integrity that forms part of moral intelligence. Furthermore, principled leaders have a strong sense of responsibility, because they regard themselves as stewards of the organisation who must see to its longevity and sustainability. This longevity and sustainability are supported by a strategy for the organisation that is inspiring, meaningful and morally sound. Lastly, the behaviour of principled leaders is infused with compassion and forgiveness. Compassion is displayed in ‘other-centred’ and ‘balanced-processing’ behaviours where the leader takes a keen interest in understanding the individual in his/her team, attending to their development needs and seeing things from their perspective. Humility is a behaviour that is underpinned by forgiveness. The awareness that we are all fallible and in need of forgiveness from others and ourselves, breeds an attitude of humility.

It follows that moral intelligence and principled leader behaviour are closely linked. The researcher ventures to propose that a leader cannot be principled without also being morally intelligent. Considering this, the researcher postulated the following:

Research hypothesis: Moral intelligence has a significantly positive influence on principled leader behaviour.

2.9.2 Trust in the Leader

The behaviour of a leader can influence the level of trust that followers have in the leader (Engelbrecht, Heine, & Mahembe, 2014; Joseph & Winston, 2005). Trust is a multidimensional construct encompassing among others, interpersonal trust, organisational trust, inter-organisational trust, societal trust, political trust and trust between superiors and subordinates (Joseph & Winston, 2005, p.7). This research is focussed on leader behaviour and how that

influences subordinates. The last-mentioned trust construct is thus the one that will be measured here.

Trust is defined as:

The willingness of a party to be vulnerable to the actions of another party based on the expectation that the other party will perform a particular action important to the trustor, irrespective of the ability to monitor or control the other party. This definition of trust is applicable to a relationship with another identifiable party who is perceived to act and react with volition toward the trustor (Mayer et al., cited in Joseph & Winston, 2005, p.7).

In the context of a leader and follower relationship, trusting a leader means being “willing to be vulnerable to the leader’s action [and] confident that [one’s] rights and interests will not be abused” (Hassan & Ahmed, 2011, p.165).

Because leaders are in a position where they make decisions and take actions which directly affect followers, trust in the leader becomes important (Dirks & Ferrin, 2002). When followers perceive their leader to be capable, benevolent and to have integrity, they will be more willing to reciprocate with desirable behaviours (Konovsky & Pugh; Mayer et al., cited in Dirks & Ferrin, 2002, p.613). In contrast, when the leader is perceived not to be trustworthy, followers will divert energy to protecting themselves, instead of focussing on their work performance (Mayer & Gavin, cited in Dirks & Ferrin, 2002, p.613). The extent to which employees will believe the accuracy of information received from leaders is also affected by trust. When the trust relationship is low, because the leader is perceived to be dishonest and to lack integrity, employees will perceive themselves to be at risk and will be unlikely to commit to goals set by the leader (Dirks & Ferrin, 2002, p.614).

As per Dirks and Ferrin (2002, p.614), trust is established through inferences which the follower makes about the nature of their relationship with the leader, based on the actions and character of the leader.

As principled leadership is a holistic construct, comprising transformational, servant, authentic, and ethical leadership, it follows that for each of the four leadership styles evidence must be sought regarding the type of behaviour in that leads the follower to make the inference that the leader is trustworthy. A discussion of this evidence follows.

2.9.2.1 Trust and transformational Leadership

Transformational leaders build relationships with followers through individualised concern. This involves actions such as coaching the followers, and treating them as individuals who have their own needs, abilities, aspirations and strengths that need development (Hemsworth et al., 2013, p.857). It is specifically this individualised concern shown by the leader, which helps to build strong emotional bonds with followers, and in turn it fosters a trust relationship between leader and follower (Jung and Avolio, cited in Dirks & Ferrin, 2002, p.614; Avolio, Bass & Jung; Bass & Avolio; Wech, cited in Engelbrecht & Chamberlain, 2005, p.5).

This is also postulated by Krafft, Engelbrecht and Theron (2004). They state that transformational leaders diagnose the needs and capacities of individuals so that they can attend to them. Trust is built through the leader's concerted efforts to "provide followers with direction, attention, structure, advice and feedback" (Krafft et al., 2004, p.11). According to Krafft et al. (2004, p.11), it is necessary for transformational leaders to instil trust in followers, so that followers will be committed to the strategic vision proposed by the leader. This corroborates Dirks and Ferrin's (2002) view that a trust relationship is necessary between leader and employee, if employees are to commit to the goals set by the leader.

In the Krafft et al. (2004) study, no evidence could be found to support the hypothesis that transformational leadership has a significantly positive effect on interpersonal trust (Krafft, et al., 2004, p.11 and 16). Similar evidence came to light in a study conducted by Engelbrecht and Chamberlain in 2005, where the relationship between transformational leadership and trust was insignificant (Engelbrecht & Chamberlain, 2005, p.10). Both these are South African studies.

These results are in contrast with results obtained by other researchers such as Den Hartog, Schippers and Koopman (2002), and Zaharia and Hutu (2016), who found significant positive relationships between transformational leadership and trust. Engelbrecht and Chamberlain ascribed the lack of relationship between trust and transformational leadership to various aspects influencing relationships between employers and employees in South Africa, such as a volatile economic climate, affirmative action, downsizing, mergers, outsourcing and unemployment (Engelbrecht & Chamberlain, 2005, p.10).

In their study, Den Hartog et al. found that transformational leadership had a stronger correlation with trust in the leader, than transactional leadership (2002, p.33). The dimensions of transformational leadership relating to trust in the leader that were examined in this study,

were “charisma, vision, intellectual stimulation and individualised consideration” (Den Hartog et al., 2002, p.31). Significant correlations ($p \leq .01$) were as follows:

- Trust in leader and charisma: $r = .79$
- Trust in leader and individualised consideration: $r = .69$
- Trust in leader and vision: $r = .55$
- Trust in leader and intellectual stimulation: $r = .48$

Charisma (which is referred to as Idealised Influence in other versions of transformational leadership dimensions) includes the leader’s ability, based on moral principles, to instil in followers, feelings of trust, respect and loyalty towards the leader (Bass & Avolio, cited in Hemsworth et al., 2013, p.854). It goes to reason then that the correlation between charisma and trust in the leader would be high. The above results also confirm the findings of Dirks and Ferrin (2002) that individualised consideration has an important role to play in building trust in subordinates.

Zaharia and Hutu (2016) focussed on four aspects of leadership to determine how they affect trust in the leader. They examined the effect of 1) leader fairness, which is a component of ethical leadership, 2) genuine concern, which focuses on the transformational leadership aspects of individualised consideration, 3) goal-orientated leadership, and 4) inspirational leadership, which includes notions of transformational leadership’s inspirational motivation (Zaharia & Hutu, 2016, p.15 – 17). Correlations between trust in the leader and the aforementioned dimensions, gave the following significant ($p \leq 0.05$) results:

- Trust in leader and fairness: $r = .443$
- Trust in leader and inspirational leadership: $r = .483$
- Trust in leader and genuine concern: $r = .598$
- Trust in leader and goal-oriented leadership: $r = .606$

These findings again support the importance of giving individual attention to, and being concerned for followers, in building strong trust relationships between leader and follower. Goal-orientated leadership involves the setting of goals for subordinates. Employees are likely to be more conscientious and perform better when the supervisors set “clear goals, and defined roles, responsibilities and priorities” (Colbert and Witt, cited in Zaharia & Hutu, 2016, p.16). Goal-orientated leadership has some links to the principled leadership dimension ‘Stewardship’, where the importance of holding followers accountable for achieving agreed goals is measured.

2.9.2.2 Trust and authentic Leadership

An authentic leader is described as a leader who is “genuine, reliable, trustworthy, real and veritable” (Luthans & Avolio, cited in Hassan & Ahmed, 2011, p.165). Hassan and Ahmed (2011) cited studies by Gardner, Chan, Hughes & Bailey; Hughes; and Norman, which all proved that “relational transparency, authentic action, balanced processing, and self-awareness are key components of authentic leadership and are significant predictors of trust in the leader” (Hassan & Ahmed, 2011, p.168).

Relational transparency promotes trust, in that leaders openly share information and express their true thoughts and feelings about issues (Walumbwa et al., 2008, p.95). Self-awareness promotes honesty about their own weaknesses and strengths within the leader, and makes them aware of how their behaviour affects others (Walumbwa et al., 2008, p.95). This honesty leads to greater trust. Balanced processing requires a leader to seek and hear the opinions of others, and to objectively analyse information which may challenge their deep-seated ideas (Walumbwa et al, 2008, p.95). When leaders can see something from another’s point of view and can admit that they may be wrong, trust is built.

In their research, Hassan and Ahmed (2011) proposed that authentic leadership contributes positively to interpersonal trust, which in turn, contributes positively to employee work engagement. The ALQ of Walumbwa et al., (2008) was used to measure authentic leadership and the Interpersonal Trust Scales to measure trust in the leader (Hassan & Ahmed, 2011, p.166). The correlation between authentic leadership and interpersonal trust was significantly positive and high at .80, $p < .01$ (Hassan & Ahmed, 2011, p.167).

In a South African study, Stander et al. (2015) researched the effect of authentic leadership on organisational trust, specifically in the health care sector. A focus of the current research is to establish the relationship between principled leadership and trust in the leader. Organisational trust and trust in the leader are not the same constructs. Nonetheless, trust in the organisation is largely dependent on the role that the leaders play in their organisations, and therefore it is not entirely separable from the behaviour of the leader (Joseph & Winston, 2005, p.8). Martinez and Dorfman (cited in Joseph & Winston, 2005, p.8) identified six essential aspects of the role of leaders in organisations, which lead to trust in the organisation. One of these factors is establishing “relationships characterised by confidence, trust and reliance” (Joseph & Winston, 2005, p.8). Cufaude (cited in Joseph & Winston, 2005, p.8) listed several other factors which are associated with organisational trust, but which are dependent on leader behaviour:

- *The depth and quality of interpersonal relationships*
- *Frequency, timelines and forthrightness of communication*
- *Direction and vision*
- *Honouring promises and commitments*

It follows, that the degree of trust which exists in an organisation, depends more heavily on the behaviour of the leaders than on the behaviour of anyone else (Offerman, cited in Joseph & Winston, 2005, p.8).

Stander et al. (2015, p.4) hypothesised that there would be a positive correlation between authentic leadership and trust in the organisation. They used the ALI of Neider and Schriesheim (2011) to conduct this research. The hypothesis proved valid in that the correlation between authentic leadership and trust in the organisation was .68, $p < .01$ (Stander et al., 2015, p.8).

2.9.2.3 Trust and servant Leadership

Greenleaf postulated that leadership legitimacy begins with trust and that the most solid ground on which to build trust is people's perception that their institutions are serving them (Greenleaf, cited in Joseph & Winston, 2005, p.11). Behaviours that lead to trusting a servant leader include the leader's insight, empathy and complete acceptance of followers, as well as the example they set for followers. In a community marked by service and support for one another, high levels of trust and respect are present (Greenleaf, cited in Joseph & Winston, 2005, p.11).

Reference will be made here to three studies in which the relationship between trust and servant leadership was explored. Joseph and Winston (2005) explored the relationship between servant leadership, trust in the leader and trust in the organisation.

Joseph and Winston (2005) postulated that employees' perceptions that their organisational leaders are servant leaders, has a positive effect on trust in the leaders (Joseph & Winston, 2005, p.12). The Servant Organisation Leadership Assessment (Laub, cited in Joseph & Winston, 2005, p.13) was used to analyse servant leadership in this assessment. This scale has been used successfully to distinguish servant leadership from non-servant leadership in organisations (Joseph & Winston, 2005, p.13). The Organisational Trust Inventory (Nyhan & Marlowe, cited in Joseph & Winston, 2005, p.13) was used to measure trust in the leader. The correlation between the perception that participants were led by a servant leader, and trust in

the leader, was moderately positive at 0.64, providing support for the abovementioned hypothesis (Joseph & Winston, 2005, p.12).

The same hypothesis, namely that servant leadership has a positive effect on employees' trust in the leader, was tested in a South African study conducted by Chinomona, Mashiloane and Pooe (2013). This study used adaptations of a servant leadership measure designed by Erhart (cited in Chinomona et al., 2013, p.408) to measure servant leadership, and six items adapted from Treadway et al. and Mayer et al. (cited in Chinomona et al., 2013, p.408), to measure trust in the leader. The study resulted in a high positive correlation of .805 between servant leadership and trust in the leader (Chinomona et al., 2013, p.410).

Miao, Newman, Schwarz and Xu (2013) conducted a study in the Chinese public sector in which they proposed that trust is a mediator between servant leadership and affective and normative commitment. This study proposed two forms of trust in the leader. The first, cognitive trust, is related to the leader's competence, dependability and reliability. The second, affective trust, relates to views about the leader which develop between leader and subordinate, because of the emotional ties that form as they engage with each other (Wang et al., cited in Miao et al., 2013, p.732). These views include the belief that the leader genuinely cares for the welfare of the subordinates and acts with their interests at heart (Yang & Mossholder, cited in Miao et al., 2013, p.732).

In Miao et al.'s research servant leadership was also measured using Ehrhart's scale (Ehrhart, cited in Miao et al., 2013, p.733). McAllister's trust scales, which measure affective and cognitive trust, were used to measure trust in the leader. The correlation between servant leadership and affective trust was strongest, with a strong positive correlation of .87, $p < .01$. The correlation between servant leadership and cognitive trust was also a strong, positive one of .79, $p < .01$ (Miao et al., 2013, pp.736 – 737).

2.9.2.4 Trust and ethical leadership

Just like transformational, servant and authentic leaders, ethical leaders are characterised by the care they show for the well-being of their followers. They are also characterised as showing fairness and respect towards their followers and as being role models of ethical behaviour. As role models, they speak to and show their followers what ethical behaviour is. The care leaders show towards followers, as well as the high consistency between leaders' moral intentions and their actions, leads to employees placing greater trust in their leaders (Engelbrecht et al., 2014).

Using a similar model to the one utilised by Miao et al. (2013), discussed in the previous section, Newman, Kiazad, Miao and Cooper (2014), explored the relationship between ethical leadership, trust and organisational citizenship behaviour (OCB). In this research, they proposed that cognitive trust precedes affective trust when building a trust relationship, in that it acts as an evaluator of the leader's competence, reliability and integrity. Once these characteristics have been established as trustworthy, and a solid foundation for higher quality social exchange relationship between leader and follower has been formed, affective trust comes into play (Newman et al., 2014, p.114). Furthermore, they proposed that affective trust leads to followers responding to the leader's ethical behaviour with OCB.

The relationship chain they thus proposed in their research was that ethical leadership relates positively to cognitive trust, which positively affects affective trust and affective trust in turn, positively affects OCB. Brown et al.'s ELS (2005) was used to measure ethical leadership and McAllister's (1995) two-dimensional model of trust was used to assess trust in the leader. The research yielded the following results ($p < .01$) (Newman et al., 2014, p119):

- The correlation between ethical leadership and cognitive trust was strong, positive with $r = .75$
- The correlation between ethical leadership and affective trust was moderate, positive with $r = .44$.
- The correlation between cognitive trust and affective trust was moderate, positive with $r = .33$.

The above led to the conclusion that when leaders are ethical, they are perceived to be capable and of good character (cognitive trust). Once cognitive trust is established, an emotional bond between the leader and follower is developed, leading to affective trust (Newman et al., 2014, p.120).

In a South African study, Engelbrecht et al. (2014, p.4) proposed that ethical leadership has a significantly positive effect on trust in the leader. Ethical leadership was tested by means of the Leadership of Ethics Scale, which was designed specifically for this study and comprised of items from various ethical leadership measures (Brown, Trevino & Harrison; Spangenberg & Theron; Yukl, Mahsud, Hassan & Prussia, cited in Engelbrecht et al., 2014). Trust in the leader was measured using 11 items from the Leader Trust Scale (Bews, cited in Engelbrecht et al., 2014) and two items from the Workplace Trust Survey (Ferres, Connell & Travaglione, cited in Engelbrecht et al., 2014, pp.4 – 5).

The research resulted in a strong, positive correlation of 0.89 ($p < 0.05$) between ethical leadership and trust (Engelbrecht et al., 2014, p.7). This confirmed the positive relationship between ethical leadership and trust in a South African context.

2.9.2.5 *The relationship between principled leadership and trust in the leader*

The above discussion indicates that there is a significantly positive relationship between all four value-based leadership theories and trust in the leader. Although a direct positive relationship between transformational leadership and trust in the leader could not be proved in the South African context, it was successfully proven in other contexts. A valid precedent for this argument does therefore exist.

Certain behaviours were discussed here, which were identified in the literature as having a positive effect on trust in the leader. These included the leader being capable, benevolent, having integrity, showing concern for individual followers, being self-aware and transparent in relationship to others, being respectful and fair, and providing employees with structure, feedback and advice (Engelbrecht et al., 2014; Greenleaf, cited in Joseph & Winston, 2005, p.11; Hassan & Ahmed, 2011, p.168; Jung & Avolio, cited in Dirks & Ferrin, 2002, p.614; Krafft et al., 2004, p.11). As principled leadership is an aggregate value-based leadership construct, it follows that certain principled leader behaviours would also result in enhancing the trust relationship between leader and follower.

By professing and acting out the universally accepted moral principles of humility, honesty, transparency, self-discipline, reliability and being committed to something greater than oneself, the leader shows that he/she has integrity and can thus be trusted. The principled leader's self-awareness leads him/her to be aware of how his/her actions influence others. By being transparent about his/her weaknesses and open to feedback regarding them, the principled leader builds trust in that he/she shows commitment to improving the way he/she interacts with others. An important focus of the principled leader is to develop others as per their individual development needs, and to provide them with goals and feedback. This individual concern for others includes having empathy with the follower and having the ability to see a situation from their perspective. This helps to build strong emotional bonds which in turn builds trust. Finally, creating an environment that is fair and respectful, is also a mark of a principled leader, which results in a strong trust relationship. These behaviours of a principled leader lead the researcher to postulate the following hypothesis regarding the relationship between principled leadership and trust in the leader:

Research hypothesis: Principled leader behaviour has a significantly positive influence on trust in the leader.

2.9.3 Organisational Citizenship Behaviour

The term organisational citizenship behaviour (OCB) was first coined by Organ and colleagues in 1983 (Podsakoff, MacKenzie, Paine, & Bachrach, 2000, p.513). OCB was defined as *“individual behaviour that is discretionary, not directly or explicitly recognised by the formal reward system, and that in the aggregate promotes the effective functioning of the organisation”* (Organ cited in Podsakoff et al., 2000, p.513).

Discretionary behaviour is to be understood as behaviour that is not stipulated in the employee’s job description or employment contract. If the employee does not display this behaviour, he/she cannot be penalised or punished. It is thus positive behaviour which the employee displays of his/her own volition. (Organ cited in Podsakoff et al., 2000, p.513).

Wat and Shaffer (2005) add that OCB behaviours increase organisational efficiency in that human resources are freed up and can be allocated more effectively. This has a positive effect on productivity (Bornman & Motowidlo; Organ, cited in Wat & Shaffer, 2005, p.406). Furthermore, OCB leads to better organisational performance in that colleagues and managers can be more efficient at planning, scheduling and problem solving, as well as contributing positively to the quality of service delivery (Hui et al; MacKenzie et al.; Organ cited in Wat & Shaffer, 2005, p.406). Lastly, Wat and Shaffer (2005) claim that organisations where OCB is practiced, gain a reputation for being good places to work at. This helps organisations to employ and retain high quality people (George & Bettenhausen cited in Wat & Shaffer, 2005, p.406).

2.9.3.1 Dimensions of Organisational Citizenship Behaviour

Various dimensions of OCB are discussed in the literature. Most researchers however, adopt the five dimensions shown in Table 2.24, as conceptualised by Organ in 1998 (Engelbrecht & Chamberlain, 2005, p.6; Wat & Shaffer, 2005):

Table 2.24. *Dimensions of OCB*

Dimension	Definition
Conscientiousness	The employee displays voluntary behaviours that go far beyond the minimum requirements of his/her role, specifically in areas such as “attendance, obeying rules and regulations, taking breaks and so forth” (Podsakoff, MacKenzie, Moorman & Fetter, 2000, p.115).
Sportsmanship	“A citizen-like posture of tolerating the inevitable inconveniences of work without whining and grievances” (Organ cited in Podsakoff et al., 2000, p.518).
Civic Virtue	Constructive involvement in organisational processes and governance, including aspects such as attending meetings, even when not compulsory, reading one’s mail, sharing insight and ideas with others, making constructive suggestions voluntarily, showing interest and involvement in larger issues that concern the organisation, protecting the organisation, its people and property (George & Jones; Graham; George & Brief; Organ cited in Podsakoff et.al., 2000, p.522).
Courtesy	Voluntary behaviour displayed by employees that is aimed at “preventing work-related problems with others from occurring” (Podsakoff et.al., 1990, p.115).
Altruism	Providing voluntary assistance to other employees with a task or problem that is related to their job (Podsakoff et al., 1990). This includes actions such as helping those who have been absent, helping with a heavy workload, sharing resources, assisting with new technology and taking a personal interest in colleagues (George & Brief; George & Jones; Williams & Anderson, cited in Podsakoff et al., 2000, p. 519).

2.9.3.2 The relationship between trust in the leader and OCB

Several researchers have postulated and found positive correlations between trust in the leader and OCB (Dirks & Ferrin, 2001; Engelbrecht & Chamberlain, 2005; Newman et al., 2014; Podsakoff, et al., 1990). OCB is a non-contractual, non-economic social exchange between subordinate and leader (Konovsky & Pugh, cited in Engelbrecht & Chamberlain, 2005). “As trust is a manifestation of social exchange, it is this trust by which participants enter

into a non-contractual exchange with the supervisor” (Engelbrecht & Chamberlain, 2005, p.4). Furthermore, Pillai et al. (cited in Engelbrecht & Chamberlain, 2005, p.4) found that employees are more willing to engage in voluntary extra-role behaviours like OCB, when they trust their immediate supervisor and believe that he/she will not take advantage of them. By focussing on increasing subordinates’ trust in them, leaders can help ensure that their subordinates will display increased OCB (Pillai et al.; Podsakoff et al.; and Welch, cited in Engelbrecht & Chamberlain, 2005, p.4).

A South African study by Mey, Werner and Theron (2014), revealed that perceptions of organisational trust are positively related to OCB, with a correlation of .33. Furthermore, trust in the leader was hypothesised to be an antecedent of OCB by Podsakoff et al., (2000), where the correlation between trust in the leader and OCB was found to be .39 (Podsakoff, 2000, p.529).

The relationship between a value-based leadership style, trust in the leader and OCB has been studied for transformational, servant and ethical leadership. In most cases, it appears that trust is a mediating factor between the value-based leadership style and OCB (Engelbrecht & Chamberlain, 2005; Macenzie, Podsakoff & Rich; Podsakoff, MacKenzie & Bommer, cited in Engelbrecht & Chamberlain, 2005, p.3; Newman et al., 2014).

2.9.3.2.1 Transformational leadership, trust and OCB

As discussed previously in this study, followers emulate the behaviour of their leaders, which is why leaders should be role models of desirable behaviour (Bass, Walman, Avolio & Webb, cited in Mayer et al., 2009). Transformational leaders model behaviour which builds good relationships with followers and which assists them in their development. If followers emulate this pro-social behaviour when interacting with colleagues, an organisation should have members which display high levels of OCB (Smith, Organ and Near, cited in Engelbrecht & Chamberlain, 2005, p.3). Furthermore, social exchange theory postulates that when employees feel satisfied with and supported by their leader, they usually want to reciprocate with appropriate behaviour, which takes the form of OCB (Smith et al., cited in Engelbrecht & Chamberlain, 2005, p.3)

Engelbrecht and Chamberlain (2005) hypothesised that transformational leadership, mediated by procedural justice and trust, has a positive influence on OCB (Engelbrecht & Chamberlain, 2005, p.3). The correlation between trust and OCB was significantly positive but weak in this

study ($r = .20$; $p < .05$), confirming the mediating effect of trust on the relationship between transformational leadership and OCB (Engelbrecht & Chamberlain, 2005, p.9).

2.9.3.2.2 Authentic leadership, trust and OCB

The researcher could find no literary evidence of previous research conducted into the relationship between authentic leadership, trust in the leader and OCB. However, the relationship between authentic leadership, trust and work engagement has been studied (Hassan & Ahmed, 2011; Stander et al., 2015). Furthermore, research has been conducted into the relationship between work engagement and OCB (Ariani, 2013; Babcock-Roberson & Strickland, 2010).

Work engagement and OCB are not the same constructs. Work engagement focuses on the cognitive involvement of an employee with their job, whereas OCB relates to attitude and affective commitment towards the organisation (Ariani, 2013). A significant, positive relationship has however, been established between work engagement and OCB. Ariani's (2013, p.50) research yielded a correlation result of $r = .312$ ($p < .01$) between work engagement and OCB. The correlation for the same relationship in research conducted by Babcock-Roberson and Strickland (2010, p.320) was $r = .41$ ($p < .01$).

Having established that authentic leadership has a positive influence on trust in the leader, which in turn has a positive effect on work engagement (Hassan & Ahmed, 2011; Stander et al., 2015), and that work engagement is positively related to OCB (Ariani, 2012; Babcock-Roberson & Strickland, 2010), it is plausible that a positive relationship between authentic leadership, trust in the leader and OCB could exist.

2.9.3.2.3 Servant leadership, trust and OCB

Servant leadership is characterised by the leader's desire to serve followers in such way that they constantly grow wiser (Greenleaf; Van Dierendonck, cited in Mahembe & Engelbrecht, 2014). Followers will tend to respond to the caring nature of the servant leader by going to extra lengths to help accomplish the team's goals and vision (Mahembe & Engelbrecht, 2014). This type of follower behaviour is regarded as OCB.

The relationship between servant leadership and OCB, mediated by trust in the leader was studied by Shahzad et al. (2013). The hypothesis which postulated a significant, positive influence of trust in the leader on OCB was proved valid. Shahzad et al.'s research results yielded a significant, positive relationship between trust and OCB ($r = .59$, $p < .01$).

2.9.3.2.4 Ethical leadership, trust and OCB

The effect of ethical leadership on OCB is also founded in social exchange theory (Eisenbeiss, cited in Newman et al., 2014, p.115). Ethical leaders build credibility as ethical role models in that they display normatively appropriate behaviour such as self-discipline, responsibility (Walumbwa et al., cited in Newman et al., 2014, p.114), setting clear ethical standards, holding followers accountable to those ethical standards (Weaver et al., cited in Newman et al., 2014, p.114), and making decisions based on ethical values (Newman et al., 2014, p.114). When followers observe this behaviour, and perceive their leaders to be moral, fair, and to have integrity, they feel obliged to reciprocate with OCBs (Eisenbeiss, cited in Newman et al., 2014, p.115)

Newman et al. (2014) postulated that ethical leadership, mediated by trust, has a positive influence on OCB. Newman et al. (2014) argued that ethical leadership influences cognitive trust, which in turn influences affective trust, and affective trust has a positive influence on OCB. The correlation between affective trust and OCB-O (OCB directed at the organisation) was weak but significant at .38 ($p < .01$) (Newman et al., 2013, p. 119). The correlation between affective trust and OCB-I (OCB directed at individuals within the organisation) was moderate and significant at .43 ($p < .01$) (Newman et al., 2014, p. 119).

2.9.3.2.5 Principled leadership, trust and OCB

When followers are satisfied with the behaviour of a value-based leader, they will tend to reciprocate with OCB (Engelbrecht & Chamberlain, 2005; Mahembe & Engelbrecht, 2014; Newman, 2014). This leader behaviour encompasses actions such as self-discipline, responsibility, fairness, setting ethical standards, principled decision-making, serving others with the aim of seeing them grow, and building quality relationships through caring (Engelbrecht & Chamberlain, 2005; Mahembe & Engelbrecht, 2014; Newman, 2014).

Principled leaders regard mentoring and developing others as one of their primary responsibilities. They do this in an environment which is caring, fair and respectful towards others. Furthermore, principled leaders have internalised those values which are universally accepted as moral, and they use them to set standards for followers, to hold them accountable, and to make decisions. When followers work in an environment created by these behaviours, it is likely that they will feel cared for, empowered, fairly treated and have a clear idea of what is expected from them in terms of their own ethical behaviour. Based on social exchange theory (Blau, cited in Newman, 2014, p.114) followers would feel the need to reciprocate with appropriate behaviour such as OCB.

As discussed in the previous section, principled leader behaviour leads to greater trust in the leader. Trust, just like OCB, is a non-contractual social exchange, dependent on the leader's behaviour and the way that behaviour influences the follower's perceptions of the leader. The foregoing literature provided evidence that the value-based leader behaviours influence OCB via trust in the leader. The researcher thus postulates the following:

Research hypothesis: Trust in the leader positively influences organisational citizenship behaviour.

2.10 Structural Model

In summary, the researcher proposes that principled leadership, which is preceded by high levels of moral intelligence in the leader, leads followers to place greater trust in their leader and this in turn, results in the follower practicing organisational citizenship behaviour. This translates into the following structural model:

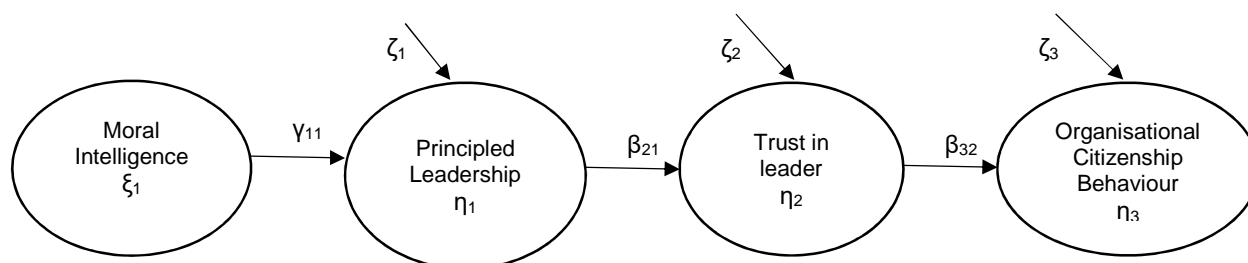


Figure 2.2. Structural Model

Moral Intelligence forms the exogenous (independent) variable depicted as the symbol Ksi (ξ). Principled leadership, trust in the leader and OCB are endogenous (dependent) variables and carry the symbol Eta (η). The symbol Gamma (γ) indicates the path between the exogenous and the first endogenous variable, while Beta (β) symbolises the path between the remaining endogenous variables. Finally, Zeta (ζ) depicts residual error in the endogenous variables (Diamantopoulus & Siguaw, 2000, p.47).

2.11 Summary

The literature study provided an analysis of the behaviours of value-based leadership, as inferred from the scales developed by various researchers to measure transformational, authentic, servant and ethical leadership. These behaviours were summarised (see Table 2.14) to determine commonality and overlap of behaviours.

From this list of behaviours, the researcher distilled six dimensions of principled leadership, to form an aggregate value-based leadership construct. The main aim of this study is to develop a new scale to measure principled leadership. This required the development of items to measure the dimensions of principled leadership. The items underlying the dimensions of principled leadership, as theorised from the literature of the various value-based leadership theories, were presented in Tables 2.16 to 2.22. Together, the dimensions and their items form the Principled Leadership Scale (PLS). This scale is depicted in the measurement model shown as Figure 2.1.

The researcher desired to test the construct validity of the PLS not only as a stand-alone construct, but also within a larger nomological network of latent variables. This adds to the construct validity of the scale (Kerlinger & Lee, 2000). It was thus proposed that an antecedent of principled leadership is moral intelligence, and that principled leadership has a positive effect on trust in the leader, which in turn has a positive effect on OCB. Literature supporting these arguments was presented. The proposed relationships in the nomological network culminated in the development of the structural model, which is depicted as Figure 2.2.

Testing the construct validity of the PLS requires a research plan, which provides a 'roadmap' of how this analysis should be conducted. The research plan that was followed in this study is discussed in Chapter 3.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

The literature study led to the conceptualisation of six latent variables for the Principled Leadership Scale (PLS), presented in the measurement model in Figure 2.1 (see Chapter 2). Furthermore, a structural model depicting a nomological network within which principled leadership interacts as an outcome of moral intelligence and an antecedent of trust, which leads to organisational citizenship behaviour, was depicted in Figure 2.2 (see Chapter 2). This chapter will focus on outlining the research methodology that was utilised to develop the PLS and test the validity of the structural paths hypothesised in the structural model.

3.2 Substantive Research Hypothesis

The PLS was developed to measure principled leader behaviour in leaders of South African organisations. The PLS can, however, only be used with confidence to operationalise the latent principled leadership variables in the measurement model if the scale was found to be reliable and construct valid. The first overarching substantive research hypothesis which was therefore to be tested, relates to the measurement model of the PLS and reads as follows:

Substantive research hypothesis 1: The PLS provides a construct valid and reliable measure of principled leader behaviour of South African organisational leaders.

The meaning of a construct not only lies in the internal structure of the construct but also in the way the construct is embedded in a larger nomological network of latent variables (Kerlinger & Lee, 2000). Further hypotheses relating to the nomological network of latent variables interacting with principled leadership were theorised in the literature review. The construct validity of the PLS therefore also depends on the extent to which principled leadership is understood to be embedded in a larger nomological network, and whether this is empirically corroborated. As such, a second overarching substantive research hypothesis was to be tested, namely:

Substantive research hypothesis 2: The structural model provides a valid description of the way principled leadership is embedded in a larger nomological network by describing the antecedents and outcomes of principled leadership, as theorised in the literature review.

3.1 Research Design

A research design is the structure and plan formulated in a research investigation to obtain answers to research questions. The structure represents the variables derived from the literature study and suggests the hypothesised nature of the relationship between these variables. The plan is the outline of what the researcher will do, from formulating hypotheses, operationalising the variables, and collecting and analysing the data (Kerlinger, 1973, p.279).

When deciding on the most suitable design for research, the ability to manipulate the exogenous variables must be considered. In the suggested measurement and structural model, the latent variables cannot be experimentally manipulated as they are dependent on scores obtained in response to statements made during measurement of the various scales, which were used to measure the latent variables. This led to the conclusion that the most suitable research design to use in this case was an *ex post facto* correlational design (Theron, 2014).

Ex post facto literally means 'from what is done afterwards'. Instead of subjecting equivalent groups to different treatments and observing the effect of this on the dependent variable, as would be done in experimental research, *ex post facto* research begins with groups that are already different and then searches for the reason for those differences, and possible correlations between the variables, after the fact (Kerlinger & Lee, 2000).

While the advantage of using *ex post facto* correlation designs is that correlations between variables can be established, even though experimentation is not possible, the design also has three distinct disadvantages, namely:

- The independent variables cannot be manipulated,
- Generalisation is limited because the sample is not random,
- There is a risk of improper interpretation because of the points mentioned above (Kerlinger & Lee, 2000).

The structure of such a research design typically consists of two sub-models, namely, the measurement model and the structural model. The measurement model defines how each dimension of the scale (latent variable) is measured by its corresponding items (manifest indicators) (Diamantopoulos & Siguaw, 2000, p.4). The structural model suggests the relationships between the latent variables (in this case, moral intelligence, principled leadership, trust in the leader and organisational citizenship behaviour) within a nomological

network, as well as the amount of unexplained variance (Diamantopoulos & Siguaw, 2000, p.4).

3.3 Research Plan

Having discussed the reason for the choice of research design and the structure thereof above, the outline of how the research was conducted (i.e. the plan), will now be discussed. The research plan was based on steps 1 to 6, and 8 of the generic steps for scale development (McKenzie et al., 2011, p. 297) presented in Chapter 1 (see Table 1.3) and took place in the 10 phases detailed below.

Phase 1: Specification of the PLS

The items relating to the dimensions of the PLS provided in Section 2.7 (see Chapter 2) were developed and the measurement model of the PLS was specified.

Phase 2: Specification of the ancillary scales

The items relating to the dimensions of the ancillary scales were specified.

Phase 3: Sample selection and data collection

The population sample from which to collect the data for the study was selected, and data was collected.

Phase 4: PLS Item and factor analysis

This phase was conducted in two steps, namely:

- a) Item analysis was conducted to determine the extent to which the PLS adequately measures principled leadership (using SPSS's reliability analysis), and
- b) Exploratory factor analysis was conducted to determine the extent to which the structure of the PLS is accurate (using SPSS's factor analysis).

Phase 5: Reliability analysis of the ancillary scales

For each of the ancillary scales, reliability analysis was conducted to determine the reliability of these scales. This was done with SPSS's reliability analysis.

Phase 6: Evaluation of the fit of the PLS's measurement model and validation of hypothesised paths of the PLS's measurement model

This phase included three steps:

- a) Confirmatory factor analysis (CFA) was used to determine the extent to which the measurement model of the PLS fitted the data and thereby assessed the construct validity of the PLS.
- b) The construct validity of the PLS is not only determined by the fit of the measurement model, but also by the magnitude of the factor loadings of the items on their related dimensions. This assessment formed the second part of assessing the construct validity of the PLS.
- c) Power assessment of the measurement model.

Phase 7: Evaluation of the fit of the measurement models of the ancillary scales

Confirmatory factor analysis (CFA) was used to determine the extent to which the measurement models of the three ancillary scales fitted the data. The purpose of this step was to confirm that the items and their related dimensions, which measure each of the ancillary scales, contributed satisfactory meaning to the definition of the construct measured by each scale. These scales were to be included in the structural model. Logic dictated that if the dimensions of the ancillary scales showed acceptable reliability and the measurement models of the ancillary scales showed acceptable fit, the likelihood of achieving acceptable fit of the structural model would increase.

Phase 8: Specification of the overall measurement model underlying the structural model

Random item parcelling was used to specify the structure of the measurement model underlying the structural model.

Phase 9: Specification of the structural model

The structural model represents the nomological network within which principled leadership was hypothesised to be embedded. Within this nomological network, it was proposed that moral intelligence is an antecedent of principled leadership and trust in the leader and OCB are outcomes of principled leadership. The structural model was specified to test the effect of these relationships.

Phase 10: Evaluation of the fit of the structural model and validation of hypothesised paths of the structural model

This phase included five steps:

- a) Evaluation of the fit of the structural model's underlying measurement model using CFA via LISREL

- b) Evaluation of the fit of the structural model using CFA via LISREL
- c) Evaluation of the validity of the hypothesised paths of the structural model using structural equation modelling via LISREL (Weston & Gore, 2006, p.723).
- d) Power assessment
- e) Model modification

Several of the above phases have hypotheses relating to them, as will be discussed in the following sections. As these phases and their related hypotheses can become a labyrinth of information, they have been depicted for easy reference as Appendix H.

3.3.1 Phase 1: Specification and validation of the PLS measurement model

The steps necessary to determine the accuracy of the PLS's structure and ability to measure principled leadership were outlined in Table 1.3 (see Chapter 1) as steps 1 to 4. How these steps were followed will now be discussed in detail.

3.3.1.1 Definition of dimensions

Adequately defining dimensions or constructs is a very important step in scale development. MacKenzie, Podsakoff and Podsakoff (2011, p.295) list three problems that may arise if constructs are not adequately defined, namely:

- Confusion is created about what the construct refers to. Confusion can also arise about “the similarities and differences between the construct and other constructs that may already exist in the field” (MacKenzie et al., 2011, p.295).
- The construct may be deficient of certain indicators or may be contaminated by indicators because its definition overlaps with other constructs already existing in the field,
- If the indicators of a construct do not adequately capture what they are supposed to, invalid conclusions about the relationships of a construct with other constructs may be drawn.

This was taken into consideration during the conceptualisation of an initial set of dimension definitions for the PLS.

3.3.1.2 Item generation

After defining the dimensions, items which measure the dimensions were developed. Best practice determines that this can either be done deductively through detailed examination of the literature or inductively, by asking a sample of respondents to provide descriptions of

behaviours that describe the various dimensions (Hinkin, 1998). The deductive approach to item generation was followed. Table 2.14 (see Chapter 2) provides a comparative table of leader behaviour, which a value-based leader should display. These behaviours provided the base from which an initial list of items was developed.

3.3.1.3 Face and content validation

Face and content validity of the scale were established by utilising the Delphi Technique (Hsu & Sandford, 2007) to review the scale's initial compilation of dimensions and their related items. The scale was emailed to South African academics and professionals operating in the field of leadership, for review. Thirteen participants provided feedback on the initial dimensions and items. Seven responses were from professionals, who consult in the field of management or organisational development and six responses were from academics of various South African universities.

Based on guidelines proposed by Worthington and Whittaker (2006, p. 814), participants were asked to consider the following questions during their evaluation of the scale:

- 1) Does the item assess the behaviour described in the definition of the dimension it relates to, or is it better suited to another dimension?
- 2) Is the item clear and unambiguous?
- 3) Is the language of the item clear enough for employees with Grade 12 level English to understand?
- 4) Can the behaviour assessed by the items be observed by others?
- 5) Does each item assess only one construct?

After reviewing the feedback, several changes were made to the initial scale:

- 1) The wording of several items was changed.
- 2) The number of items was reduced from 81 to 58.
- 3) The original dimension 'Change Agent' was changed to 'Balanced Processing'. Upon review, it became clear that managing change, while important to leadership, is not necessarily a value-based behaviour. The ability of a leader to be open to new thinking and to challenge others to do so, is better contained in the dimensions 'Intellectual Stimulation' of transformational leadership (Bodla & Nawaz, 2010) and 'Balanced Processing' of authentic leadership (Walumbwa et al., 2008). These definitions, together with literature on critical thinking mentioned in section 2.6.6. (see Chapter 2) were thus used to conceptualise the 'thinking' behaviours of a principled leader, under the dimension 'Balanced Processing'.

3.3.1.4 Item measurement

The PLS makes use of a Likert scale to measure the items. Hinkin (1998, p.110) suggests that the reliability of a Likert scale increases up to the use of five points in the scale, but levels off thereafter. Accordingly, it was decided to use a five-point scale.

3.3.1.5 Formal specification and operationalisation of the measurement model

Once item generation was finalised, the measurement model shown in Figure 3.1, was specified.

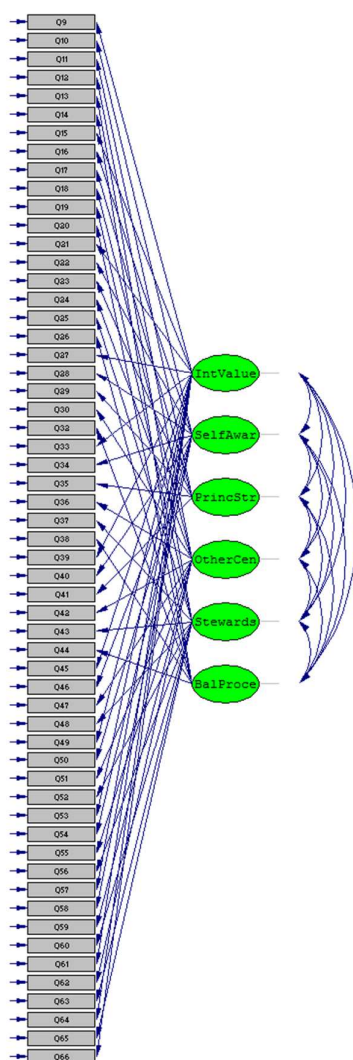


Figure 3.1. PLS measurement model path diagram

By defining the dimensions (latent variables), generating the items (indicator variables), and depicting the relationship between these variables in the measurement model, the Substantive Research Hypothesis 1, stated in Section 3.2 was operationalised.

Through operationalization, the measurement model was specified as measurement model Equation 3.1:

Equation 3.1: Measurement Model Equation

$$X = \Lambda\xi + \delta \text{ (Diamantopoulos \& Siguaw, 2000, p.47)}$$

Where:

X is a 1 x 58 column of PLS item scores²

Λ is a 58 x 6 matrix of factor loadings describing the slope of the regression of X_i on ξ_i

ξ is a 1 x 6 column vector of principled leadership dimensions

δ is a 1 x 58 column vector of measurement error components consisting of the combined effect on X of systematic non-relevant influences and random measurement error (Diamantopoulos & Siguaw, 2000, p.89; Theron, 2014).

3.3.2 Phase 2: Specification of the ancillary scales

The nomological network in which the structural validity of the PLS was tested, was made up of three additional scales namely, the adapted Moral Intelligence Inventory (MCI) (Martin & Austin, 2010), the Leader Trust Scale (LTS) (Engelbrecht et al., 2014) and the Organisational Citizenship Behaviour Scale (OCBS) (Engelbrecht & Chamberlain, 2005). The items and related dimensions of these scales, as they were operationalised, are discussed below.

3.3.2.1 Moral Intelligence

Lennick and Kiel's Moral Competency Inventory (MCI) (Martin & Austin, 2010) was used to measure moral intelligence in the leader. The 40-question instrument measures the four principles listed in Table 2.23 (see Chapter 2) and the underlying ten competencies (see Table 3.1) using a five-point, self-rating, Likert-like scale. Martin and Austin report Cronbach's alphas ranging between .65 and .84 for the ten competencies of the MCI (Martin & Austin, 2010, p.443).

² Equation 3.1 assumes that the measurement model is fitted using the individual items of the PLS dimensions as indicator variables (Theron 2014).

In the current research, the researcher decided to measure the items as they relate to the four principles of the MCI rather than how they relate to the underlying competencies. This would serve to provide new information about the extent to which the items are representative of the principles they relate to.

Table 3.1: *MCI competencies*

Principles	Underlying moral competencies
Integrity	<ul style="list-style-type: none"> • Acting consistently with principles, values and beliefs • Telling the truth • Standing up for what is right • Keeping promises
Responsibility	<ul style="list-style-type: none"> • Taking responsibility for personal choices • Admitting mistakes and failures • Embracing responsibility for serving others
Compassion	<ul style="list-style-type: none"> • Actively caring about others
Forgiveness	<ul style="list-style-type: none"> • Ability to let go of one's own mistakes • Ability to let go of other's mistakes

(Lennick & Kiel, 2008, p.78)

Research participants were required to evaluate the moral intelligence of their line manager. This required the researcher to change the original self-rating scale to an other-rating scale. In doing so, it was necessary to remove the 11 items given in Table 3.2, as it is not possible for a subordinate to rate the extent to which their manager displays this behaviour. The removed items primarily refer to the competencies "Ability to let go of one's own mistakes" and "Ability to let go of other's mistakes".

Table 3.2 *MCI items removed*

2. I tell the truth unless there is an overriding moral reason to withhold it.
9. I appreciate the positive aspects of my past mistakes, realising that they were valuable lessons on my way to success.
10. I am able to 'forgive and forget' even when someone has made a serious mistake.
11. When faced with an important decision, I consciously assess whether the decision I wish to make is aligned with my most deeply held principles, values and beliefs.
19. I resist the urge to dwell on my mistakes.
20. When I forgive someone, I find that it benefits me as much as it does them.
29. My co-workers would say that I have a realistic attitude about my mistakes and failures.

-
- 30. I accept that other people will make mistakes.
 - 31. My co-workers would say that my behaviour is very consistent with my beliefs and values.
 - 39. Even when I have made a serious mistake in my life, I am able to forgive myself and move ahead.
 - 40. Even when people make mistakes I continue to trust them.
-

(Lennick & Kiel, 2008)

The final amended items as they were used for this study are shown in Table 3.3. The final questionnaire with a key explaining how the items link to the moral competencies and principles is provided in Appendix A.

Table 3.3 *Adapted MCI other-rating items*

-
- 1. My manager clearly states the principles, values and beliefs that guide his/her actions.
 - 2. My manager will generally confront someone if he/she sees them doing something that isn't right.
 - 3. When my manager agrees to do something, he/she always follows through.
 - 4. When my manager makes a decision that turns out to be a mistake, he/she admits it.
 - 5. My manager owns up to (admits) his/her own mistakes and failures.
 - 6. My manager goes out of his/her way to help others.
 - 7. My manager shows genuine interest in new people he/she meets.
 - 8. I can depend on my manager to tell the truth.
 - 9. When my manager believes that his/her manager is doing something that isn't right, he/she will challenge his/her manager.
 - 10. I can depend on my manager to keep his/her word.
 - 11. When my manager makes a mistake, he/she takes responsibility for correcting the situation.
 - 12. My manager is willing to accept the consequences of his/her mistakes.
 - 13. My manager's leadership approach is to lead by serving others.
 - 14. My manager truly cares about the people he/she works with as people – not just as the 'human capital' needed to produce results.
 - 15. My manager's behaviour is very consistent with his/her beliefs and values.
 - 16. I think of my manager as an honest person.
-

-
17. I believe that if my manager knew that our organisation was engaging in unethical or illegal behaviour, he/she would report it, even if it could have an adverse effect on his/her career.
 18. When a situation may prevent my manager from keeping a promise, he/she consults with those involved to renegotiate the agreement.
 19. My manager takes ownership (responsibility) of his/her decisions.
 20. My manager seems to learn from mistakes he/she has made in the past.
 21. My manager pays attention to the development needs of my colleagues and me.
 22. My manager is a compassionate person.
 23. My manager is able to deliver feedback in a respectful way.
 24. My manager is the kind of person who stands up for what he/she believes in.
 25. When someone asks my manager to keep a matter confidential, he/she does so.
 26. When things go wrong, my manager does not blame other circumstances.
 27. My manager discusses his/her mistakes with co-workers to encourage tolerance for risk-taking within the team.
 28. My manager spends a significant amount of his/her time providing resources and removing obstacles for me and my colleagues.
 29. Because my manager cares about those who report to him/her, he/she actively supports the efforts of subordinates to accomplish important personal goals.
-

(Lennick & Kiel, 2008)

The MCI makes use of a Likert scale in which the 5-point rating scale as shown under 'Original MCI rating scale' in Table 3.4, is used. The rating scale was changed as per the 'Adapted MCI rating scale' shown below, to keep the rating convention consistent throughout all the scales used in this study.

Table 3.4 *MCI rating scale*

Original MCI rating scale	Adapted MCI rating scale
1 = Never	1 = Strongly disagree
2 = Infrequently	2 = Disagree
3 = Sometimes	3 = Neutral
4 = In most situations	4 = Agree
5 = In all situations	5 = Strongly agree

3.3.2.2 *Trust in the leader*

Trust in the leader was measured using the 13-item Leader Trust Scale (LTS) developed by Engelbrecht et al. (2014). The LTS comprises 11 items of Bews' trust scale and two of the Workplace Trust Survey, developed by Ferres, Connell and Travaglione (cited in Engelbrecht et al., 2014). Engelbrecht et al. (2014, pp.5 -6) reported Cronbach's alphas for reliability of .97 for this scale and evidence of good model fit. Research participants evaluated the trust they have in their leader. Table 3.5 indicates the final items which were used in this study. The word 'threat' was added to items 7 and 10 to help expand on the meaning of the word 'risk'.

Table 3.5 *Leader Trust Scale (LTS)*

-
1. I proceed on the basis that my manager will act in good faith.
 2. I feel that my supervisor/manager keeps personal discussions confidential.
 3. I am comfortable allowing my supervisor/manager control of issues that are important to our team.
 4. I can depend on my supervisor/manager.
 5. I believe that my supervisor/manager does not need to be carefully watched.
 6. My supervisor/manager is trustworthy.
 7. In a situation of risk (threat) one can rely on my manager to act in the interest of others.
 8. My manager supports our team even in our absence.
 9. If I request assistance with a problem, my manager will act in my interest.
 10. In a situation of risk (threat) I can rely on my manager not to take advantage of my vulnerability.
 11. If I request my manager to do something for me, I know that it will generally be done.
 12. I can believe what my manager says.
 13. Even in my absence, my manager will support me.
-

(Engelbrecht et al., 2014)

3.3.2.3 *Organisational citizenship behaviour*

OCB was measured using Engelbrecht and Chamberlain's modification of Podsakoff and MacKenzie's Organisational Citizenship Behaviour Scale (OCBS) (Engelbrecht & Chamberlain, 2005). This modified scale allows for self-reporting and ensures that the wording of questions is relevant for the South African context (Engelbrecht & Chamberlain, 2005, p.6). The OCBS measures the dimensions listed in Table 2.24 (see Chapter 2). Engelbrecht and Chamberlain reported Cronbach's alphas of .79 and good model fit for the OCBS (Engelbrecht & Chamberlain, 2005, pp.6 - 7). Research participants evaluated their own organisational citizenship behaviour.

One item of the modified OCBS was changed, namely, “I can be described as the classic ‘squeaky wheel’ that always needs greasing”. This is not an idiom that is commonly used in South Africa and the researcher doubted that the meaning of it would be understood by participants. The item was thus changed to read: “I am a person who needs constant attention.”

Furthermore, the item “I attend meetings that are not mandatory but are considered important” was expanded to read “I attend meetings/information sessions/road shows that are not mandatory but are considered important”. This was done because one of the participating employers (a public service organisation) pointed out that in their work environment, meetings were gatherings that employees only attended if they were invited. Uninvited attendance was frowned upon. Information sessions and road shows did, however, fall into the category of gathering where voluntary attendance would be expected.

The items of the final modified OCBS are shown in Table 3.6.

Table 3.6 OCBS items

-
1. *I help others who have heavy workloads*
 2. *I am a person who needs constant attention.*
 3. *I believe in giving an honest day's work for an honest day's pay.*
 4. *I try to avoid creating problems for co-workers.*
 5. *I consume a lot of time complaining about trivial matters.*
 6. *I keep abreast of developments in the organisation.*
 7. *I tend to make problems bigger than they are.*
 8. *I consider the impact of my actions on co-workers.*
 9. *I attend meetings/information sessions/road shows that are not mandatory but are considered important.*
 10. *I am always ready to lend a helping hand to those around me.*
 11. *I attend functions/events that are not required, but help the organisation's image.*
 12. *I read and keep up with the organisation announcements, memos, etc.*
 13. *I help others who have been on vacation or sick leave to catch up their work.*
 14. *I do not abuse the rights of others.*
 15. *I willingly give my time to help others who have work related problems.*
 16. *I tend to focus on what is wrong with my situation rather than the positive side.*
 17. *I take steps to try to prevent problems with other workers.*
-

-
18. *My attendance at work is above the norm.*
 19. *I always find fault with what the organisation is doing.*
 20. *I am mindful of how my behaviour affects other people's jobs.*
 21. *I do not take extra breaks.*
 22. *I obey rules and regulations even when no one is watching.*
 23. *I help orient new people even though it is not required.*
 24. *I am one of the most conscientious employees.*
-

(Engelbrecht & Chamberlain, 2005)

3.3.3 Phase 3: Sample selection and data collection

Once the measurement model was formally specified, the factorial structure and fit of the model required testing. Data relating to the PLS was necessary to do this. Data was also required for validation of the ancillary scales. The issue of sample selection and data collection are discussed below.

3.3.3.1 Sample selection

An important consideration when selecting a sample from which to collect data is the degree to which the sample represents the population for which the measure is designed (MacKenzie et al., 2011, p.310). The PLS is designed to measure the leadership behaviour of middle to top management. It was therefore necessary that the sample was made up of employees who report to managers in such positions.

In terms of the sampling logic used to select the sample, probability sampling, which involves selecting a random sample from a population, is considered the best way to select a sample for social research (Babbie, 2013, p.127). However, it is not always practical or possible to use probability sampling in research situations. As such, purposive, nonprobability sampling was used. In this type of sampling a researcher selects those participants which he or she judges to be most useful or most representative of the population for which the scale is intended (Babbie, 2013, p.127).

A further important consideration of sampling is the sample size. Factor analysis, the statistical method used to analyse the construct validity of a scale, is particularly sensitive to sample size. It is recommended that the minimum ratio of participants to items is between 3:1 and 10:1 (Hinkin, 1998; MacKenzie et al., 2011; Worthington & Whittaker, 2006). When discounting the ratio guidelines, a sample size of 200 to 500 appears to be regarded as adequate for both

exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) (Hinkin, 1998; MacKenzie et al., 2011; Worthington & Whittaker, 2006; Williams et al., 2010).

During the test phase, 300 participants completed the PLS, which comprised 58 items. The sample size was thus sufficiently large and the ratio of participants to items was an adequate 5:1.

Data from this sample was also collected for validation of the ancillary scales, which form part of the structural model of this study. Each person who took part in the research was therefore required to complete the questionnaire for the PLS as well as the three questionnaires which formed part of the structural model. Additional detail of the sample is provided in Table 3.7.

Table 3.7 *Sample details*

Industry Type:	Number of participants	Percentage of participants
Software development and consulting services	239	79%
Retail	18	6%
Wine making	15	5%
Construction	16	5%
Public service	12	4%
Racial Split:		
White	253	84%
Coloured	31	10%
African	11	4%
Indian	5	2%
Gender Split:		
Female	174	58%
Male	126	41%
Job Level:		
Non-managerial	173	58%
Lower level management (first level of line management)	45	15%
Middle level management	49	16%
Upper level management (senior management)	24	8%
Top level management (Director or Executive)	9	3%
Average age of participants:	33 years	

The researcher wishes to acknowledge that the racial split of the sample cannot be regarded as representative of the South African population. This is an unfortunate consequence of purposive, non-probability sampling. Furthermore, this may have been influenced by the fact that 1) at least 60% of participants were from the Western Cape, where the African and Indian population has lower representation than in other provinces, and, 2) 79% of the participants worked in the Software Development industry, which is dominated by young, white graduates, particularly in the Western Cape.

3.3.3.2 Data Collection

Data was collected via Stellenbosch University's online questionnaire platform, SUN Survey, as well as with paper-based questionnaires, whichever was more practical for the participating organisations. All participants were briefed about the purpose of the research, either in person or via email in those cases where a personal briefing was not possible. Participants were informed that data would be used strictly for research purposes, that data would be kept confidential, and that participation was voluntary.

Participants were also informed that their managers would receive feedback on the research results of their organisation. They were informed that this may pose the risk of exposure, the risk was, however, to be managed in that participation was anonymous, employees were not required to name their manager or department when completing the questionnaire, and feedback would be given in aggregate format only.

3.3.4 Phase 4a and b: PLS item and factor analysis

Once the data was collected, the researcher could begin with the data analysis. The data of the PLS was analysed first. This was done using exploratory factor analysis (EFA) via the statistical software SPSS. The purpose of EFA is to:

- condense the number of items by identifying and eliminating poor items
- establish reliability of the scale using SPSS's reliability analysis
- establish construct validity of the scale
- determine how many variables (factors) underlie the items being measured
- establish the relationship between the latent variables (factors)

(DeVellis, 2003; Worthington & Whittaker, 2006)

3.3.4.1 Eliminating problematic items

Various methods of checking for problematic items are recommended in the literature. The purpose and desired result of the four most common methods is discussed below:

1) Item-scale correlations

The aim is to arrive at a set of highly correlated items. Each item should therefore correlate highly with the collection of remaining items. This can be determined by either using uncorrected (the item is included in the overall analysis) or corrected (the item is excluded from the analysis) item-total correlation (DeVellis, 2003, p.93). DeVellis (2003, p.93) suggests that it is advisable to use the corrected item-total correlation because uncorrected item-total correlations can inflate the correlation coefficient. (DeVellis, 2003, p.93). Items with values lower than 0.30 for this correlation should be considered for elimination (Pallant, 2010).

2) Inter-item correlations

Moderate correlations between items is desirable as this indicates that they are similar in measuring a specific construct.

3) Item variance

Relatively high variance for a scale item is desirable. Low variance indicates poor discrimination in that all individuals responding to the measure, choose the same answer. Ideally, the item should evoke varied responses from respondents. If the Item-total Statistics, resulting from the SPSS reliability analysis, show a noteworthy change in item variance when an item is deleted, such an item should be considered for elimination (DeVellis, 2003, p.93).

4) Item means

As mentioned above, a 5-point Likert scale was used to measure the items. Item means close to 3 would be desirable in this case. If the mean of an item is concentrated at either end of the scale (1 or 5), the item is probably poorly worded in that participants either all agree or disagree with the statement. Elimination or rewording of the item should be considered (DeVellis, 2003, p.94).

In summary, items that do not vary or that have lopsided means, will not correlate significantly (DeVellis, 2003, p.94). Of the above four checks, the first two are therefore the most important and these were thus used in the analysis to check for poor items.

3.3.4.2 Reliability

The reliability coefficient, alpha, is one of the most important aspects of a scale's quality. "Alpha is an indication of the proportion of variance in the scale scores that is attributable to the true score" (DeVellis, 2003, p.95). All the above checks for problematic items have an influence on alpha. Once poor items have been weeded out using the above checks, alpha can be used as a final check to determine how successful the item reduction has been (DeVellis, 2003, p.95).

Regarding the ideal strength of the alpha value, Nunnally (1978) states that ideal strength is dependent on the use of the scale. In the early stages of research, time and resources can be saved by working with scales of modest reliability, in which case reliabilities of .70 to .80 can be considered sufficient. However, when applying the research in practice, and especially in settings where very important decisions are based on the test scores, a reliability of .90 to .95 should be regarded the desirable standard (Nunnally, 1978, pp. 245-246).

The consensus among other researchers appears to be that an alpha value of .70 should be regarded as the absolute minimum acceptable value and that alpha values $\geq .80$ are desirable (DeVellis, 2003; Hinkin, 1998). A guideline to interpreting Cronbach's alpha values is provided in Table 3.8.

Table 3.8 *Cronbach's alpha guideline*

Reliability coefficient value	Interpretation
.90 and above	Excellent
.80 - .89	Good
.70 - .79	Adequate
Below .70	May have limited applicability

(Nunnally, 1978)

An additional point to consider regarding alpha values is that they are affected by the length of the scale. Longer scales tend to result in higher alphas but may lead to respondent fatigue. Shorter scales, on the other hand, lower the alpha value but also reduce the burden on respondents. In deciding on scale length, a fine balance between brevity and reliability should thus be found (DeVellis, 2003, p.99).

3.3.4.3 Determining the construct validity using factor analysis

Having checked the data for high quality items, the next step was to establish construct validity by determining the number of factors underlying the items. The researcher aimed for a parsimonious account of factors and did so using the three guidelines discussed below:

- Eigenvalue Rule (Kaiser-Meyer-Olkin measure)

The Eigenvalue rule states that the total amount of information in a set of items (a factor) is equal to the number of items. The eigenvalue of a factor, therefore, represents the amount of information captured by that factor. A factor with an eigenvalue of 1.0 captures the same proportion of total information as captured by a single item. Per the rule, factors with Eigenvalues of less than 1.0 should be removed (DeVellis, 2003, p.114; Hinkin, 1998, p.112).

- Scree test

In a scree plot, “the eigenvalues of successive factors are plotted against the ordinal numbers of the factors. The curve eventually flattens out, normally at the point where the eigenvalues fall below 1.0” (Kinnear & Gray, 2004). The number of factors plotted to the left of the ‘elbow’ of the curve, indicate the number of underlying factors in the scale (DeVellis, 2003, p.115).

- Rotation

The purpose of rotation is to provide clarity with regards to the factor onto which items load (DeVellis, 2003, p.121). “Rotation maximises high item loadings and minimises low item loadings, therefore producing a more interpretable and simplified solution” (Williams, Onsman & Brown, 2010, p.9). Two methods of rotation are possible, namely, orthogonal (varimax) and oblique (quartimax) rotation.

The advantage of orthogonal rotation is that it is simple and conceptually clear (MacCallum, Wegener, & Strahan, 1999). However, it also has several disadvantages, especially when used in the social sciences. The underlying theory and empirical evidence which form the base of social science constructs often lead to the expectation that constructs will correlate with one another. Orthogonal rotation does not allow for correlation and can therefore produce misleading results (Fabrigar et al., 1999).

Oblique rotation does allow for correlation and “provides estimates of the correlations among common factors” (Fabrigar et al., 1999). These correlation estimates provide useful information about the conceptual nature of common factors. For example, a

substantial correlation between factors may point towards the presence of higher order factors. By analysing the correlation matrices of the factors, insight can be gained into the nature and number of the higher order factors (Fabrigar et al., 1999).

Based on the above recommendations by Fabrigar et al. (1999), oblique rotation, using the Principle-Axis factoring extraction method with the Direct Oblimin Rotated solution in SPSS, was used.

When analysing the data based on rotation, significant factor loadings ($\geq .40$) are desirable (Hinkin, 1998).

3.3.5 Phase 5: Reliability analysis of the ancillary scales

Reliability analysis, using the SPSS Reliability Analysis technique, was conducted on the subscales of each of the ancillary scales (adapted MCI, LTS and OCBS), which were used to measure the validating variables of the structural model.

3.3.6 General information regarding the evaluation of model fit

The next phase in the research plan was the evaluation of the fit of the measurement model of the PLS. Before discussing the detail of how this was done, the researcher wishes to provide some general comments about the process of evaluating model fit. These comments relate to Phases 6 through to 9b of the research plan, which all deal with fitting either a measurement, or a structural model.

The purpose of assessing a model's overall fit is to determine the degree to which the model "explains the relationships found in the sample data" (Worthington & Whittaker, 2006, p.85). When the covariance matrix implied by the model is equal to the covariance matrix of the observed data, the model is said to fit (Diamantopoulos & Siguaw, 2000, p.7). Diamantopoulos and Siguaw (2000, p.82), however, warn that while the fit indices yield information about the model's fit, they do not provide any guarantee that the model is useful or plausible. This judgement rests on the shoulders of the researcher.

3.3.6.1 Goodness-of-fit indices

A wide range of goodness-of-fit indices have been developed. No fit index is indisputably superior to another because "particular indices have been shown to operate somewhat differently given the sample size, estimation procedure, model complexity, violation of the underlying assumptions of multivariate normality and variable independence, or a combination

thereof" (Byrne cited in Diamantopoulos & Siguaw, 2000, p.83). It was therefore the researcher's responsibility to evaluate and integrate the results of the various fit indices and reach a conclusion regarding the fit of the model. A guideline of various goodness-of-fit indices which were used, and their criteria, are shown in the Table 3.9.

Table 3.9 *Goodness-of-fit indices and their criteria*

Goodness-of-fit indices	
Overall fit measures	Desired values
Satorra-Bentler Minimum fit function Chi-Square	A non-significant result indicates good model fit.
χ^2 /df (Chi-square / Degrees of Freedom)	Values between 2 and 5 indicate good fit
Root Mean Square Error of Approximation (RMSEA)	Values: <.05 indicate good fit ≥.05 and <.08 indicate reasonable fit, and ≥.08 indicate poor fit
P-Value for Test of Close Fit (RMSEA < 0.05)	Values >.05 indicate good fit
90% Confidence Interval for RMSEA	If the lower limit is close to zero and the upper limit is less than .08, the model shows good fit
Root Mean Square Residual (RMR)	Low values indicate good fit (<.08)
Standardised Root Mean Square Residual (SRMR)	Values indicate the following: < .05 indicate good fit >.05 and <.08 indicate acceptable fit
Absolute fit index	
Goodness-of-Fit Index (GFI)	Values should range between 0 and 1. Values >.90 indicate good fit.
Relative fit indices	
Non-Normed Fit Index (NNFI)	Values range between 0 and 1. Values >.90 and ≤.95 indicate reasonable fit and values >.95 indicate good fit.
Normed Fit Index (NFI)	
Comparative Fit Index (CFI)	
Incremental Fit Index (IFI)	
Relative Fit Index (RFI)	

(Diamantopoulos & Siguaw, 2000, pp. 82- 88; Hooper, Coughlan, & Mullen, 2008; Kelloway, 1998)

3.3.6.2 Statistical hypotheses and related fit statistics

When evaluating model fit, the first hypothesis that must be tested is that the model fits the population perfectly. This hypothesis reads as follows:

$$H_0: \Sigma = \Sigma(\Theta)$$

The measure that is used to assess perfect fit is the overall fit measure, the Sattora-Bentler chi-square (χ^2) statistic (Diamantopoulos & Siguaw, 2000, p.82). If the chi-square statistic is significant ($p < .01$), the null hypothesis of perfect fit is rejected (Jaccard & Wan, cited in Diamantopoulos & Siguaw, 2000, p.82). This implies that the model is not adequate and should be rejected. Diamantopoulos and Siguaw (2000, pp.83 - 84), however, caution against an early rejection of the model based on the chi-square statistic. Any model developed in research is at best an estimate of what takes place in the population and it is therefore unlikely that a model would show perfect fit (Diamantopoulos & Siguaw, 2000, p.84). Furthermore, the chi-square statistic is very sensitive to aspects such as sample size (Diamantopoulos & Siguaw, 2000, p.84).

If the hypothesis of perfect fit is rejected, Diamantopoulos and Siguaw (2000, p.84) suggest that the chi-square statistic is then used as a measure of the goodness-of-fit of the model. The degree of fit is determined by dividing χ^2 by the degrees of freedom. The degrees of freedom (df) serve as a benchmark by which to judge whether χ^2 is large or small (Jöreskog & Sörbom, cited in Diamantopoulos & Siguaw, 2000, p.83). When χ^2/df results in values between 2 and 5, a good fit is indicated (Carmines & Mclver; Wheaton et al., cited in Diamantopoulos & Siguaw, 2000, p.83).

The second overall fit measure used to assess model fit is the root mean square error of approximation (RMSEA). Just like the chi-square statistic, the RMSEA measures how well the model would fit the population covariance matrix, however, it does this per degree of freedom and thus takes the complexity of the model into account (Diamantopoulos & Siguaw, 2000, p.85). Of all the fit indices, the RMSEA is regarded as one of the most informative (Diamantopoulos & Siguaw, 2000, p.85).

When applying the RMSEA, the exact fit hypothesis (shown below) postulates that the model accurately fits the population covariance matrix (Diamantopoulos & Siguaw, 2000, p.85). The exact fit and alternate exact fit hypotheses are shown below:

$$H_0: \text{RMSEA} = 0$$

$$H_a: \text{RMSEA} > 0$$

Assuming the overall model does not fit accurately, the close fit hypothesis, which provides a 90% confidence interval for RMSEA, is tested (Diamantopoulos & Siguaw, 2000, p.85). The close-fit and close-fit alternate hypotheses read as follows:

$$H_0: \text{RMSEA} < .05$$

$$H_a: \text{RMSEA} \geq .05$$

Third, the RMR and SRMR, which are overall fit measures were applied. These fit indices represent the “square root of the difference between the residuals of the sample covariance matrix and the hypothesised covariance model” (Hooper et al., 2008, p.54). Low values for RMR are indicative of good fit. “The standardised residuals are the fitted residuals divided by their estimated standard errors” (Diamantopoulos & Siguaw, 2000, p.87). Standardised RMR values range from zero to 1, where zero is considered to represent perfect fit, values between zero and .05 indicate acceptable fit and values $\geq .05$ and $\leq .08$ indicate acceptable fit (Hu & Bentler, cited in Hooper et al., 2008). (Diamantopoulos & Siguaw, 2000, p.87).

The fourth fit measure used was the goodness-of-fit (GFI) index. This is an absolute fit measure in that it assesses the extent to which the “covariances predicted from the parameter estimates reproduce the sample covariances” (Diamantopoulos & Siguaw, 2000, p.87). Values greater than 0.9 indicate good fit (Diamantopoulos & Siguaw, 2000, p.87).

Finally, a set of relative fit indices were applied. The relative fit indices show the extent to which the fit of a model improves when compared to a model that proposes no relationship between the variables making up the model (Kelloway 1998). Values close to 1 (preferably above .9) show good fit (Diamantopoulos & Siguaw, 2000, p.88).

3.3.6.3 Statistical hypotheses of the PLS, ancillary scales and structural model

In this study, the fit of six models had to be evaluated. During this evaluation, the RMSEA was used as a fit statistic. Based on the explanation of the RMSEA fit statistic above, hypotheses

for exact and alternate exact fit, and close fit and alternate close fit had to be postulated for each of the models to be measured. These hypotheses, and the model they relate to, are shown in Table 3.10.

Table 3.10 *Statistical hypotheses relating to model fit*

Model to be evaluated	Exact fit hypothesis	Alternate exact fit hypothesis	Close fit hypothesis	Alternate close fit hypothesis
PLS Measurement Model (Hypotheses 3 and 4)	H ₀₃ : RMSEA = 0	H _{a3} : RMSEA > 0	H ₀₄ : RMSEA < .05	H _{a4} : RMSEA ≥ .05
Adapted MCI Measurement Model (Hypotheses 5 and 6)	H ₀₅ : RMSEA = 0	H _{a5} : RMSEA > 0	H ₀₆ : RMSEA < .05	H _{a6} : RMSEA ≥ .05
LTS Measurement Model (Hypotheses 7 and 8)	H ₀₇ : RMSEA = 0	H _{a7} : RMSEA > 0	H ₀₈ : RMSEA < .05	H _{a8} : RMSEA ≥ .05
OCBS Measurement Model (Hypotheses 9 and 10)	H ₀₉ : RMSEA = 0	H _{a9} : RMSEA > 0	H ₀₁₀ : RMSEA < .05	H _{a10} : RMSEA ≥ .05
Measurement Model underlying the Structural Model (Hypotheses 11 and 12)	H ₀₁₁ : RMSEA = 0	H _{a11} : RMSEA > 0	H ₀₁₂ : RMSEA < .05	H _{a12} : RMSEA ≥ .05
Structural Model (Hypotheses 13 and 14)	H ₀₁₃ : RMSEA = 0	H _{a13} : RMSEA > 0	H ₀₁₄ : RMSEA < .05	H _{a14} : RMSEA ≥ .05

3.3.7 Phase 6a: Evaluation of the fit of the measurement model of the PLS

CFA was utilised to determine the extent to which the underlying data fitted the measurement model of the PLS and thereby evaluated the construct validity of the PLS. The null and alternate hypotheses for exact fit (H₀₃ and H_{a03}) and close fit (H₀₄ and H_{a04}) were tested, using the completely standardised solution in LISREL. A range of additional goodness-of-fit indices, as described in Table 3.9 were utilised to assess the model's fit.

3.3.8 Phase 6b: Validation of the measurement model's paths

In addition to evaluating the fit of the PLS's measurement model fit using the goodness-of-fit indices, validity of the measurement model's hypothesised path-coefficients was also assessed. This was done by examining the magnitude and significance of the paths between the dimensions of the PLS and their related items. This relationship is captured in Equation 3.1³, depicted under Section 3.3.1.5.

Equation 1 implies that if X (the items, or indicators, of the scale) is a valid measure of the exogenous variable (the dimensions of the scale) represented by ξ (ξ), then the direct relationship between X and ξ should be sufficiently large (Diamantopoulos & Siguaw, 2000, p.89). This relationship is depicted by λ (λ) and was measured by analysing the standardised indicator loadings of the items on their related PLS dimensions. These loadings should be significant ($p < .05$) and large ($\lambda_{ij} \geq .50$) (Diamantopoulos & Siguaw, 2000, p.89; MacKenzie et al., 2011, p.315). The loadings were read from the LAMBDA-X matrix of the LISREL output. This matrix contains the coefficients that link the variables (X) to the scale dimensions (ξ) (Diamantopoulos & Siguaw, 2000, pp.45 & 89).

3.3.9 Phase 6c: Power assessment of the PLS measurement model

The statistical power of a model relates to the probability of not rejecting an incorrect model. When using the fit indices, such as the chi-square, to evaluate the fit of a model, the focus is on probability of making a Type I error, i.e. rejecting a correct model. The probability of doing this is "captured by the significance level, α , which is usually set at .05. A significant chi-square result indicates that if the null hypothesis is true (i.e. the model is correct in the population), the probability of incorrectly rejecting it is low" (Diamantopoulos & Siguaw, 2000, p.93). However, it is also possible that a researcher will not reject an incorrect model. This is known as a Type II error. The probability associated with this type of error is symbolised by β . "The probability of avoiding a Type II error is, therefore, $1 - \beta$ and it is this probability that indicates the power of the test" (Diamantopoulos & Siguaw, 2000, p. 93). The power of the test is therefore an indication of the likelihood of rejecting a false null hypothesis (i.e. the incorrect model) (Diamantopoulos & Siguaw, 2000, p. 93)

It is important to conduct a power assessment because sample size plays an important role in testing the fit of a model. When a model contains small specification errors, large sample sizes will magnify their effects, leading to the rejection of the null hypothesis. When a model

³ $X = \lambda\xi + \delta$ (Diamantopoulos & Siguaw, 2000, p.47)

contains large specification errors, small sample sizes will mask their effects leading to acceptance of the null hypothesis (Diamantopoulos & Siguaw, 2000, p. 94).

When calculating the power of a model, two types of calculations are performed. The first test relates to the test of exact fit and the second test relates to the test of close fit. The RMSEA statistic is used for both these calculations. (Diamantopoulos & Siguaw, 2000). "If the model fits the population perfectly, the error due to approximation is set at 0. If a model fits only approximately, the error due to approximation is set at .05" (Theron, 2016).

A specific value must be stated for the alternative hypothesis, H_a because power depends on a specific value of a parameter under the alternative hypothesis (Bollen, cited in Diamantopoulos & Siguaw, 2000, p. 95). In the test relating to exact fit, RMSEA = .05 is used and in the test relating to close test, RMSEA = .08 is used, as this is the upper limit for reasonable fit (Diamantopoulos & Siguaw, 2000, p.95).

The power assessment was conducted via a syntax developed by Preacher and Coffman (2006), which is available at <http://quantpsy.org>.

3.3.10 Phase 7: Evaluation of the fit of the measurement models of the ancillary scales

As mentioned above, the researcher desired to include scales in the structural model which showed a good fit. When scales have good fit, the likelihood that the items accurately describe the construct they measure, is high. As such, the measurement models of the ancillary scales to be used in the structural model were tested for fit using the data collected from the sample.

These scales were tested for reliability in Phase 5 and were tested for model fit, using CFA, in this phase. During this phase, the null and alternate hypotheses for exact fit, (H_{05} and H_{a05} , H_{07} and H_{a07} , H_{09} and H_{a09}) and the hypotheses for close and alternate close fit (H_{06} and H_{a06} , H_{08} and H_{a08} , H_{010} and H_{a10}) were tested for the adapted MCI, LTS and OCBS respectively. In addition, a range of goodness-of-fit indices, as discussed in Table 3.9 were utilised to draw conclusions about the fit of the various models.

3.3.11 Structural equation modelling

Once it was established that the PLS provided a construct valid and reliable measure of principled leadership, the researcher conducted an analysis to determine the extent to which the paths theorised in the structural model held true. This was done through structural equation

modelling (SEM). SEM allows researchers to test hypotheses about the strength of the relationship between two or more latent variables (Weston & Gore, 2006). The latent variables in this study were moral intelligence, principled leadership, trust in the leader and OCB. These variables were each measured by a scale and the results of these scales were correlated with each other to determine the strength of the hypothesised relationships, using CFA as the statistical technique.

The steps which were followed in the research plan for the structural model are listed below (Diamantopoulus & Sigauw, 2000):

- Model specification
- Testing model fit
- Model modification

Model specification is a process of stipulating the relationships which exist among the latent variables (Weston & Gore, 2006, p.729). Model specification had to be done in two steps namely:

- 1) specifying the measurement model underlying the structural model (Phase 8 of the research plan) and
- 2) specifying the structural model (Phase 9 of the research plan).

3.3.12 Phase 8: Specification the overall measurement model underlying the structural model

Specifying the measurement model required that the factor loadings of the items of the various scales onto their respective scales, be examined. Rather than having the individual items load onto their respective scale, the items were randomly grouped into item parcels, which formed the indicator variables that loaded onto the respective scales. The detail of how the items were parcelled is presented in Appendix I. For this process to yield good fit results, logic dictates that it is important that the items accurately describe the construct they measure, so that even when they are randomly grouped into parcels, the items will still represent a good measure of the construct. It is for this reason that the reliability and measurement model fit analyses of the ancillary scales had to be conducted.

Parcelling is a statistical technique commonly used in SEM. A parcel is an aggregate indicator which is made up of the sum of at least two items (Little, Cunningham, Shahar & Widaman, 2002). Models based on parcelled data require fewer estimated parameters in defining the construct and in representing the entire model, making the data more parsimonious (Little et

al., 2000, p.155). There are also “fewer chances for residuals to be correlated or dual loadings to emerge” (Little et al., 2000, p.155) and parcelling leads to reduced sampling error (MacCallum et al., cited in Little et al., 2000, p.155).

The overall measurement model for SEM was specified as depicted in Figure 3.2.

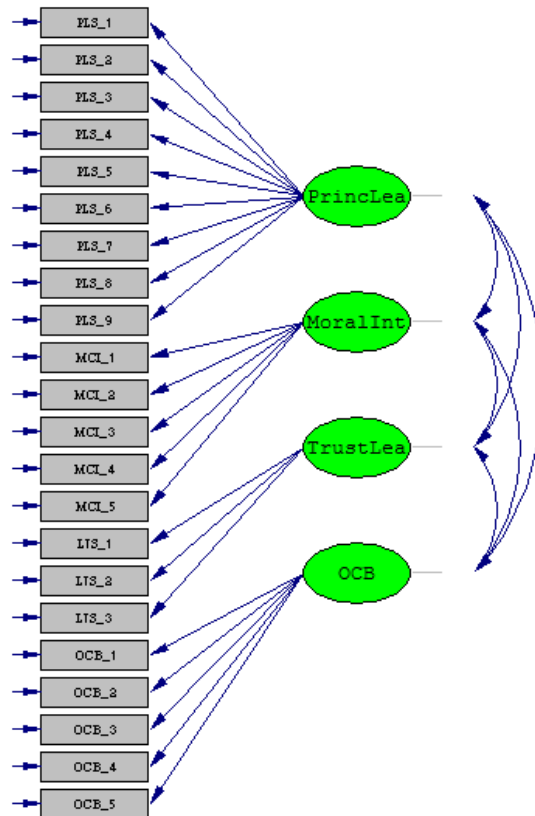


Figure 3.2. Overall measurement model for SEM

3.3.13 Phase 9: Specification the structural model

The purpose of specifying the structural model was to stipulate the relationships which were postulated in the second substantive research hypothesis stated in Section 3.2: “The structural model provides a valid description of the way principled leadership is embedded in a larger nomological network by describing the antecedents and outcomes of principled leadership, as theorised in the literature review”.

These path relationships, which were theorised through the literature review, are indicated in the structural model repeated here as Figure 3.3.

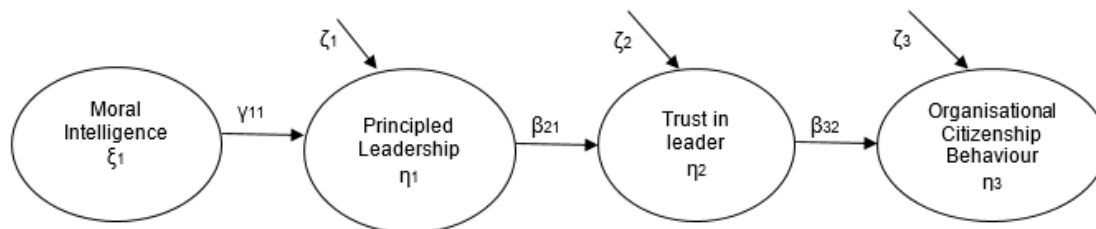


Figure 3.3. Structural model

Moral Intelligence forms the exogenous (independent) variable depicted as the symbol Ksi (ξ). Principled leadership, trust in the leader and OCB are endogenous (dependent) variables and carry the symbol Eta (η). The symbol Gamma (γ) indicates the path between the exogenous and the first endogenous variable, while Beta (β) symbolises the path between the remaining endogenous variables. Finally, Zeta (ζ) depicts residual error in the endogenous variables (Diamantopoulus & Siguaw, 2000, p.47).

The above structural diagram translates into Equation 3.2.

Equation 3.2. Structural Model Equation

$$\eta = B\eta + \Gamma\xi + \zeta \text{ (Diamantopoulus \& Siguaw, 2000, p.46).}$$

3.3.14 Phase 10a: Evaluation of the fit of the overall measurement model underlying the structural model

Model fit is extensively explained in Section 3.3.6 above. CFA was utilised to determine the extent to which the underlying data fitted the measurement model of the structural model. The null and alternate hypotheses for exact fit (H_{011} and H_{a11}) and the null and alternate hypotheses for close fit (H_{012} and H_{a12}) were tested. A range of additional goodness-of-fit indices, as discussed in Table 3.9 were utilised to assess the model's fit.

3.3.15 Phase 10b: Evaluation of the fit of the structural model

CFA was utilised to determine the extent to which the underlying data fitted the structural model, thereby providing input into the construct validity of the structural model. The null and alternate hypotheses for exact fit (H_{013} and H_{a13}) and the null and alternate hypotheses for close fit (H_{014} and H_{a14}) were tested. A range of additional goodness-of-fit indices, as discussed in Table 3.9 were utilised to assess the model's fit.

3.3.16 Phase 10c: Evaluation of the validity of the hypothesised paths of the structural model

Even if the structural model shows good fit, it does not yet prove that the relationships between the latent variables of the structural model, as theorised from the literature, are supported by the data (Diamantopoulos & Siguaw, 2000, p.93). An analysis of the magnitude of the path coefficients between the latent variables is required to prove this.

The substantive research hypotheses which postulate the relationships between the latent variables to be assessed are listed below:

Substantive research hypothesis 15: Moral intelligence (ξ_1) has a significantly positive effect on principled leadership (η_1).

Substantive research hypothesis 16: Principled leadership (η_1) has a significantly positive effect on trust in the leader (η_2).

Substantive research hypothesis 17: Trust in the leader (η_2) has a significantly positive effect on organisational citizenship behaviour (η_3).

These substantive research hypotheses translate into the path coefficient statistical hypotheses depicted in the Table 3.11.

Table 3.11 Path coefficient statistical hypotheses

Hypothesis 15:	Hypothesis 16:	Hypothesis 17:
$H_{015}: \gamma_{11} = 0$	$H_{016}: \beta_{21} = 0$	$H_{017}: \beta_{32} = 0$
$H_{a15}: \gamma_{11} > 0$	$H_{a16}: \beta_{21} > 0$	$H_{a17}: \beta_{32} > 0$

The matrices in the LISREL output which provided the required information about the path coefficients of the structural model are:

- 1) The GAMMA matrix, which provides the path coefficient between moral intelligence (ξ_1) and principled leadership (η_1), and
- 2) The BETA matrix, which provides information about the strength of the effect of
 - a) principled leadership (η_1) on trust in the leader (η_2), and
 - b) trust in the leader (η_2) on OCB (η_3).

3.3.17 Phase 10d: Power assessment

The purpose of power assessment was explained in detail in Phase 6c. As the fit of the structural model was the ultimate test of the second substantive research hypothesis, it was important to conduct a power assessment on the structural model to confirm that the correct decisions had been made regarding the fit of the model. The same procedures as were discussed in Phase 6c were followed in this phase.

3.3.18 Phase 10e: Model modification

Following the assessment fit, the model modification solution was examined to determine if LISREL recommended any modifications to the structural model. Modifications were, however, only to be considered if they could be justified by the theory underlying the PLS (Diamantopoulos & Siguaw, 2000, p.8).

3.4 Evaluation of Research Ethics

An ethical risk in human, non-medical research is defined as follows by the ethical clearance Standard Operating Procedures for Humanities of Stellenbosch University:

“An action, procedure or method used in the research and in its reporting, that can compromise the dignity, rights, safety, and well-being of participants in research, or those affected by that research” (Standard Operating Procedures, 2011, p.32).

When basing research on empirical behaviour, as was done in this study, it is possible that ethical risks such as those listed above, may arise. The purpose of reflecting on these ethical risks is to determine whether the benefits which will accrue to society because of the research, will outweigh the potential ethical risks. The researcher is of the opinion that the need for principled leadership in South Africa, as outlined in Chapter 1, and the resulting importance of developing a scale which can predict principled leadership, justifies the potential ethical risks involved in the research.

The researcher, however, acknowledges that the dignity, rights, safety and well-being of participants should be protected as far as possible during the research process and that risks should be mitigated. As such, the researcher adhered to the guidelines provided by the ethical clearance Standard Operating Procedures of Stellenbosch University, as well as provisions in Annexure 12 of the Health Professions Act (Act no. 56 of 1974) of the Republic of South Africa. These guidelines and provisions are outlined below.

3.4.1 Institutional approval

The following requirements were followed with regards to obtaining institutional consent:

- 1) Written approval was obtained from the host organisations concerned prior to conducting research;
- 2) The host institutions were provided with accurate information about the purpose and intended outcomes of the research
- 3) The research was conducted in accordance with the research protocol approved by the host organisations.

3.4.2 Informed consent

Prior to commencing with the research, the researcher explained the objectives of the research and the method of data collection to each participant. The researcher obtained informed consent from each participant per the following guidelines of the Health Professions Act, Annexure 12, Section 89:

- 1) *“[The researcher] shall use language that is reasonably understandable to the research participant concerned in obtaining his or her informed consent.*
- 2) *Informed consent referred to in subrule (1) shall be appropriately documented, and in obtaining such consent the [researcher] shall –*
 - (a) *inform the participant of the nature of the research;*
 - (b) *inform the participant that he or she is free to participate or decline to participate in or to withdraw from the research;*
 - (c) *explain the foreseeable consequences of declining or withdrawing;*
 - (d) *inform the participant of significant factors that may be expected to influence his or her willingness to participate (such as risks, discomfort, adverse effects or exceptions to the requirement of confidentiality);*
 - (e) *explain any other matters about which the participant enquires;*
 - (f) *when conducting research with a research participant such as a student or subordinate, take special care to protect such participant from the adverse consequences of declining or withdrawing from participation;*
 - (g) *when research participation is a course requirement or opportunity for extra credit, give a participant the choice of equitable alternative activities; and*
 - (h) *in the case of a person who is legally incapable of giving informed consent, nevertheless –*
 - (i) *provide an appropriate explanation;*
 - (ii) *obtain the participants assent; and*

(iii) obtain appropriate permission from a person legally authorized to give such permission” (Health Professions Act, Annexure 12, Section 89).

3.4.3 Confidentiality of data collected and feedback provided

The data collected from participants was secured from improper access and was treated confidentially. Feedback was provided to participating organisations but results were presented in aggregate form only, to maintain the confidentiality of individual responses (Standard Operating Procedures, 2011, p.45). Ethical clearance was given by the ethical committee of Stellenbosch University.

3.5 Summary

The meaning of a construct lies in its internal structure and in the manner in which the construct is embedded in a larger nomological network of latent variables (Kerlinger & Lee, 2000). The purpose of this chapter was to provide an outline of the research methodology that was used to assess the validity of the internal structure of the PLS (i.e. its content and construct validity). This included content validation of the items, item analysis to determine the quality of the items and the internal reliability of the dimensions, and EFA to determine whether the factorial structure of the PLS could be validated, as hypothesised. CFA was utilised to corroborate the findings of the EFA through fitting of the PLS's measurement model.

Furthermore, the research methodology utilised to confirm the structural validity of the PLS through its interaction with other latent variables (moral intelligence, trust in the leader and OCB) within a larger nomological network, was discussed. This section of the research methodology explained how structural equation modelling was utilised to test the effect of the latent variables on each other, as inferred from the literature study.

The results obtained from various analyses conducted as part of the research plan will be reported in Chapter 4.

CHAPTER 4

RESEARCH RESULTS

4.1 Introduction

Chapter 3 provided the research plan that was followed to develop the items of the PLS and analyse the underlying data of the PLS's measurement model and the overall structural model. In this chapter the results of the statistical analyses performed will be presented and discussed.

To keep the information in this chapter consistent with the phases of the research plan discussed in Chapter 3, the same phase numbering will be used in the headings of this chapter as were used in Chapter 3. Phases excluded from this chapter, because they did not require statistical analysis, are:

Phase 1: Specification of the PLS

Phase 2: Specification of the ancillary scales

Phase 3: Sample selection and data collection

Phase 8: Specification of the overall measurement model underlying the structural model

Phase 9: Specification of the structural model

A summary of the phases of the research plan for which statistical analysis was required, and which will be discussed in this chapter, is provided in Table 4.1.

Table 4.1 *Research plan phases requiring statistical analysis*

Research plan phase	Method of analysis
Phase 4a: PLS item analysis	Internal reliability analysis utilising the SPSS reliability analysis
Phase 4b: PLS factor analysis	Exploratory factor analysis (EFA) utilising SPSS factor analysis
Phase 5: Reliability analysis of ancillary scales	SPSS reliability analysis
Phase 6a: Evaluation of the fit of the PLS's measurement model	Confirmatory factor analysis (CFA) using LISREL
Phase 6b: Validation of hypothesised paths of the PLS's measurement model	Analysis of the factor loadings presented in the LAMBDA-X matrix of the LISREL output
Phase 6c: Power assessment of the PLS's measurement model	Preacher and Coffman power assessment
Phase 7: Evaluation of the fit of the measurement models of the ancillary scales	CFA using LISREL

Phase 10a: Evaluation of the fit of the overall measurement model underlying the structural model	CFA using LISREL
Phase 10b: Evaluation of the fit of the structural model	CFA using LISREL
Phase 10c: Validation of the path coefficients of the hypothesised paths of the structural model	Analysis of the GAMMA and BETA matrices of the LISREL output
Phase 10d: Power assessment (structural model)	Preacher and Coffman power assessment
Phase 10e: Model modification	Analysis of the structural model modification indices of the LISREL output

Before discussing the data analysis, the issue of missing values must be addressed.

4.2 Missing Values

Missing values refers to data sets that are incomplete. Incomplete data sets cannot be used for analysis and must therefore be dealt with before conducting any analysis. In this case eight of 308 data sets were incomplete. The incomplete data sets were deleted, leaving 300 complete data sets to work with.

4.3 Phase 4a: Item Analysis of the PLS

Item analysis was conducted utilising the SPSS reliability analysis. As discussed in the Research Methodology, the purpose of item analysis is to establish the reliability of a scale, and to determine if any poor items are identified which should be considered for elimination from the scale.

The six subscales of the PLS all underwent item analysis. A detailed discussion of the item analysis of each of these subscales follows. The ideal statistics a researcher should look out for are recapped below:

- 1) The Cronbach's alpha for any given subscale should ideally be $\geq .70$ (Nunnally, 1978).
- 2) Item-total Statistics show the change in the statistics listed below, if a problematic item is deleted:
 - a) the item total correlations will increase. The problematic items will correlate poorly with the scale score and other items because they don't reflect the same underlying factor. The corrected item-total correlation indicates the extent to which each item correlates with the total score of the items, excluding itself

(DeVellis, 2003). The ideal item-total correlation should be $> .30$ to indicate that the item is measuring the specific scale (Pallant, 2010).

- b) the Cronbach Alpha of the subscale will increase (DeVellis, 2003)
- c) the inter-item correlations will increase

The discussion will provide feedback of the results per subscale on each of the above areas.

4.3.1 Item Analysis: Internalised Values

The subscale Internalised Values comprised 13 items. The Cronbach's alpha for Internalised Values was an excellent .941 (Nunnally, 1978). The item-total statistics revealed that the corrected item-total correlations were all above the desired correlation value of .30, indicating that all items reflect the same underlying factor (Pallant, 2010). This is further supported by the finding that the inter-item correlations were greater than 0.30 (mean = .56). Finally, the only item which would increase the Cronbach's alpha for the subscale, if removed, would be item PCL56, "My manager openly discussed with me, what is going on in the organisation". The increase in the alpha value would, however, be very slight from .941 to .942. This change is too insignificant to warrant the removal of the item from the subscale. Subsequently, no items were identified for exclusion.

The detail of the above results is provided in Table 4.2.

Table 4.2. *Item analysis results for subscale: Internalised Values*

Reliability Statistics							
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items		N of Items				
.941	.943		13				

Scale Statistics			
Mean	Variance	Std. Deviation	N of Items
52.78	77.637	8.811	13

Summary Item Statistics							
	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	4.060	3.720	4.317	.597	1.160	.034	13
Item Variances	.784	.558	1.099	.541	1.969	.024	13
Inter-Item Correlations	.558	.368	.747	.379	2.030	.007	13

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
PCL1	48.55	66.188	.795	.675	.934
PCL7	48.63	65.397	.783	.657	.935
PCL13	48.92	64.847	.716	.546	.937
PCL19	48.73	65.320	.820	.693	.933
PCL25	48.69	66.762	.769	.628	.935
PCL31	48.83	66.153	.734	.558	.936
PCL37	49.06	65.662	.721	.567	.937
PCL41	48.74	68.205	.644	.495	.939
PCL45	48.54	64.851	.830	.704	.933
PCL49	48.63	67.312	.680	.531	.938
PCL53	48.57	68.226	.659	.521	.938
PCL56	48.98	66.498	.587	.373	.942
PCL58	48.46	68.778	.670	.513	.938

4.3.2 Item analysis: Self Awareness

The subscale Self Awareness consisted of 10 items. An excellent (Nunnally, 1978) Cronbach's alpha value of .929 was obtained. The item-total statistics revealed that the corrected item-total correlations were all above the desired correlation value of .30 (Pallant, 2010). None of the items correlated poorly with the remainder of the items (inter-item $r > .30$ in all cases). The Cronbach's alpha of .929 would decrease if any of the items were excluded. On balance, the evidence suggested that none of the items were poor and none should therefore be eliminated.

Details of the abovementioned results are presented in Table 4.3.

Table 4.3. *Item analysis results for subscale: Self-awareness*

Reliability Statistics			
Cronbach's Alpha Based on Standardized			
Cronbach's Alpha	Items	N of Items	
.929	.930	10	

Scale Statistics			
Mean	Variance	Std. Deviation	N of Items
38.85	48.077	6.934	10

Summary Item Statistics							
	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	3.885	3.513	4.327	.813	1.231	.058	10
Item Variances	.787	.507	1.080	.573	2.129	.037	10
Inter-Item Correlations	.569	.389	.706	.317	1.815	.007	10

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
PCL2	34.52	41.990	.595	.459	.928
PCL8	35.05	38.011	.779	.626	.919
PCL14	34.73	41.865	.619	.471	.927
PCL20	35.12	37.792	.773	.627	.919
PCL26	35.33	37.574	.740	.564	.922
PCL32	35.16	38.128	.737	.597	.922
PCL38	35.13	38.780	.772	.645	.920
PCL42	34.83	39.858	.740	.614	.921
PCL46	34.90	39.185	.772	.641	.920
PCL50	34.85	39.298	.734	.588	.922

4.3.3 Item analysis: Principled Strategist

The subscale Principled Strategist was made up of six items. The Cronbach's alpha for Principled Strategist was good ($\alpha = .878$) (Nunnally, 1978). The item-total statistics revealed that the corrected item-total correlations were all above the desired correlation value of .30 (Pallant, 2010). The inter-item correlations were above the desire .30 for all items. The Cronbach's alpha would have increased from .878 to .886 if the item PCL27 "My manager ensures that the strategy is not achieved by methods that are unethical (e.g. dishonest, harmful or unsafe, motivated by greed, benefitting only a few)" had been deleted. This item also showed the weakest item-total correlation ($r = .515$), which was, however, still substantial. Taking the above into account, as well as the fact that the item was deemed useful for evaluating the subscale Principled Strategist, neither this item nor any other item was identified for exclusion.

Detail of these results is provided in the Table 4.4

Table 4.4. *Item analysis results for subscale: Principled Strategist*

Reliability Statistics							
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items					N of Items	
.878	.881					6	
Scale Statistics							
Mean	Variance	Std. Deviation			N of Items		
23.92	16.780	4.096			6		
Summary Item Statistics							
	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	3.987	3.793	4.183	.390	1.103	.024	6
Item Variances	.751	.572	.853	.282	1.493	.011	6
Inter-Item Correlations	.552	.361	.671	.309	1.855	.010	6
Item-Total Statistics							
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted		
PCL3	19.88	11.901	.693	.519	.855		
PCL9	19.92	11.766	.757	.603	.845		
PCL15	19.84	12.215	.756	.575	.848		
PCL21	20.13	11.752	.659	.483	.862		
PCL27	19.74	12.648	.515	.285	.886		
PCL33	20.11	11.342	.756	.591	.844		

4.3.4 Item analysis: Other-Centred

The subscale Other-Centred comprised 11 items. An excellent Cronbach's alpha value of .917 (Nunnally, 1978) was obtained. The item-total statistics revealed that the corrected item-total correlations were all above the desired correlation value of 0.30 (Pallant, 2010). The inter-item correlations were above the desired value of .30 for all items. The only item, if deleted, that would have increased the Cronbach's alpha was the item PCL39, "My manager allows me to solve problems on my own instead of telling me what to do". If deleted, the alpha value would have increased from .917 to .920. This small increase in alpha did not justify the removal of the item. All items were thus retained.

Details of the abovementioned results are presented in Table 4.5.

Table 4.5. *Item analysis results for subscale: Other-centred*

Reliability Statistics							
Cronbach's Alpha Based on Standardized							
Cronbach's Alpha	Items			N of Items			
.917	.916			11			

Scale Statistics							
Mean	Variance	Std. Deviation			N of Items		
44.13	54.785	7.402			11		

Summary Item Statistics							
	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	4.012	3.730	4.193	.463	1.124	.017	11
Item Variances	.830	.634	1.041	.406	1.641	.012	11
Inter-Item Correlations	.499	.214	.673	.459	3.147	.010	11

Item-Total Statistics						
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	
PCL4	39.96	47.072	.648	.455	.910	
PCL10	40.17	44.779	.701	.582	.908	
PCL16	40.17	44.420	.761	.610	.905	
PCL22	40.40	44.235	.701	.571	.908	
PCL28	39.94	46.605	.627	.426	.911	
PCL34	40.17	45.089	.699	.512	.908	
PCL39	40.04	48.510	.450	.266	.920	
PCL43	40.18	43.865	.809	.677	.902	
PCL47	40.19	46.195	.653	.444	.910	
PCL51	40.05	45.978	.669	.577	.909	
PCL54	40.07	45.450	.703	.553	.908	

4.3.5 Item analysis: Stewardship

The subscale Stewardship was made of up 12 items. The Cronbach's alpha for Stewardship was excellent ($\alpha = .895$) (Nunnally, 1978). The item-total statistics revealed that the corrected item-total correlations were all above the desired correlation value of .30 (Pallant, 2010). The mean (.418) inter-item correlation was also acceptable ($>.30$). However, the minimum value of the inter-item correlations was of concern (.256). Finally, if any of the items had been

deleted, the Cronbach's alpha would have decreased. This was not desirable and confirmed that all items should be retained. Details of these results are shown in the Table 4.6.

Table 4.6. *Item analysis results for subscale: Stewardship*

Reliability Statistics							
Cronbach's Alpha Based on Standardized							
Cronbach's Alpha	Items			N of Items			
.895	.896			12			
Scale Statistics							
Mean	Variance	Std. Deviation			N of Items		
47.82	49.811	7.058			12		
Summary Item Statistics							
	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	3.985	3.763	4.253	.490	1.130	.021	12
Item Variances	.744	.511	1.070	.559	2.095	.030	12
Inter-Item Correlations	.418	.256	.666	.410	2.597	.009	12
Item-Total Statistics							
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted		
PCL5	43.77	41.337	.650	.484	.885		
PCL11	43.71	42.489	.594	.425	.888		
PCL17	43.57	44.139	.544	.390	.890		
PCL23	43.89	43.427	.566	.531	.889		
PCL29	43.83	43.803	.498	.471	.892		
PCL35	43.94	42.034	.671	.586	.884		
PCL40	44.01	42.592	.630	.512	.886		
PCL44	43.81	41.191	.613	.388	.887		
PCL48	43.86	41.461	.713	.545	.882		
PCL52	43.95	40.031	.665	.541	.884		
PCL55	43.66	43.509	.559	.397	.890		
PCL57	44.06	41.026	.619	.459	.887		

4.3.6 Item analysis: Balanced Processing

The subscale Balanced Processing consisted of six items. The subscale yielded a good Cronbach's alpha of .888 (Nunnally, 1978). The corrected item-total correlations, as well as the inter-item correlations were moderate to high and above the minimum acceptable value of

.30 (Pallant, 2010). Lastly, the Cronbach's alpha of .888 would have decreased if any of the items had been deleted. This was undesirable. Accordingly, all items were retained. Details of these results are presented in Table 4.7.

Table 4.7. *Item analysis results for subscale: Balanced Processing*

Reliability Statistics							
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items				N of Items		
.888	.889				6		

Scale Statistics							
Mean	Variance	Std. Deviation			N of Items		
23.10	19.776	4.447			6		

Summary Item Statistics							
	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	3.850	3.680	4.027	.347	1.094	.019	6
Item Variances	.856	.755	.974	.219	1.290	.007	6
Inter-Item Correlations	.571	.447	.665	.218	1.489	.004	6

Item-Total Statistics						
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted	
PCL6	19.42	13.609	.713	.535	.868	
PCL12	19.25	13.732	.713	.533	.868	
PCL18	19.11	14.221	.670	.474	.875	
PCL24	19.27	13.885	.756	.596	.861	
PCL30	19.37	13.927	.760	.582	.861	
PCL36	19.07	14.864	.620	.409	.882	

This concluded the internal reliability analysis of the PLS. In summary, all dimensions of the PLS yielded pleasing Cronbach alpha values, ranging from .878 to .941. and no items were identified for elimination.

As the PLS was a new scale, it was prudent to conduct exploratory factor analysis (EFA) on the subscales of the PLS to test that each subscale was unidimensional, i.e., that all items loaded on one factor per subscale, as theorised, rather than on multiple factors. The EFA of the PLS will thus be discussed next.

4.4 Phase 4b: Factor Analysis of the PLS

The purpose of EFA is to establish construct validity of a scale. This is done by determining the number of factors underlying the items. The following guidelines were used to determine the number of underlying factors for each subscale:

1. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy should be at least >0.60 to render the subscale factor analysable (Pallant, 2010).
2. Only one factor should have an eigenvalue greater than 1 when total variances are explained through principal axis factoring (DeVellis, 2003).
3. The eigenvalues of the factor matrix should equal 1.0 (Kaiser, cited in DeVellis, 2003) and the proportion of variance (λ_i^2) explained by the single factor should be 0.50 or higher (Theron, 2016).
4. The factor loadings of the oblimin rotation on the correlation matrix should be significant at $> .40$ (Hinkin, 1998, p.112).
5. Only one factor should be plotted to the left of the 'elbow' of curve on the scree test (DeVellis, 2003).

SPSS was utilised to conduct the EFA. The researcher will report on the results relating to the above five guidelines for each subscale.

4.4.1 Factor analysis: Internalised Values

The assumption that all items of the subscale Internalised Values load on a single factor of Principled Leadership, was investigated. The results were as follows:

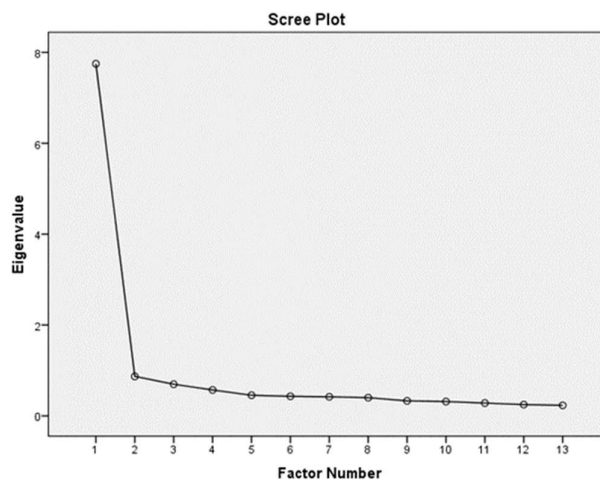
1. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was $.961 (>.60)$ (Pallant, 2010) which rendered the subscale factor analysable.
2. Only one factor had an eigenvalue greater than 1 (in this case the value was 7.749) when total variances were explained through principal axis factoring. This indicated one underlying factor (DeVellis, 2003).
3. The factor matrix indicated a single underlying factor and the proportion of variance explained by the single factor was greater than 0.50 (59.6%) (Theron, 2016) for all items of the subscale.
4. The factor loadings of the unrotated factor matrix were all significant at >0.40 (Hinkin, 1998).
5. The scree plot indicated a single factor (DeVellis, 2003).

Details of these results are provided in Table 4.8.

Table 4.8. Factor Analysis: Internalised Values

KMO and Bartlett's Test						
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.						.961
Bartlett's Test of Sphericity	Approx. Chi-Square		2588.435			
	df		78			
	Sig.		.000			
Total Variance Explained						
Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.749	59.611	59.611	7.334	56.412	56.412
2	.869	6.687	66.298			
3	.697	5.363	71.661			
4	.570	4.387	76.048			
5	.454	3.494	79.542			
6	.431	3.312	82.854			
7	.420	3.227	86.081			
8	.401	3.086	89.167			
9	.331	2.543	91.710			
10	.315	2.422	94.132			
11	.283	2.175	96.307			
12	.248	1.904	98.212			
13	.232	1.788	100.000			

Factor Matrix ^a	
	Factor
	1
PCL1	.823
PCL7	.811
PCL13	.738
PCL19	.848
PCL25	.796
PCL31	.758
PCL37	.741
PCL41	.665
PCL45	.858
PCL49	.700
PCL53	.684
PCL56	.603
PCL58	.690



4.4.2 Factor analysis: Self-awareness

The results of the investigation to confirm the assumption that all items of the subscale Self-awareness load on a single factor, are shown below:

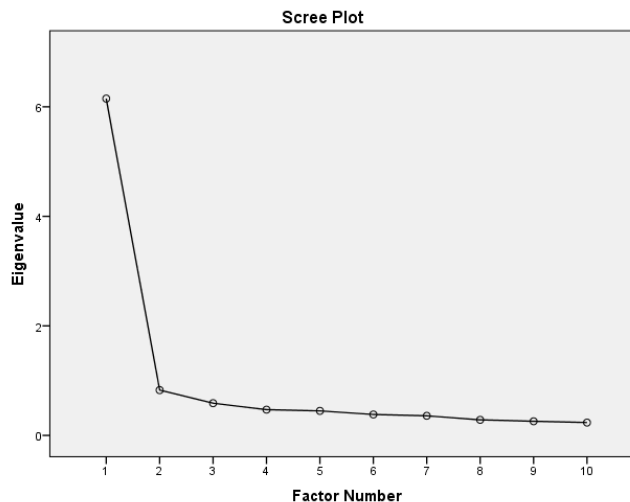
1. A value of .933 was obtained for the Kaiser-Meyer-Olkin Measure of Sampling Adequacy. Because this value was greater than .60 (Pallant, 2010), the subscale was deemed factor-analysable.
2. One underlying factor was identified in that only one factor had an eigenvalue greater than 1 (DeVellis, 2003), in this case 6.150, when variances were explained through principle axis factoring.
3. In the factor matrix, all items of the subscale had factor loadings greater than 0.50 (Theron, 2016). The factor matrix, furthermore, indicated a single underlying factor for this subscale.
4. The unrotated factor matrix indicated that the factor loadings for all items were significant at $> .40$ (Hinkin, 1998).
5. A single factor (DeVellis, 2003) was shown to the left of the 'elbow' of the scree plot.

Details of these results are provided in Table 4.9.

Table 4.9. *Factor Analysis: Self-awareness*

KMO and Bartlett's Test						
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.						.933
Bartlett's Test of Sphericity	Approx. Chi-Square				1920.287	
	df				45	
	Sig.				.000	
Total Variance Explained						
Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.150	61.499	61.499	5.737	57.368	57.368
2	.827	8.270	69.768			
3	.588	5.882	75.651			
4	.470	4.698	80.349			
5	.448	4.476	84.825			
6	.382	3.824	88.650			
7	.358	3.575	92.225			
8	.285	2.846	95.070			
9	.258	2.582	97.652			
10	.235	2.348	100.000			
Extraction Method: Principal Axis Factoring.						

Factor Matrix ^a	
	Factor
	1
PCL8	.808
PCL20	.803
PCL38	.802
PCL46	.802
PCL42	.768
PCL26	.768
PCL32	.767
PCL50	.766
PCL14	.644
PCL2	.619



4.4.3 Factor analysis: Principled Strategist

The results for the unidimensionality test of the subscale Principle Strategist, are as follows:

1. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was .891 (>.60) (Pallant, 2010) which indicated that the subscale was factor analysable.
2. A single underlying factor was identified by only one factor (DeVellis, 2003) having an eigenvalue greater than 1 (Eigenvalue total = 3.789), when total variance was explained through principle axis factoring.
3. The proportion of variance explained by the single factor (63.1%), was greater than 0.50 (Theron, 2016) for all items of the subscale.
4. In the unrotated factor matrix, the factor loadings were all significant at >.40 (Hinkin, 1998).
5. The scree plot indicated a single factor (DeVellis, 2003) to the left of the curve's 'elbow'.

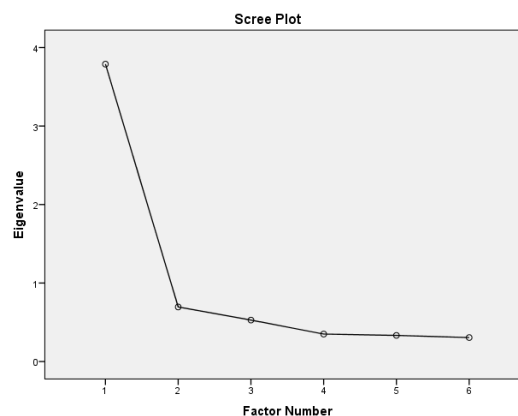
Details of these results are provided in the Table 4.10.

Table 4.10. Factor Analysis: Principled Strategist

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.891
Bartlett's Test of Sphericity	Approx. Chi-Square	890.471
	df	15
	Sig.	.000

Total Variance Explained						
Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.789	63.146	63.146	3.379	56.324	56.324
2	.695	11.584	74.730			
3	.528	8.801	83.531			
4	.350	5.832	89.362			
5	.333	5.549	94.912			
6	.305	5.088	100.000			

Factor Matrix ^a	
	Factor
	1
PCL9	.824
PCL33	.817
PCL15	.813
PCL3	.749
PCL21	.712
PCL27	.549



4.4.4 Factor analysis: Other-Centred

It was assumed that all items of the subscale Other-Centred load on a single factor of Principled Leadership. The investigation of this assumption, yielded the following results:

1. The subscale was considered factor analysable as the Kaiser-Meyer-Olkin Measure of Sampling Adequacy was .936, which was greater than the minimum desired value of .60 (Pallant, 2010).
2. Only one factor had an eigenvalue greater than 1 (DeVellis, 2003), valued at 6.052, when total variances were explained through principle axis factoring. This represented one underlying factor.
3. A single underlying factor was shown in the factor matrix and the proportion of variance explained by this single factor was greater than 0.50 (Theon, 2016) for all items of the subscale.
4. The factor loadings in the unrotated factor matrix were all significant at $> .40$ (Hinkin, 1998)
5. The scree plot yielded a single factor (DeVellis, 2003).

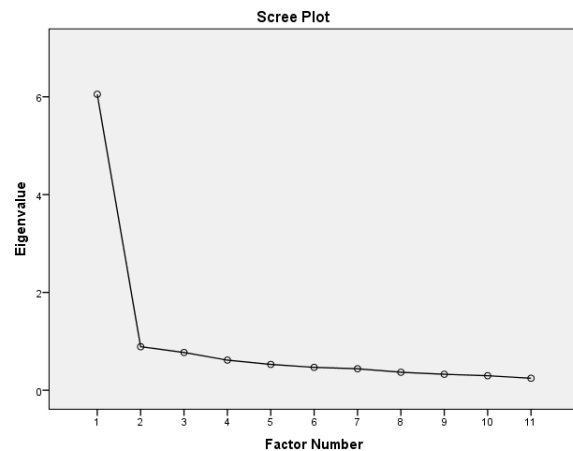
Details of these results are provided in Table 4.11.

Table 4.11. Factor Analysis: Other-Centred

KMO and Bartlett's Test						
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.						.936
Bartlett's Test of Sphericity	Approx. Chi-Square					1774.297
	df					55
	Sig.					.000

Total Variance Explained						
Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.052	55.020	55.020	5.587	50.788	50.788
2	.890	8.093	63.113			
3	.772	7.020	70.133			
4	.615	5.595	75.728			
5	.528	4.799	80.526			
6	.467	4.246	84.772			
7	.439	3.995	88.767			
8	.368	3.345	92.112			
9	.326	2.964	95.076			
10	.297	2.699	97.775			
11	.245	2.225	100.000			

Factor Matrix ^a	
	Factor
	1
PCL43	.849
PCL16	.799
PCL22	.742
PCL54	.737
PCL10	.735
PCL34	.732
PCL51	.698
PCL47	.682
PCL4	.675
PCL28	.654
PCL39	.471



4.4.5 Factor analysis: Stewardship

The following results were obtained for the test for unidimensionality of the subscale Stewardship:

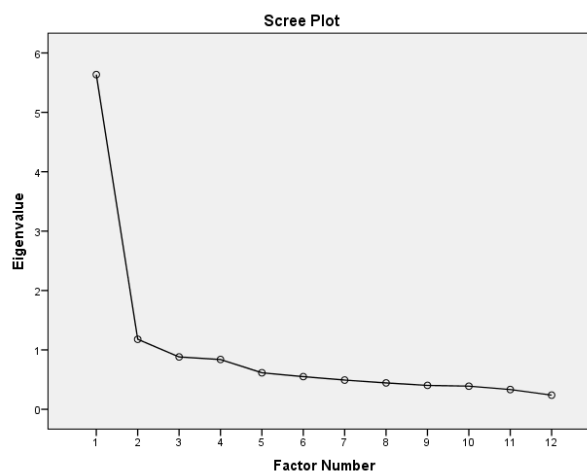
1. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was .892 (>.60) (Pallant, 2010) which rendered the subscale factor analysable.
2. Two factors had eigenvalues greater than 1 when total variances were explained through principle axis factoring, indicating two underlying factors. The eigenvalues were 5.636 and 1.179, respectively.
3. The rotated pattern matrix also indicated two underlying factors. The proportion of variance explained by Factor 1 was 46.96% and by Factor 2 was 9.83%.
4. The factor loadings of the oblimin rotation indicates two complex (cross-loading) items (PCL23 and PCL29)
5. The possibility of two factors were shown to the left of the 'elbow' of the scree plot.

Details of these results are provided in Table 4.12.

Table 4.12. Factor Analysis: Stewardship

KMO and Bartlett's Test							
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.							.892
Bartlett's Test of Sphericity		Approx. Chi-Square				1587.826	
		df				66	
		Sig.				.000	
Total Variance Explained							
Factor	Total	Initial Eigenvalues		Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings ^a
		% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	5.636	46.963	46.963	5.134	42.784	42.784	4.911
2	1.179	9.826	56.789	.757	6.309	49.094	3.140
3	.881	7.346	64.135				
4	.839	6.990	71.125				
5	.615	5.125	76.249				
6	.550	4.582	80.831				
7	.492	4.102	84.934				
8	.445	3.705	88.638				
9	.402	3.354	91.992				
10	.389	3.245	95.238				
11	.333	2.773	98.011				
12	.239	1.989	100.000				

Pattern Matrix ^a		
	Factor	
	1	2
PCL52	.871	-.175
PCL5	.764	-.074
PCL48	.717	.080
PCL57	.679	-.013
PCL55	.647	-.064
PCL35	.607	.165
PCL40	.554	.174
PCL44	.552	.145
PCL17	.410	.235
PCL11	.408	.312
PCL23	.026	.832
PCL29	.044	.688



Extraction Method: Principal Axis Factoring.

Rotation Method: Oblimin with Kaiser

Normalization.^a

a. Rotation converged in 5 iterations.

4.4.5.1 Evaluation of EFA for Stewardship

As a possible second factor was identified during EFA, the researcher had to critically evaluate the plausibility of a second factor. The two items which were identified in the factor matrix as possibly belonging to a second factor were:

PCL23: “My manager holds external stakeholders (e.g. external service providers) accountable for honest and transparent practices.”

PCL29: “My manager holds external stakeholders accountable for service delivery.”

The above items were the only items in the subscale Stewardship which related to the accountability of parties external to the organisation. It was therefore plausible that these items would load on a separate factor. However, the literature supported the notion that Stewardship includes holding external stakeholders accountable for agreed goals (see Table 2.20). Unidimensionality of this subscale with the inclusion of at least one of these items was therefore desirable. The researcher thus conducted further factor analysis by deleting first the one and then the other item from the subscale.

When item PCL23 was deleted, the subscale showed unidimensionality. See Table 4.13. The factor loadings were all significant at $> .40$.

Table 4.13. *Revised unrotated factor matrix for Stewardship*

Factor Matrix ^a	
	Factor
	1
PCL48	.765
PCL52	.732
PCL35	.712
PCL5	.700
PCL40	.672
PCL57	.663
PCL44	.649
PCL11	.617
PCL55	.593
PCL17	.574
PCL29	.478

4.4.6 Factor analysis: Balanced Processing

The assumption that all items of the subscale Balanced Processing load on a single factor of Principled Leadership, was investigated. The results are as follows:

1. The subscale could be regarded factor-analysable as the Kaiser-Meyer-Olkin Measure of Sampling Adequacy was $.894 (>.60)$ (Pallant, 2010).
2. When total variances were explained through principle axis factoring, an eigenvalue greater than 1 (DeVellis, 2003) was shown by only one factor, the value of which was 3.864. This indicated one underlying factor.
3. The factor matrix indicated a single underlying factor and the percentage of variance explained by the single factor (64.4%) was greater than 50% (Theron, 2016) for all items of the subscale.
4. The factor loadings of the unrotated factor matrix were all significant at $>.40$ (Hinkin, 1998).
5. A single factor (DeVellis, 2003) was shown to the left of the 'elbow' of the scree plot.

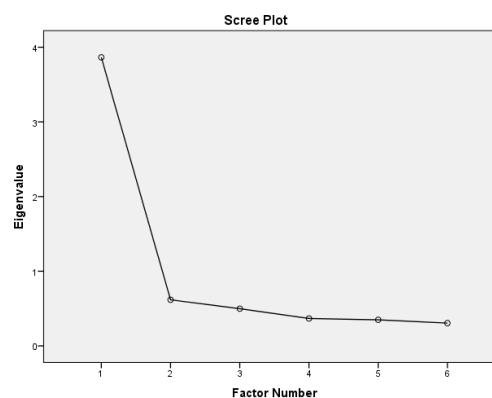
Details of these results are provided in the Table 4.14.

Table 4.14. Factor Analysis: Balanced Processing

KMO and Bartlett's Test						
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.						.894
Bartlett's Test of Sphericity	Approx. Chi-Square					909.434
	df					15
	Sig.					.000

Total Variance Explained						
Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.864	64.398	64.398	3.448	57.475	57.475
2	.617	10.284	74.682			
3	.498	8.301	82.983			
4	.367	6.117	89.100			
5	.349	5.818	94.918			
6	.305	5.082	100.000			

Factor Matrix ^a	
	Factor
	1
PCL30	.817
PCL24	.814
PCL6	.766
PCL12	.765
PCL18	.714
PCL36	.659



Having established the reliability and the construct validity of the PLS, the researcher will now report on the results obtained for the fit of the measurement models of the PLS and ancillary scales.

4.5 Phase 5: Reliability Analysis of the Ancillary Scales

Before adding the ancillary scales into the structural model, the researcher needed assurance that the scales, as supported by the data, showed internal reliability. Scales with low reliability would unnecessarily contaminate the structural model and would most likely result in poor fit of the structural model. Reliability analysis utilising the SPSS reliability function was thus conducted on each of the ancillary scales. These results are reported below.

4.5.1 Reliability analysis: Adapted Moral Intelligence Inventory

The adapted Moral Intelligence Inventory was made up of three subscales, namely, Responsibility, Integrity and Compassion (Lennick & Kiel, 2008). Each of these underwent item analysis to determine the reliability of the subscales. It was decided that if any of the items were shown to be poor items during this part of the analysis, the researcher would flag them but would only consider them for deletion during the CFA stage of the analysis, if this then proved necessary.

4.5.1.1 Reliability analysis: Responsibility

The subscale Responsibility consisted of 12 items. The Cronbach's alpha for the subscale was an excellent .956 (Nunnally, 1978). The item-total correlations were greater than .30 for all items correlating with the scale score, indicating that all items reflected the same underlying factor (Pallant, 2010). No poor items were identified. Further details for the subscale are provided in the Table 4.15.

Table 4.15. Reliability analysis results for subscale: Responsibility

Reliability Statistics					
Cronbach's Alpha Based on Standardized					
Cronbach's Alpha	Items			N of Items	
.956	.958			12	
Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
MCI4	43.12	64.006	.796	.839	.952
MCI5	43.16	63.243	.812	.836	.952
MCI6	43.04	64.564	.695	.573	.955
MCI11	42.98	63.438	.847	.782	.951
MCI12	42.98	63.899	.837	.803	.951
MCI13	43.21	62.543	.771	.641	.953
MCI19	42.88	64.628	.831	.735	.952
MCI20	42.96	63.982	.797	.656	.952
MCI21	43.05	63.934	.765	.621	.953
MCI26	43.06	63.123	.809	.673	.952
MCI27	43.28	63.348	.760	.616	.953
MCI28	43.31	62.743	.744	.620	.954

4.5.1.2 Reliability analysis: Integrity

The subscale Integrity was made up of 13 items. The Cronbach's alpha for the subscale was an excellent .932 (Nunnally, 1978). The item-total correlations were greater than .30 for all items correlating with the scale score, indicating that all items reflected the same underlying factor (Pallant, 2010). The results revealed no poor items. Further details for the subscale are provided in Table 4.16.

Table 4.16. Reliability analysis results for subscale: Integrity

Reliability Statistics					
Cronbach's Alpha Based on Standardized					
Cronbach's Alpha	Items		N of Items		
.932	.932		13		
Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
MCI1	48.27	56.907	.760	.635	.924
MCI2	48.17	59.239	.663	.503	.928
MCI3	48.45	56.469	.763	.644	.924
MCI8	48.70	56.051	.712	.588	.926
MCI9	48.49	57.074	.745	.641	.925
MCI10	48.54	56.357	.678	.505	.927
MCI15	48.41	57.942	.748	.606	.925
MCI16	48.53	55.534	.769	.682	.924
MCI17	48.24	60.452	.555	.376	.931
MCI18	48.51	56.492	.700	.525	.926
MCI23	48.57	61.203	.439	.281	.934
MCI24	48.67	56.650	.712	.630	.926
MCI25	48.41	57.420	.734	.576	.925

4.5.1.3 Reliability analysis: Compassion

The subscale Compassion comprised four items. The Cronbach's alpha for the subscale was not ideal, but adequate at 0.748. If this subscale had more items, it could possibly have had a higher alpha value (DeVellis, 2003, p.97). The item-total correlations were greater than .30 for all items correlating with the scale score, indicating that all items reflected the same underlying factor (Pallant, 2010). The only item which would have increased the alpha value if it had been deleted, was PCL29. This item read: "Because my manager cares about those who report to him/her, he/she actively supports the efforts of subordinates to accomplish important personal

goals". The alpha value would have increased from .748 to .758. This increase was not noteworthy enough to flag the item for elimination. Further details for the subscale are provided in Table 4.17.

Table 4.17. *Reliability analysis results for subscale: Compassion*

Reliability Statistics					
Cronbach's Alpha Based on Standardized					
Cronbach's Alpha	Items		N of Items		
.748	.754		4		

Item-Total Statistics					
	Scale Mean if Item	Scale Variance if	Corrected Item-Total	Squared Multiple	Cronbach's Alpha if
	Deleted	Item Deleted	Correlation	Correlation	Item Deleted
MCI7	11.85	3.896	.610	.406	.650
MCI14	11.87	4.546	.602	.378	.670
MCI22	12.26	3.573	.589	.359	.668
MCI29	12.00	4.773	.409	.171	.758

4.5.2 Reliability analysis: Leader Trust Scale

The Leader Trust Scale (LTS) consisted of 13 items. Item analysis was conducted to determine the reliability of the scale, as this was important for inclusion of the scale in the structural model. The Cronbach's alpha of .966 revealed excellent scale reliability (Nunnally, 1978). The item-total correlations were greater than .30 for all items correlating with the scale score, indicating that all items reflected the same underlying factor (Pallant, 2010). The mean inter-items correlations were moderate (.693) and varied from .537 to .828. The results revealed no poor items. Further details are provided in Table 4.18.

Table 4.18. *Reliability analysis results for Leader Trust Scale*

Reliability Statistics							
Cronbach's Alpha Based on Standardized							
Cronbach's Alpha	Items		N of Items				
.966	.967		13				

Summary Item Statistics							
	Mean	Minimum	Maximum	Range	Maximum /		N of Items
					Minimum	Variance	
Item Means	4.188	4.100	4.313	.213	1.052	.004	13
Item Variances	.690	.451	.819	.368	1.817	.009	13

Inter-Item Correlations	.693	.537	.828	.291	1.541	.003	13
Item-Total Statistics							
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted		
TIL1	50.19	73.118	.831	.698	.964		
TIL2	50.34	71.725	.709	.526	.966		
TIL3	50.24	71.349	.831	.718	.963		
TIL4	50.25	69.385	.856	.771	.963		
TIL5	50.13	71.170	.793	.691	.964		
TIL6	50.16	70.206	.870	.818	.962		
TIL7	50.27	71.249	.838	.735	.963		
TIL8	50.25	71.444	.805	.683	.964		
TIL9	50.29	71.162	.809	.700	.964		
TIL10	50.31	70.932	.796	.670	.964		
TIL11	50.32	71.557	.782	.650	.965		
TIL12	50.28	69.460	.854	.754	.963		
TIL13	50.28	70.351	.856	.756	.963		

4.5.3 Reliability analysis: Organisational Citizenship Behaviour

The Organisational Citizenship Behaviour Scale (OCBS) consisted of five subscales, namely, Altruism, Conscientiousness, Sportsmanship, Civic Virtue and Courtesy. Item analysis was conducted on each of these to determine the reliability of the subscales, as this was important for inclusion of the scale in the structural model.

4.5.3.1 Reliability analysis: Altruism

Five items made up the subscale Altruism. The Cronbach's alpha for the subscale was not ideal, but adequate at .782. (Nunnally, 1978). The item-total correlations were greater than .30 for all items correlating with the scale score, indicating that all items reflected the same underlying factor (Pallant, 2010). None of the items were flagged as poor items. Table 4.19 provides further details for this subscale.

Table 4.19. Reliability analysis results for subscale: Altruism

Reliability Statistics		
Cronbach's Alpha Based on Standardized		
Cronbach's Alpha	Items	N of Items
.782	.788	5

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
OCB1	16.68	4.230	.563	.320	.740
OCB10	16.42	4.252	.612	.395	.728
OCB13	16.96	3.684	.568	.325	.741
OCB15	16.64	4.031	.596	.388	.728
OCB23	16.75	4.203	.475	.229	.768

4.5.3.2 Reliability analysis: Conscientiousness

Conscientiousness comprised five items. The Cronbach's alpha for the subscale was an adequate .705. (Nunnally, 1978). The item-total correlations were greater than .30 for all items correlating with the scale score, indicating that all items reflected the same underlying factor (Pallant, 2010). No poor items were identified. Further details for the subscale are provided in Table 4.20.

Table 4.20. Reliability analysis results for subscale: Conscientiousness

Reliability Statistics		
Cronbach's Alpha Based on Standardized		
Cronbach's Alpha	Items	N of Items
.705	.711	5

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
OCB3	16.87	4.659	.434	.190	.668
OCB18	17.08	4.275	.498	.250	.642
OCB21	17.34	3.583	.516	.299	.638
OCB22	16.95	4.459	.508	.268	.642
OCB24	17.33	4.464	.386	.162	.687

4.5.3.3 Reliability analysis: Sportsmanship

The subscale Sportsmanship was made of up five items. The reliability analysis resulted in an adequate Cronbach's alpha of .762 (Nunnally, 1978). The item-total correlations were greater than .30 for all items correlating with the scale score, indicating that all items reflected the same underlying factor (Pallant, 2010). No poor items were identified. Additional details of the subscale's results are shown in Table 4.21.

Table 4.21. *Reliability analysis results for subscale: Sportsmanship*

Reliability Statistics					
Cronbach's Alpha Based on Standardized					
Cronbach's Alpha	Items		N of Items		
.762	.765		5		

Item-Total Statistics					
	Scale Mean if Item	Scale Variance if	Corrected Item-Total	Squared Multiple	Cronbach's Alpha if
	Deleted	Item Deleted	Correlation	Correlation	Item Deleted
OCB2R	15.27	9.868	.438	.219	.750
OCB5R	15.19	9.029	.552	.332	.711
OCB7R	15.15	8.717	.659	.446	.675
OCB16R	15.76	8.927	.475	.233	.743
OCB19R	15.17	9.254	.546	.325	.714

4.5.3.4 Reliability analysis: Civic Virtue

The subscale Civic Virtue was made up of four items. The reliability analysis resulted in a Cronbach's alpha of .659. As per Nunnally (1978) this deemed the subscale to have limited applicability. The item-total correlations were greater than .30 for all items correlating with the scale score, indicating that all items reflected the same underlying factor (Pallant, 2010). The results did not reveal any poor items. Details of the subscale's results are shown in Table 4.22.

Table 4.22. *Reliability analysis results for subscale: Civic Virtue*

Reliability Statistics					
Cronbach's Alpha Based on Standardized					
Cronbach's Alpha	Items		N of Items		
.659	.659		4		

Item-Total Statistics					
	Scale Mean if Item	Scale Variance if	Corrected Item-Total	Squared Multiple	Cronbach's Alpha if
	Deleted	Item Deleted	Correlation	Correlation	Item Deleted
OCB6	11.42	3.669	.364	.154	.639
OCB9	11.35	3.018	.518	.303	.535
OCB11	11.56	2.970	.457	.257	.583
OCB12	11.30	3.527	.430	.210	.600

4.5.3.5 Reliability analysis: Courtesy

The subscale Courtesy comprised four items. The Cronbach's alpha for the subscale was .742, which was an adequate result. The item-total correlations were greater than .30 for all items correlating with the scale score, indicating that all items reflected the same underlying factor (Pallant, 2010). The item total statistics revealed that if the item OCB17: "I take steps to try to prevent problems with other workers", were to be deleted, the alpha value for the scale would have increased minimally from .742 to .744. This would not have been a noteworthy change. No items were thus flagged as poor items. Further details of the subscale's results are shown in the Table 4.23.

Table 4.23. Reliability analysis results for subscale: Courtesy

Reliability Statistics					
Cronbach's Alpha Based on Standardized					
Cronbach's Alpha	Items			N of Items	
.742	.743			5	

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
OCB4	16.93	3.848	.459	.222	.714
OCB8	17.24	3.409	.604	.425	.657
OCB14	16.92	3.870	.507	.266	.697
OCB17	17.31	3.947	.382	.155	.744
OCB20	17.20	3.634	.588	.396	.667

In summary, the reliability analysis of the ancillary scales, which were included in the structural model, had reliability values that were acceptably to highly reliable. Before they could be fitted together with the PLS in a structural model, the fit of the measurement models of each of these scales was tested. As mentioned in Chapter 3, the fit of these sales' measurement models provides confirmation of the construct validity of these scales. If the scales showed adequate fit, this would be further proof that the items underlying the ancillary scales, adequately measured the construct they related to.

4.6 Evaluating Measurement Model Fit

As discussed in Chapter 3, the purpose of evaluating the measurement model of a scale is to determine the degree to which the data collected supports the theorised model. When the covariance matrix implied by the model is equal to the covariance matrix of the data collected,

the model is said to fit (Diamantopoulos & Siguaw, 2000, p.7). Confirmatory factor analysis (CFA) was performed in LISREL 8.80 to establish the degree of the model fit. As mentioned previously, no fit index is indisputably superior to another. It thus rested on the shoulders of the researcher to evaluate a range of goodness-of-fit indices together with the matrices that underlay the measurement model equation, to draw a conclusion about the measurement model's fit.

Three aspects were analysed to determine the fit of the measurement model, namely:

- 1) The overall fit of the model which was done by analysing the various goodness-of-fit indices listed in Table 3.9 (see Chapter 3).
- 2) The magnitude and significance of the paths of the measurement model equation, $X = \Lambda\xi + \delta$, which was done through:
 - a) An analysis of the completely standardised LAMBDA -X matrix. The loading estimates should exceed 0.5 for the loadings to be considered satisfactory (Diamantopoulos & Siguaw, 2000, p.91).
 - b) An analysis of the standard error and t-values of unstandardized LAMBDA-X matrix in those cases where the factor loadings mentioned above were less than 0.5. A t-value "is used to determine whether a particular parameter is significantly different from zero in the population, at a 5% significance level" (Diamantopoulos & Siguaw, 2000, p.61). The t-value is calculated by dividing the value of the parameter by the standard error of that parameter (Diamantopoulos & Siguaw, 2000, p.61). The t-value should be greater than |1.96| to indicate a significant relationship.

4.6.1 Phase 6a: Evaluation of the fit of the PLS's measurement model

Table 4.24 presents the fit statistics with comments on the fit of the measurement model of the PLS. The full extract of the goodness-of-fit results are included as Appendix B.

Table 4.24. *Fit Statistics and Discussion: PLS measurement model*

Overall fit measures	Results	Discussion
Satorra-Bentler Minimum fit function Chi-Square	3388.755 ($p = 0.0$)	The χ^2 statistic showed a significant result ($p < 0.01$). The exact fit hypothesis, H_{03} : RMSEA = 0, therefore had to be rejected in favour of the alternate exact fit hypothesis H_{a3} : RMSEA > 0.

χ^2 /df (Chi-square / Degrees of Freedom)	3388.755 / 1524 = 2.223	When χ^2 (2996.664) is divided by the degrees (1580) of freedom, a value of between 2 and 5 indicates a good fit. The model thus showed good fit.
Root Mean Square Error of Approximation (RMSEA)	.0553	A RMSEA value of between .05 and .08, as was the case here, indicates reasonable fit.
P-Value for Test of Close Fit (RMSEA < 0.05)	.00212	Values greater than .05 indicate close fit. In this case the value was lower than 0.05. The hypothesis for close fit, $H_{04}:RMSEA \leq .05$, was therefore rejected in favour of the alternate close fit hypothesis $H_{a4}:RMSEA > .05$ as the model did not show close fit.
90% Confidence Interval for RMSEA	.0523; .0584	If the lower limit is close to zero and the upper limit lower than .08, the model is deemed to show good fit. In this case the lower limit and upper limit had similar values. The lower limit was not as close to zero as desired but the upper limit was lower than .08. The researcher thus deemed the model to have reasonable fit.
Root Mean Square Residual (RMR)	.0367	This value of .0392 would be considered a low value. Low values (<0.08) indicate good fit.
Standardised Root Mean Square Residual (SRMR)	.0470	SRMR values below .05 show good fit, as was the case here.
Absolute fit index		
Goodness-of-Fit Index (GFI)	.695	GFI values greater than .90 indicate good fit. This value of 0.666 did not show good fit.
Relative fit indices		
Non-Normed Fit Index (NNFI)	.988	Relative fit indices greater than .95 indicate good fit. In this case, all relative fit indices were greater than .95, thus indicating that the model fitted the data well.
Normed Fit Index (NFI)	.976	
Comparative Fit Index (CFI)	.988	
Incremental Fit Index (IFI)	.988	

Relative Fit Index (RFI)	.975
--------------------------	------

The results of the fit indices showed that the model did not meet the criteria for exact and close fit. However, the χ^2/df , RMR, SRMR and relative fit indices indicated that the measurement model for the PLS showed good fit. Overall, the measurement model for the PLS showed acceptable fit.

4.6.2 Phase 6b: Validation of the path coefficients of the PLS's measurement model

To validate the fit statistics discussed above, an assessment of the relationships between the latent variables was necessary. The magnitude and significance of the indicator variables (X) loading on their respective dimensions (ξ) should be substantial and significant, if the paths and relationships hypothesised in the measurement model are to be regarded as valid. To establish this, the factor loadings of the completely standardised LAMBDA-X matrix should be greater than .50 (MacKenzie et al., 2011, p.315) and significant (t-value in the unstandardized LAMBDA-X matrix > |1.96|).

The LAMBDA-X matrix in Table 4.25 showed that all but two items had factor loadings above .50. These two items, PCL29: "My manager holds external stakeholders accountable for service delivery" and PCL39: "My manager allows me to solve problems on my own instead of telling me what to do", also showed as potentially weak items in the item analysis of the PLS. At that point they were not selected for elimination because their elimination would have only marginally increases the alpha value of their respective subscales. Furthermore, the literature supported their inclusion in their designated dimensions.

At this point in the analysis, the researcher examined the t-value of these two items in the unstandardized LAMBDA-X matrix to determine if they should be considered for exclusion. As can be seen in Table 4.26, both items had t-values greater than |1.96|, thus loading significantly on their designated subscales.

The above-mentioned t-values of the 'potential suspect' items and the high factor loadings of the remaining items on their designated latent variables, together with the results of the χ^2/df , RMSEA, RMR, SRMR and relative fit indices (see Table 4.24) led the researcher to conclude that the PLS showed good fit.

Table 4.25. Completely standardised LAMBDA-X matrix of the PLS measurement model

Completely Standardised Solution						
<u>LAMBDA-X</u>	IntValue	SelfAwar	PrincStr	OtherCen	Stewards	BalProce
	-----	-----	-----	-----	-----	-----
PCL1	0.790	- -	- -	- -	- -	- -
PCL2	- -	0.628	- -	- -	- -	- -
PCL3	- -	- -	0.783	- -	- -	- -
PCL4	- -	- -	- -	0.682	- -	- -
PCL5	- -	- -	- -	- -	0.726	- -
PCL6	- -	- -	- -	- -	- -	0.735
PCL7	0.797	- -	- -	- -	- -	- -
PCL8	- -	0.793	- -	- -	- -	- -
PCL9	- -	- -	0.786	- -	- -	- -
PCL10	- -	- -	- -	0.730	- -	- -
PCL11	- -	- -	- -	- -	0.614	- -
PCL12	- -	- -	- -	- -	- -	0.747
PCL13	0.734	- -	- -	- -	- -	- -
PCL14	- -	0.657	- -	- -	- -	- -
PCL15	- -	- -	0.793	- -	- -	- -
PCL16	- -	- -	- -	0.790	- -	- -
PCL17	- -	- -	- -	- -	0.591	- -
PCL18	- -	- -	- -	- -	- -	0.745
PCL19	0.825	- -	- -	- -	- -	- -
PCL20	- -	0.808	- -	- -	- -	- -
PCL21	- -	- -	0.680	- -	- -	- -
PCL22	- -	- -	- -	0.760	- -	- -
PCL24	- -	- -	- -	- -	- -	0.774
PCL25	0.795	- -	- -	- -	- -	- -
PCL26	- -	0.750	- -	- -	- -	- -
PCL27	- -	- -	0.627	- -	- -	- -
PCL28	- -	- -	- -	0.689	- -	- -
PCL29	- -	- -	- -	- -	0.478	- -
PCL30	- -	- -	- -	- -	- -	0.810
PCL31	0.765	- -	- -	- -	- -	- -
PCL32	- -	0.773	- -	- -	- -	- -
PCL33	- -	- -	0.819	- -	- -	- -
PCL34	- -	- -	- -	0.748	- -	- -
PCL35	- -	- -	- -	- -	0.723	- -
PCL36	- -	- -	- -	- -	- -	0.717
PCL38	0.745	- -	- -	- -	- -	- -
PCL38	- -	0.794	- -	- -	- -	- -
PCL39	- -	- -	- -	0.476	- -	- -
PCL40	- -	- -	- -	- -	0.648	- -
PCL41	0.692	- -	- -	- -	- -	- -
PCL42	- -	0.734	- -	- -	- -	- -
PCL43	- -	- -	- -	0.826	- -	- -

PCL44	--	--	--	--	0.617	--
PCL45	0.813	--	--	--	--	--
PCL46	--	0.805	--	--	--	--
PCL47	--	--	--	0.720	--	--
PCL48	--	--	--	--	0.779	--
PCL49	0.705	--	--	--	--	--
PCL50	--	0.761	--	--	--	--
PCL51	--	--	--	0.691	--	--
PCL52	--	--	--	--	0.746	--
PCL53	0.709	--	--	--	--	--
PCL54	--	--	--	0.744	--	--
PCL55	--	--	--	--	0.606	--
PCL56	0.616	--	--	--	--	--
PCL57	--	--	--	--	0.650	--
PCL58	0.686	--	--	--	--	--

Note: IntValue: internalised values; SelfAwar: self-awareness; PrincStr: principled strategist; OtherCen: other-centred; Stewards: stewardship; BalProce: balanced processing.

Table 4.26: Unstandardised LAMBDA-X Matrix of the PLS

LISREL Estimates (Robust Maximum Likelihood)

LAMBDA-X

	IntValue -----	SelfAwar -----	PrincStr -----	OtherCen -----	Stewards -----	BalProce -----
PCL29	--	--	--	--	0.388 (0.043) 8.950*	--
PCL39	--	--	--	0.418 (0.054) 7.785*	--	--

Note: Unstandardised path coefficients in bold; standard error estimates in brackets; t-values $\geq |1.96|$ indicate significant parameter estimates. *, $p < .05$

IntValue: internalised values; SelfAwar: self-awareness; PrincStr: principled strategist; OtherCen: other-centred; Stewards: stewardship; BalProce: balanced processing.

The path diagram of the PLS's measurement model, as analysed above, is depicted in Figure 4.1.

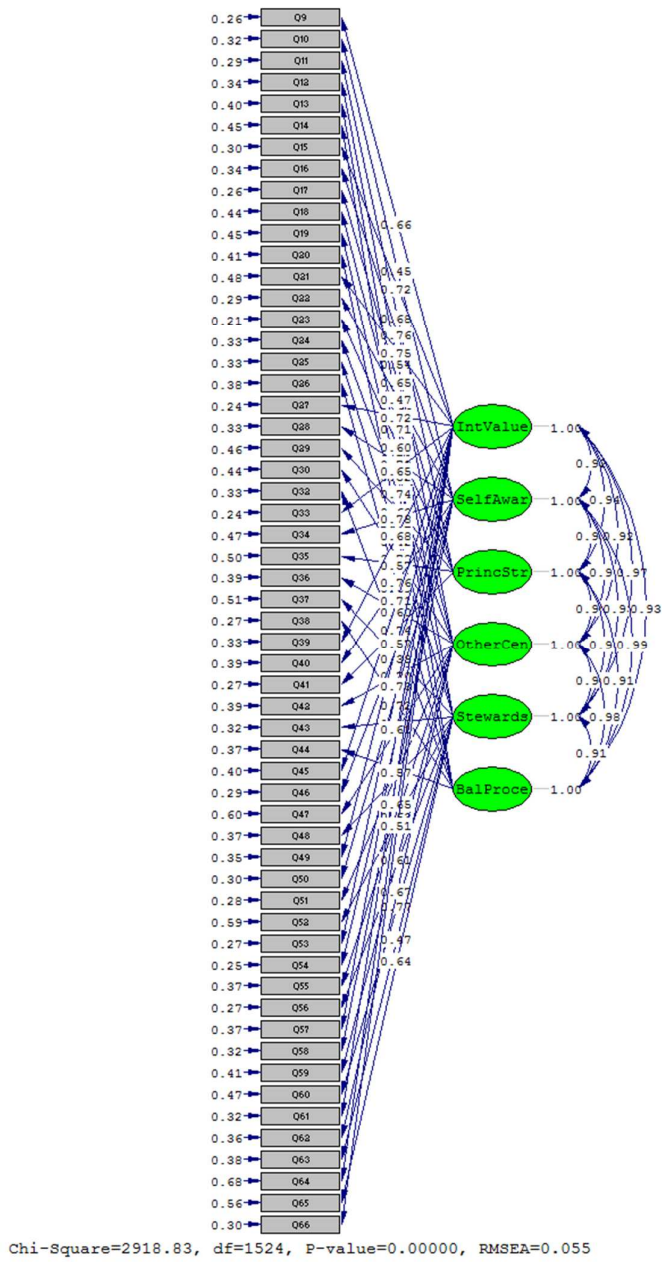


Figure 4.1. Path diagram of the PLS measurement model

4.6.3 Phase 6c: Power assessment of the PLS' measurement model

As discussed in Chapter 3, the statistical power of a SEM analysis relates to the probability of not rejecting an incorrect model and thus tests the probability of not making a Type II error⁴. For the power assessment of the PLS' measurement model, the following were specified:

- A significance level of .05
- Sample size of 300
- Degrees of freedom of 1524
- RMSEA was set to .05 under H_0
- RMSEA was set to .08 under H_a

The Preacher and Coffman (2006) software returned a power value of 1 (see Appendix J for details). This power level indicates that the analysis was sufficiently powerful ($\geq .80$) (Diamantopolous & Siguaw, 2000, p.96) to ensure that the researcher would not have made the error of not rejecting an incorrect model. In other words, if the model had fitted mediocre in the parameter, the Preacher and Coffman (2006) results indicated that the close fit null hypothesis would have been rejected. The fact that the current study failed to obtain close fit (i.e. the close fit null hypothesis was rejected) can possibly be attributed to the excessive statistical insensitivity of the analysis. The result therefore shows that the chance is high that the researcher could have rejected a good model (Diamantopolous & Siguaw, 2000, p.96). In this case the null hypothesis for close fit ($H_{04} : \text{RMSEA} \leq .05$) was rejected. The power assessment softens the negative implications associated with the rejection of the close fit null hypothesis.

4.6.4 Phase 7: Measurement model fit – Adapted MCI

The fit statistics, with comments on the fit of the measurement model of the adapted MCI, are presented in Table 4.27. The full LISREL extract of the goodness-of-fit results are included as Appendix C.

Table 4.27. *Fit Statistics and Discussion: Adapted MCI measurement model*

⁴ Statistical power refers to the probability of rejecting H_0 given that H_0 is false. When testing the hypothesis of close fit, statistical power, in the context of SEM, therefore refers to the probability of rejecting the null hypothesis of close fit when in fact the model fits mediocre (i.e. $\text{RMSEA}=.08$) in the parameter. A type II error (β) refers to not rejecting H_0 when it is in fact false. Statistical power therefore refers to the probability of not making a type one error (i.e. $1-\beta$)

Overall fit measures	Results	Discussion
Satorra-Bentler Minimum fit function Chi-Square	1465.035 ($p = 0.0$)	The χ^2 statistic showed a significant result ($p < 0.01$). The exact fit hypothesis, $H_{05}: RMSEA = 0$, therefore had to be rejected in favour of the alternate exact fit hypothesis $H_{a5}: RMSEA > 0$.
χ^2 /df (Chi-square / Degrees of Freedom)	1465.035 / 374 = 3.917	When χ^2 is divided by the degrees of freedom, a value of between 2 and 5 indicates a good fit. The result of 3.917 thus showed good fit.
Root Mean Square Error of Approximation (RMSEA)	.0752	A RMSEA value of between .05 and .08, as was the case here, indicates reasonable fit.
P-Value for Test of Close Fit (RMSEA < 0.05)	.000	Values greater than .05 indicate close fit. In this case the value was lower than .05. The hypothesis for close fit, $H_{06}: RMSEA \leq .05$, was therefore rejected in favour of the alternate close fit hypothesis $H_{a6}: RMSEA > .05$ as the model did not show close fit.
90% Confidence Interval for RMSEA	.0696; .0808	The model shows close fit when the lower limit is close to 0 and the upper limit is less than .08. These results did not meet the criteria for close fit at a 90% confidence interval for RMSEA.
Root Mean Square Residual (RMR)	.0404	This value of .0404 would be considered a low value. Low values (<.08) indicate good fit.
Standardised Root Mean Square Residual (SRMR)	.0518	SRMR values between .05 and .08 indicate acceptable fit, as was the case here.
Absolute fit index		
Goodness-of-Fit Index (GFI)	.732	GFI values greater than .90 indicate good fit. This value of .732 did not show good fit.
Relative fit indices		
Non-Normed Fit Index (NNFI)	.983	Relative fit indices greater than .95 indicate good fit. In this case, all relative fit indices were greater than .95, thus
Normed Fit Index (NFI)	.975	

Comparative Fit Index (CFI)	.984	indicating that the model showed good fit of the data.
Incremental Fit Index (IFI)	.984	
Relative Fit Index (RFI)	.973	

The RMSEA, χ^2/df , RMR, SRMR and relative fit indices led the researcher to conclude that the data of the adapted MCI measurement model fitted the data reasonably well. This was confirmed by the fact that the factor loadings of the items (X) on their designated exogenous latent variables (ξ), were all above the desired value of .50, as shown in the completely standardised solution of the LAMBDA-X matrix shown in Table 4.28.

Table 4.28. *Completely standardised LAMBDA-X matrix of the adapted MCI measurement model*

Completely Standardised Solution			
<u>LAMBDA-X</u>	Integrit	Responsi	Compassi
	-----	-----	-----
MCI1	0.771	- -	- -
MCI2	0.629	- -	- -
MCI3	0.751	- -	- -
MCI4	- -	0.813	- -
MCI5	- -	0.826	- -
MCI6	- -	0.720	- -
MCI7	- -	- -	0.793
MCI8	0.822	- -	- -
MCI9	0.645	- -	- -
MCI10	0.841	- -	- -
MCI11	- -	0.871	- -
MCI12	- -	0.865	- -
MCI13	- -	0.788	- -
MCI14	- -	- -	0.826
MCI15	0.791	- -	- -
MCI16	0.818	- -	- -
MCI17	0.674	- -	- -
MCI18	0.833	- -	- -
MCI19	- -	0.862	- -
MCI20	- -	0.821	- -
MCI21	- -	0.784	- -
MCI22	- -	- -	0.827
MCI23	0.653	- -	- -
MCI24	0.712	- -	- -
MCI25	0.720	- -	- -
MCI26	- -	0.833	- -
MCI27	- -	0.763	- -
MCI28	- -	0.759	- -
MCI29	- -	- -	0.830

Note: Integrit: integrity; Responsi: responsibility; Compassi: compassion

4.6.5 Phase 7: Measurement model fit - LTS

The fit statistics, with comments on the fit of the measurement model of the Leader Trust Scale (LTS), are presented in Table 4.29. The full LISREL extract of the goodness-of-fit results are included as Appendix D.

Table 4.29. *Fit Statistics and Discussion: LTS*

Overall fit measures	Results	Discussion
Satorra-Bentler Minimum fit function Chi-Square	106.565 (p = 0.000883)	The χ^2 statistic showed a significant result (p<0.01). The exact fit hypothesis, H_{07} : RMSEA = 0, therefore had to be rejected in favour of the alternate exact fit hypothesis H_{a7} : RMSEA>0.
χ^2 /df (Chi-square / Degrees of Freedom)	106.565 / 65 = 1.64	When χ^2 is divided by the degrees of freedom, a value of between 2 and 5 indicates a good fit. The result of 1.64 thus did not show good fit.
Root Mean Square Error of Approximation (RMSEA)	.0462	A RMSEA value of less than .05, as was the case here, indicates good fit.
P-Value for Test of Close Fit (RMSEA < 0.05)	.636	Values greater than .05 indicate close fit. In this case the value was greater than .05. The hypothesis for close fit, H_{08} : RMSEA \leq .05, was therefore accepted and the model was deemed to show close fit.
90% Confidence Interval for RMSEA	.0297; .0617	When the lower limit is close to zero and the upper limit is less than .08, the model can be deemed to show close fit at a 90% confidence interval from RMSEA. These values fell within the band where the model could be regarded as showing close fit at a 90% confidence level.
Root Mean Square Residual (RMR)	.0185	This value of .0185 would be considered a low value. Low values indicate good fit (<.08)
Standardised Root Mean Square Residual (SRMR)	.0267	SRMR values that are less than .05 indicate good fit. This value of .0267

		thus indicated that this model showed good fit.
Absolute fit index		
Goodness-of-Fit Index (GFI)	.897	GFI values greater than .90 indicate good fit. This value of .897 marginally missed this cut-off value for good fit.
Relative fit indices		
Non-Normed Fit Index (NNFI)	.996	Relative fit indices greater than .95 indicate good fit. In this case, all relative fit indices were greater than .95, thus indicating that the model showed good fit of the data.
Normed Fit Index (NFI)	.991	
Comparative Fit Index (CFI)	.996	
Incremental Fit Index (IFI)	.996	
Relative Fit Index (RFI)	.989	

Apart from the GFI and chi-square fit statistics, all other fit statistics indicated good fit of the measurement model of the LTS. This is confirmed by the significant factor loadings of the items (X) on their designated exogenous latent variables (ξ) in terms of the unstandardised LAMBDA-X matrix ($t > |1.96|$). All factor loadings are above the desired value of .50, as shown in the completely standardised solution of the LAMBDA-X matrix shown in Table 4.30.

Table 4.30. *Completely standardised LAMBDA-X matrix of the LTS measurement model*

Completely Standardised Solution	
<u>LAMBDA-X</u>	Trust In Leader

TIL1	0.844
TIL2	0.721
TIL3	0.841
TIL4	0.876
TIL5	0.814
TIL6	0.890
TIL7	0.854
TIL8	0.817
TIL9	0.818
TIL10	0.809
TIL11	0.795
TIL12	0.873
TIL13	0.869

4.6.6 Phase 7: Measurement model fit - OCBS

The fit statistics, with comments on the fit of the measurement model of the OCB scale, are presented in Table 4.31. The full LISREL extract of the goodness-of-fit results are included as Appendix E.

Table 4.31. *Fit statistics and discussion: OCBS measurement model*

Overall fit measures	Results	Discussion
Satorra-Bentler Minimum fit function Chi-Square	329.448 (p = 0.000155)	The χ^2 statistic showed a significant result (p<0.01). The exact fit hypothesis, H ₀₉ : RMSEA = 0, therefore had to be rejected in favour of the alternate exact fit hypothesis H _{a9} : RMSEA>0.
χ^2 /df (Chi-square / Degrees of Freedom)	329.448 / 242 = 1.36	When χ^2 is divided by the degrees of freedom, a value of between 2 and 5 indicates a good fit. The result of 1.36 thus did not show good fit.
Root Mean Square Error of Approximation (RMSEA)	.0348	A RMSEA value of less than .05, as was the case here, indicates good fit.
P-Value for Test of Close Fit (RMSEA < 0.05)	.998	Values greater than .05 indicate close fit. In this case the value was greater than .05. The hypothesis for close fit, H ₀₁₀ : RMSEA ≤ .05, was therefore accepted and the model was deemed to show close fit.
90% Confidence Interval for RMSEA	.0246; .0438	When the lower limit is close to zero and the upper limit is less than .08, the model can be deemed to show close fit at a 90% confidence interval from RMSEA. These values fell within the band where the model can be regarded as showing close fit at a 90% confidence level.
Root Mean Square Residual (RMR)	.0313	This value of .0313 would be considered a low value. Low values indicate good fit (<.08)
Standardised Root Mean Square Residual (SRMR)	.0516	SRMR values between .05 and .08 indicate acceptable fit, as was the case here.

Absolute fit index		
Goodness-of-Fit Index (GFI)	.904	GFI values greater than .90 indicate good fit. This value of .904 indicated that this model had good fit.
Relative fit indices		
Non-Normed Fit Index (NNFI)	.980	Relative fit indices greater than .95 indicate good fit and values between .90 and .95 indicate reasonable fit. In this case, all relative fit indices were above .90, with the NNFI, CFI and IFI above .95, thus indicating that the model showed reasonable to good fit.
Normed Fit Index (NFI)	.936	
Comparative Fit Index (CFI)	.982	
Incremental Fit Index (IFI)	.982	
Relative Fit Index (RFI)	.927	

All the above fit indices, except the chi-square fit statistic showed good fit of the underlying data. To confirm this, the loadings of the items (X) on their designated exogenous latent variables (ξ) in the completely standardised LAMBDA-X matrix were examined. Table 4.32 shows that all but two indicator variables had factor loadings above the desired .50 cut-off score.

The two items in question were: OCB6: "I keep abreast of developments in the organisation", and OCB17: "I take steps to try to prevent problems with other workers". OCB6 was also flagged as an item that would increase the Cronbach's alpha of the subscale if deleted. To determine the extent to which these indicator variables were problematic, their t-values were examined. As can be seen from Table 4.33, the t-values for both indicator variables were greater than |1.96|, indicating significant factor loadings. The researcher thus concluded that these items should remain in the scale and that the measurement model of the OCBS showed acceptable fit.

Table 4.32: Completely standardised LAMBDA-X matrix of the OCBS measurement model

Completely Standardised Solution					
<u>LAMBDA-X</u>	Altruism	Conscien	Sportsma	CivicV	Courtesy
	-----	-----	-----	-----	-----
OCB1	0.627	- -	- -	- -	- -
OCB3	- -	0.569	- -	- -	- -
OCB4	- -	- -	- -	- -	0.545
OCB6	- -	- -	- -	0.444	- -
OCB8	- -	- -	- -	- -	0.709
OCB9	- -	- -	- -	0.655	- -

OCB10	0.710	--	--	--	--
OCB11	--	--	--	0.596	--
OCB12	--	--	--	0.596	--
OCB13	0.687	--	--	--	--
OCB14	--	--	--	--	0.601
OCB15	0.681	--	--	--	--
OCB17	--	--	--	--	0.478
OCB18	--	0.563	--	--	--
OCB20	--	--	--	--	0.729
OCB21	--	0.578	--	--	--
OCB22	--	0.630	--	--	--
OCB23	0.566	--	--	--	--
OCB24	--	0.535	--	--	--
OCB2	--	--	0.516	--	--
OCB5	--	--	0.658	--	--
OCB7	--	--	0.792	--	--
OCB16	--	--	0.538	--	--
OCB119	--	--	0.649	--	--

Note: Conscien: conscientiousness; Sportsma: sportsmanship; CivicV: civic virtue

Table 4.33: Unstandardised LAMBDA-X Matrix for the OBCS measurement model

LISREL Estimates (Robust Maximum Likelihood)

LAMBDA-X

	Altruism	Conscien	Sportsma	CivicV	Courtesy
OCB6	--	--	--	0.331 (0.052) 6.375*	--
OCB17	--	--	--	--	0.334 (0.046) 7.282*

Note: Unstandardised path coefficients in bold; standard error estimates in brackets; t-values $\geq |1.96|$ indicate significant parameter estimates.

*, $p < .05$

4.6.7 Phase 10a: Evaluation of the fit of the overall measurement model underlying the structural model

Having established that all the models which were to be fitted in the structural model showed acceptable fit, the next step was to test the structural model's underlying measurement model for fit. This was a prerequisite for testing the fit of the structural model. Robust maximum likelihood was used as the LISREL estimation method. As discussed in Chapter 3 under Phase 8, random item parcelling was conducted to specify the overall measurement model. Details of the parcelling is presented in Appendix I.

The fit statistics, with comments on the fit of the underlying measurement model of the structural model, are presented in Table 4.34. The full LISREL extract of the goodness-of-fit results are included as Appendix F.

Table 4.34. *Fit Statistics and Discussion: Measurement Model underlying the Structural Model*

Overall fit measures	Results	Discussion
Satorra-Bentler Minimum fit function Chi-Square	353.278 ($p=0.00$)	The χ^2 statistic showed a significant result ($p<0.01$). The exact fit hypothesis, H_{011} : RMSEA = 0, therefore had to be rejected in favour of the alternate exact fit hypothesis H_{a11} : RMSEA>0.
χ^2 /df (Chi-square / Degrees of Freedom)	353.278 / 203 = 1.74	When χ^2 is divided by the degrees of freedom, a value of between 2 and 5 indicates a good fit. The result of 1.74 thus indicated that the model did not show good fit.
Root Mean Square Error of Approximation (RMSEA)	.0498	The RMSEA value should be less than 0.05 for the model to show good fit. This value of .0498 thus showed good fit.
P-Value for Test of Close Fit (RMSEA < 0.05)	.508	Values greater than .05 indicate close fit. In this case the value was greater than .05. The hypothesis for close fit, H_{012} : RMSEA \leq .05, was therefore accepted and the model was deemed to show close fit.
90% Confidence Interval for RMSEA	.0410; .0583	When the lower limit is close to zero and the upper limit is less than .08, the model can be deemed to show close fit at a 90% confidence interval from RMSEA. These values fell within these cut-off points. The model could thus be regarded as showing close fit at a 90% confidence level.
Root Mean Square Residual (RMR)	.00844	This value was very close to zero (<.08) and thus indicated good fit.
Standardised Root Mean Square Residual (SRMR)	0.0219	SRMR values less than .05 indicate good fit. This model thus showed good fit.

Absolute fit index		
Goodness-of-Fit Index (GFI)	.890	GFI values greater than .90 indicate good fit. This value of .890 marginally missed the .90 cut-off value for good fit.
Relative fit indices		
Non-Normed Fit Index (NNFI)	.994	Relative fit indices greater than .95 indicate good fit. In this case, all the indices showed good fit.
Normed Fit Index (NFI)	.989	
Comparative Fit Index (CFI)	.995	
Incremental Fit Index (IFI)	.995	
Relative Fit Index (RFI)	.987	

Proof of a good-fitting model can be found in all the above fit indices except for the chi-square and GFI indices. This finding was validated by the factor loadings of the item parcels (X) on their designated latent variables (ξ), All factor loadings were above the desired cut-off value of .50. See table 4.35 for the results.

Table 4.35. *Completely standardised LAMBDA-X matrix of the overall measurement model of the structural model*

Completely Standardised Solution				
<u>LAMBDA-X</u>				
	PrincLea	MoralInt	TrustLea	OCB
	-----	-----	-----	-----
PLS_1	0.886	- -	- -	- -
PLS_2	0.914	- -	- -	- -
PLS_3	0.911	- -	- -	- -
PLS_4	0.932	- -	- -	- -
PLS_5	0.909	- -	- -	- -
PLS_6	0.924	- -	- -	- -
PLS_7	0.906	- -	- -	- -
PLS_8	0.936	- -	- -	- -
PLS_9	0.916	- -	- -	- -
MCI_1	- -	0.908	- -	- -
MCI_2	- -	0.918	- -	- -
MCI_3	- -	0.944	- -	- -
MCI_4	- -	0.952	- -	- -
MCI_5	- -	0.910	- -	- -
LTS_1	- -	- -	0.937	- -
LTS_2	- -	- -	0.930	- -
LTS_3	- -	- -	0.932	- -
OCB_1	- -	- -	- -	0.694

OCB_2	--	--	--	0.808
OCB_3	--	--	--	0.841
OCB_4	--	--	--	0.762
OCB_5	--	--	--	0.743

Note: PrinCLea: principled leadership; Morallnt: moral intelligence; TrustLea: trust in the leader; OCB: organisational citizenship behaviour

4.6.8 Phase 10b: Evaluation of the fit of the structural model

The researcher concluded above that the measurement model of the structural model showed good fit. The fit of the structural model could thus be tested. The fit statistics, with comments on the fit of the structural model, are presented in Table 4.36. The full LISREL extract of the goodness-of-fit results are included as Appendix G.

Table 4.36. *Fit Statistics and Discussion: Structural Model*

Overall fit measures	Results	Discussion
Satorra-Bentler Minimum fit function Chi-Square	404.556 ($p=0.00$)	The χ^2 statistic showed a significant result ($p<.01$). The exact fit hypothesis, H_{013} : RMSEA = 0, therefore had to be rejected in favour of the alternate exact fit hypothesis H_{a13} : RMSEA>0.
χ^2 /df (Chi-square / Degrees of Freedom)	404.556/ 206 = 1.96	When χ^2 is divided by the degrees of freedom, a value of between 2 and 5 indicates a good fit. The result of 1.96 marginally missed the minimum cut-off value of 2, thus indicating that it did not show good fit.
Root Mean Square Error of Approximation (RMSEA)	.0568	RMSEA values $\geq .05$ and $< .08$ indicate reasonable fit. This value of .0568 thus showed reasonably good fit.
P-Value for Test of Close Fit (RMSEA < 0.05)	.0857	Values greater than .05 indicate close fit. In this case the value was greater than .05. The hypothesis for close fit, H_{014} : RMSEA $\leq .05$, was therefore rejected in favour of the alternate close fit hypothesis H_{a14} : RMSEA > .05
90% Confidence Interval for RMSEA	.0486; .0649	When the lower limit is close to zero and the upper limit is less than .08, the model can be deemed to show close fit

		at a 90% confidence interval from RMSEA. These values fell within these cut-off points. The model could thus be regarded as showing close fit at a 90% confidence level.
Root Mean Square Residual (RMR)	.00969	This value was close to zero (<.08) and thus indicated good fit.
Standardised Root Mean Square Residual (SRMR)	.0239	SRMR values less than .05 indicate good fit. This model thus showed good fit.
Absolute fit index		
Goodness-of-Fit Index (GFI)	.876	GFI values greater than .90 indicate good fit. This value of .876 indicated that the model did not show good fit.
Relative fit indices		
Non-Normed Fit Index (NNFI)	.993	Relative fit indices greater than .95 indicate good fit, and values between .90 and .95 show reasonable fit. In this case, all the indices showed good fit.
Normed Fit Index (NFI)	.987	
Comparative Fit Index (CFI)	.994	
Incremental Fit Index (IFI)	.994	
Relative Fit Index (RFI)	.985	

Results from the RMSEA, P-value of close fit, RMR, SRMR and relative fit indices provided evidence that the structural model showed reasonably good fit. The path diagram resulting from this fit is shown below.

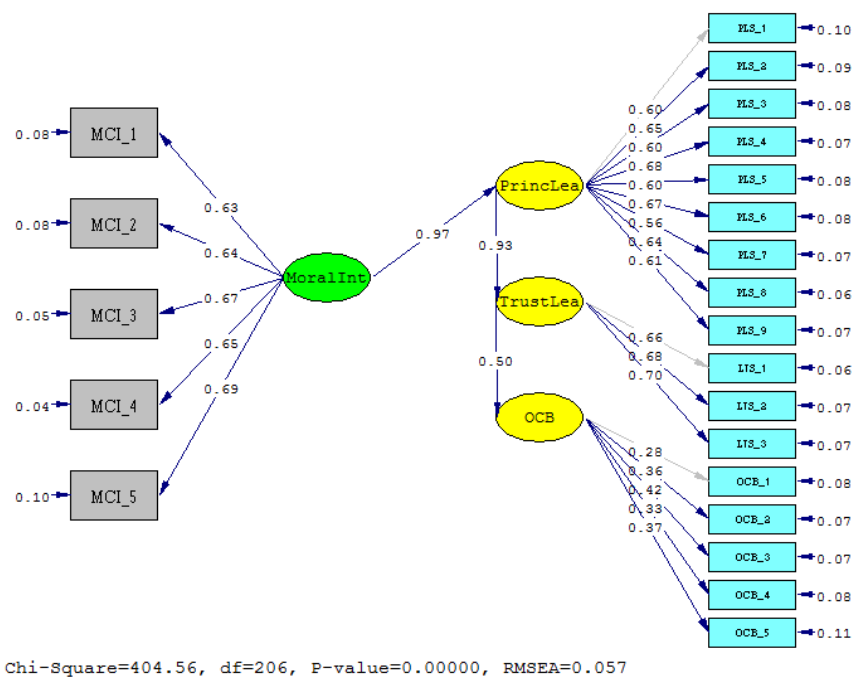


Figure 4.2. Path diagram of the structural model

4.6.9 Phase 10c: Validation of the path coefficients of the variables of the structural model

To further investigate the validity and reliability of the model's fit, the relationship between the variables of the structural model had to be examined. The researcher had to determine whether the paths which were theorised from the literature study were supported by the data in the structural model (Diamantopolous & Sigauw, 2000, p.,.92).

Two aspects had to be examined in determining this, namely:

- 1) the signs of the paths between two variables. The sign indicates whether the direction of the paths between two variables is as it was hypothesised (Diamantopolous & Sigauw, 2003, p.,.92). A positive path indicates that the relationship is as hypothesised. The direction of the arrows in the path diagram (see Figure 4.2) also provides an indication of the structural model supports the direction of the paths hypothesised.
- 2) the magnitude of the estimated parameters. This represents the strength of the hypothesised relationship (Diamantopolous & Sigauw, 2000, p.92). The parameters should be significant. Significance is indicated by a t-value greater than $|1.96|$.

The above information was obtained from the GAMMA and BETA matrices in the LISREL output.

4.6.9.1 Effect of Moral Intelligence on Principled Leadership

The GAMMA matrix, shown in Table 4.37, provides information about the path relationship (γ_{11}) between the exogenous variable, moral intelligence (ξ_1), and the first endogenous variable, principled leadership (η_1). The GAMMA matrix showed a positive relationship between these variables, indicating that the path hypothesised, namely that moral intelligence positively influences principled leadership was proven true. The direction of the arrows in the path diagram in Figure 4.2 confirmed this. The t-value of 20.938, was significant ($p < .05$) as it was greater than $|1.96|$. This resulted in the rejection of $H_{015}: \gamma_{11} = 0$, in favour of the alternate hypothesis $H_{a15}: \gamma_{11} > 0$ (see Table 3.10). The relationship between moral intelligence and principled leadership was also shown to be strong with a path coefficient of .97. The data thus supported the positive effect of moral intelligence on principled leadership, as theorised in the literature study.

Table 4.37. Unstandardised GAMMA Matrix of the Structural Model

GAMMA	
	MORAL INTELLIGENCE
PRINCIPLED LEADERSHIP	0.974 (0.047) 20.938*

Note: Unstandardised path coefficients in bold; standard error estimates in brackets; t-values $\geq |1.96|$ indicate significant parameter estimates. *, $p < .05$

4.6.9.2 The effect of principled leadership on trust in the leader

The BETA matrix, shown in Table 4.38, provided information about the path relationship (β_{21}) between the endogenous variables, principled leadership (η_1), and trust in the leader (η_2). The BETA matrix showed a positive relationship between these variables, indicating that the path hypothesised, namely that principled leadership positively influences trust in the leader was proven true. This was confirmed by the direction of the arrows in Figure 4.2. The t-value of 25.670, was significant ($p < .05$) as it was greater than $|1.96|$. This resulted in the rejection of $H_{016}: \beta_{21} = 0$, in favour of the alternate hypothesis $H_{a16}: \beta_{21} > 0$ (see Table 3.10). Furthermore, the relationship between principled leadership and trust in the leader was strong, with a path coefficient of .926. The positive effect of principled leadership on trust in the leader, as theorised in the literature study, was thus supported by the empirical data.

4.6.9.3 The effect of trust in the Leader on OCB

The BETA matrix, shown in Table 4.38, provided information about the path relationship (β_{32}) between the endogenous variables, trust in the leader (η_2), and OCB (η_3). The path hypothesised, namely that trust in the leader positively influences OCB, was confirmed in that the BETA matrix showed a positive relationship between these variables. This was supported by the direction of the arrows in Figure 4.2. The t-value of 6.984, was significant ($p < .05$) as it was greater than $|1.96|$. This resulted in the rejection of $H_{017}: \beta_{32} = 0$, in favour of the alternate hypothesis $H_{a17}: \beta_{32} > 0$ (see Table 3.10). Moreover, the path coefficient between trust in the leader and OCB was moderate and positive, with a coefficient of .497. The empirical data thus supported the positive effect of trust in the leader on OCB, as theorised in the literature study.

Table 4.38. Unstandardized BETA Matrix of the Structural Model

BETA			
	PRINCLEA	TRUSTLEA	OCB
	-----	-----	-----
PRINCLEA	- -	- -	- -
TRUSTLEA	0.926 (0.036) 25.670*	- -	- -
OCB	- -	0.497 (0.071) 6.984*	- -

Note: Unstandardised path coefficients in bold; standard error estimates in brackets; t-values $\geq |1.96|$ indicate significant parameter estimates. *, $p < .05$

PRINCLEA: principled leadership; TRUSTLEA: trust in leader; OCB: organisational citizenship behaviour

4.6.10 Phase 10d: Power assessment

As discussed in Chapter 3, the statistical power of a model relates to the probability of not rejecting an incorrect model and thus tests the probability of not making a Type II error. For the power assessment of the structural model, the following were specified:

- A significance level of .05
- Sample size of 300
- Degrees of freedom of 206
- RMSEA was set to .05 under H_0
- RMSEA was set to .08 under H_a

The Preacher and Coffman (2006) software returned a power value of .9999978 (see Appendix K for details). This power level indicates that the analysis was sufficiently powerful ($\geq .80$) (Diamantopolous & Siguaw, 2000, p.96) to ensure that the researcher would not have made the error of not rejecting an incorrect model. The result also shows that the chance is

high that the researcher could have rejected a good model (Diamantopolous & Siguaw, 2000, p.96). However, this was not done, as the hypothesis for close fit ($H_{014} : RMSEA \leq .05$) was not rejected. Had the structural model shown mediocre fit in the parameter, the close fit null hypothesis would have been rejected with a very high probability. The result of the power assessment confirms the decision to accept the close fit hypothesis.

4.6.11 Phase 10e: Model modification

Model modification is a process that is followed to determine whether LISREL suggests alternate paths that may improve the fit of the model. Model modification is normally considered when a researcher seeks to improve the fit of a model that already fits well, or wishes to obtain a better fit for a model that does not fit well (Diamantopolous & Siguaw, 2000, p.103). Model modification aims to detect and correct specification errors of the model, i.e. “omission of important, or inclusion of irrelevant parameters given the set of variables in the model” (Diamantopolous & Siguaw, 2000, p.103).

While model modification may seem tempting, it is however only advisable to modify a model based on the modification indices if it makes theoretical sense to do so (Diamantopolous & Siguaw, 2000, p.103).

In this study the modification index showed a possible path indicating that trust in the leader is an antecedent to principled leadership. This is shown by the modification index in Table 4.39 (>6.64) (Kelloway, 1998). The Expected Change for BETA matrix, however, indicated that this relationship was negative ($-.977$). Model modification was thus not considered, since a positive relationship was postulated between trust in the leader and principled leadership.

Table 4.39. *Modification Index of the Structural Model*

Modification Indices for BETA			
	PrincLea	TrustLea	OCB
	-----	-----	-----
PrincLea	- -	107.347	1.263
TrustLea	- -	- -	0.005
OCB	- -	- -	- -

Expected Change for BETA

	PrincLea	TrustLea	OCB
	-----	-----	-----
PrincLea	- -	-0.977	-0.027
TrustLea	- -	- -	0.002
OCB	- -	- -	- -

Note: PrincLea: principled leadership; TrustLea: trust in leader; OCB: organisational citizenship behaviour

4.7 Summary

The purpose of this chapter was to report the results obtained from the statistical analysis of the PLS as a new scale, as well as its inclusion in a nomological network of latent variables, represented by the structural model.

The chapter commenced with reporting results of the item and factor analysis of the PLS and the internal reliability analysis of the three ancillary scales. These analyses were conducted via SPSS. A summary of the PLS's item and factor analysis is provided in Table 4.40.

Table 4.40. Summary of PLS items and factor analysis

Subscale	Number of items	Number of items deleted	Cronbach's alpha	Number of factors resulting from EFA
Internalised Values	13	0	.941	1
Self-Awareness	10	0	.929	1
Principled Strategist	6	0	.878	1
Other-Centred	11	0	.917	1
Stewardship	11	1	.889	1
Balanced Processing	6	0	.888	1

A summary of the internal reliability analysis of the ancillary scales, namely the adapted MCI, LTS and OCBS is provided in Table 4.41.

Table 4.41. *Summary of internal reliability of the subscales of the ancillary scales*

Scale	Subscale	Cronbach's alpha
Adapted Moral Competency Inventory (MCI)	Integrity	.932
	Responsibility	.956
	Compassion	.748
Leader Trust Scale (LTS)	No subscales	.966
Organisational Citizenship Behaviour Scale (OCBS)	Altruism	.782
	Conscientiousness	.705
	Sportsmanship	.762
	Civic Virtue	.659
	Courtesy	.742

Next, the results of the fit for the measurement models of the four scales as well as the structural model's underlying measurement model were reported, and finally, the results of the structural model's fit were reported.

A summary of the fit indices of all measurement models and the structural model is presented in Table 4.42.

Table 4.42. *Summary of fit indices of measurement models and structural model*

Indices	PLS Measurement Model	Adapted MCI Measurement Model	LTS Measurement Model	OCBS Measurement Model	Measurement Model of Structural Model	Structural Model
Overall fit indices						
Satorra-Bentler Scaled Chi-Square (X^2)	3388.755, ($p = 0.0$)	1005.583, ($p = 0.0$)	106.565, ($p = 0.0$)	329.448, ($p = 0.0$)	353.278, ($p = 0.0$)	404.556, ($p = 0.0$)
Degrees of Freedom (df)	1524	374	65	242	203	206
X^2/df	2.223	2.689	1.639	1.361	1.74	1.96
Root Mean Square Error of Approximation (RMSEA)	.0553	.0752	.0462	.0348	.0498	.0568
P-Value for Test of Close Fit	.00212	.000	.636	.998	.508	.0857

(RMSEA < 0.05)						
90% confidence interval for RMSEA	.0523; .0584	.0696; .0808	.0297; .0617	.0246; .0438	.0410; .0583	.0486; .0649
Root Mean Square Residual (RMR)	.0367	.0404	.0185	.0313	.00844	.00969
Standardised Root Mean Square Residual (SRMR)	.0470	.0518	.0267	.0516	.0219	.0239
Absolute Fit Indices						
Goodness of Fit Index (GFI)	.695	.732	.897	.904	.890	.876
Relative Fit Indices						
Non-Normed Fit Index (NNFI)	.988	.983	.996	.980	.994	.993
Normed Fit Index (NFI)	.988	.975	.991	.936	.989	.987
Comparative Fit Index (CFI)	.988	.984	.996	.982	.995	.994
Incremental Fit Index (IFI)	.988	.984	.996	.982	.995	.994
Relative Fit Index (RFI)	.975	.973	.989	.927	.987	.985
Conclusion	Acceptable fit	Acceptable fit	Good fit	Good fit	Good fit	Good fit

In the following chapter, the general conclusions drawn from these results will be discussed in greater detail. The researcher will also discuss recommendations for future research and possible managerial implications of this study.

CHAPTER 5

DISCUSSION OF RESULTS, CONCLUSION AND RECOMMENDATIONS FOR FURTHER STUDY

5.1 Introduction

In this chapter, the researcher will draw conclusions from the research results which were reported in Chapter 4. Managerial implications of the study, limitations encountered during the study and suggestions for future research will also be discussed.

5.2 The Purpose of the Study

Chapter 1 provided insight into the state of leadership in South Africa and the world, which is marred by daily reports of corrupt and immoral leader behaviour. It was proposed that South Africa and the world needs leaders, who, through the modelling of principled behaviour, help to reverse this malaise of corruption and immorality in organisations and society. This behaviour, it was argued, cannot be imposed on leaders from the outside, but instead requires an inside-out approach in which leaders act from an inner compass of universally accepted moral principles (Pillay, 2014).

Social learning theory postulates that followers learn their behaviour from their leaders (Bandura, cited in Mayer et al., 2009). If followers are expected to behave in a principled manner, it is thus critical that the leaders appointed above them are appropriate role models. Furthermore, social exchange theory (Blau, cited in Newman, 2014) postulates that when leaders act in a principled manner, followers will want to reciprocate with appropriate behaviour (Eisenbeiss, cited in Newman, 2014). As leader behaviour thus appears to have a cascading effect (Bass, Walman, Avolio & Webb, cited in Mayer et al., 2009), it is critical that the behaviour of the leader is principled so that this principled behaviour will filter down through the ranks of an organisation and aid in curbing its moral demise.

To employ such leaders, they must first be identified. This can be done with the use of behavioural tests designed for this purpose. Four value-based leadership theories, namely transformational, servant, authentic and ethical leadership, were proposed as leadership theories that focus on principled behaviour and that have scales to measure such behaviour. Each of these theories sheds light on a portion of the principled behaviour desired in a leader. The sum of the behaviours of these four leadership theories provides a wide spectrum of desired principled leader behaviours. Herein lay the main purpose of this study, namely to develop a new scale, the Principled Leadership Scale (PLS), which is an aggregate, value-

based leader behaviour scale. The scale was designed to measure leader behaviour in middle to top management of organisations.

Furthermore, the study raised questions about the origin of morality, why some people appear to be naturally more moral than others, and whether a person's sense of morality has any effect on their leader behaviour. The researcher also desired concrete proof that principled leadership has a positive effect on employee behaviour.

A literature study on moral intelligence (Lennick & Kiel, 2008) led the researcher to propose that moral intelligence has a positive effect on principled leadership. Several studies on the positive effect of servant (Chinomona et al., 2013; Joseph & Winston, 2005; Miao et al., 2013), authentic (Hassan & Ahmed, 2011; Stander, et al., 2015), transformational (Den Hartog et al., 2002; Dirks & Ferrin, 2002; Zaharia & Hutu, 2016) and ethical leadership (Engelbrecht, et al., 2014; Newman et al., 2014) on followers' perceptions that their leader is trustworthy, led the researcher to propose that principled leadership, as an aggregate value-based leadership concept, would also instil perceptions of trust in the leader. Lastly, the literature study supported the notion that trust in the leader has a positive effect on organisational citizenship behaviour (OCB), which indicates positive citizenship behaviour in employees (Dirks & Ferrin, 2001; Engelbrecht & Chamberlain, 2005; Newman et al., 2014; Podsakoff, et al., 1990). In summary, it was thus proposed that moral intelligence is an antecedent of principled leadership, and that principled leadership positively affects trust in the leader which, in turn, shows positive effect on organisational citizenship behaviour.

To test the assumptions about principled leadership mentioned above, two primary substantive hypotheses were postulated, based on the literature reviewed in Chapter 2:

- 1) The PLS provides a construct valid and reliable measure of principled leader behaviour of South African organisational leaders.
- 2) The structural model provides a valid description of the way principled leadership is embedded in a larger nomological network by describing the antecedents and outcomes of principled leadership, as theorised in the literature review.

The method by which these hypotheses were to be tested was discussed in detail in the research methodology of Chapter 3 and the results obtained from the data analysis were presented as the research results in Chapter 4. A discussion of the results and practical implications thereof are discussed below.

5.3 Summary of Research Results

The summary of the research results will focus on two aspects, namely, the results relating to the construct validity of the PLS and the results relating to the structural model, which represented principled leadership within a nomological network of variables (Kerling & Lee, 2000).

5.3.1 Summary of the construct validity results of the PLS

To ensure that the main research objective of developing a new scale to measure principled leadership was achieved, the researcher had to ensure that the PLS was internally reliable and construct valid. To do so, item and factor analysis (EFA) were conducted using SPSS, where after the measurement model of the PLS was subjected to LISREL's confirmatory factor analysis (CFA) to corroborate the findings of the EFA.

5.3.1.1 Summary of the item analysis results and EFA of the PLS

When conducting item analysis, Cronbach's alphas of $\geq .80$ are desired (Nunnally, 1978). All subscales met this minimum criterion, with alpha values for the subscales ranging from .878 to .941. All the subscales produced item-total correlations above .30.

Furthermore, an examination was conducted to determine if any of the items of the subscales were poor and should be considered for elimination. One item of the subscale Stewardship was identified for elimination.

Unidimensionality of a subscale is desirable as this means that all the items measure only the factor (dimension) they were developed to measure (DeVellis, 2003). EFA was conducted on the six subscales of the PLS to test for unidimensionality of these subscales. The Eigenvalue rule, scree plot and the factor loadings of the oblimin rotation were examined to determine the number of underlying factors (DeVellis, 2003).

All subscales, except Stewardship, reported one factor with Eigenvalues > 1 , scree plot readings indicating one factor and factor loadings greater than .40 (DeVellis, 2003; Hinkin, 1998) for all items loading on their designated dimensions. Unidimensionality of Stewardship was however attained once the item identified as poor had been removed from the subscale. The factor loadings were above the desired cut-off of .40 (Hinkin, 1998) for the remaining items of the reduced Stewardship subscale.

5.3.1.2 Summary of the CFA of the PLS

CFA, which culminates in producing a range of fit indices, is a test used to confirm the item and factor structure of a scale. The extent to which the findings of the EFA are corroborated, depends on the extent to which the measurement model can be deemed to fit the underlying data. Based on the evidence provided by numerous fit indices, the researcher concluded that the PLS showed good fit (see Table 4.24 in Chapter 4). Furthermore, the factor loadings of the indicator variables on their designated dimensions in the completely standardised LAMBDA-X matrix were greater than 0.5 for all but two items. These two items did, however, achieve significant factor loadings since they had t-values greater than |1.96| (see Table 4.25 and Table 4.26 in Chapter 4). On balance, the CFA thus revealed that the measurement model of the PLS fitted the underlying data reasonably well.

5.3.1.3 Conclusion regarding the construct validity of the PLS

The abovementioned CFA results corroborated the results of the EFA and thus provided further evidence of the construct validity of the PLS. The first substantive hypothesis, namely, “*The PLS provides a construct valid and reliable measure of principled leader behaviour of South African organisational leaders*”, was thus supported. This implies that the study was successful in developing a scale which may sufficiently measure the aggregate behaviours of the four value-based leadership behaviours analysed in the literature review.

5.3.2 Summary of the construct validity of the structural model

While the EFA and CFA conducted on the PLS seemed to produce pleasing results, the meaning of a construct does not only lie in the internal structure of the construct but also in the way the construct is embedded in a larger nomological network of latent variables (Kerlinger and Lee, 2000). To have certainty about the meaning of the PLS and its construct validity, the relationship of the PLS with other latent variables, as hypothesised in the second substantive research hypothesis, namely, “*The structural model provides a valid description of the way principled leadership is embedded in a larger nomological network by describing the antecedents and outcomes of principled leadership, as theorised in the literature review*”, also had to be confirmed.

This was done by analysing the scales which measured the other latent variables (moral intelligence, trust in the leader and OCB) with regards to their reliability and the fit of their measurement models (CFA), and then fitting all four scales together in a structural model, as theorised from the literature.

5.3.2.1 Conclusion regarding the reliability analysis of the ancillary scales

Reliability analysis was conducted using SPSS to determine the reliability of the subscales of the ancillary scales used in the structural model. All the subscales produced item-total correlations above .30. Furthermore, all the subscales, but one (Civic Virtue of the OCBS), achieved Cronbach alpha values greater than the minimum acceptable value of .70 (Nunnally, 1978). The researcher did not eliminate any items from the Civic Virtue subscale to increase the alpha value, since all the item-total correlations were greater than .30 and the deletion of any items would not have increased the alpha value substantially.

5.3.2.2 Conclusion regarding the evaluation of the ancillary scales' measurement models

CFA was conducted in the measurement models of the three ancillary scales. The LTS and OCBS showed good fit, while the adapted MCI showed acceptable fit. For this study, these fit statistics were adequate to proceed to the testing of the structural model. The purpose of testing the measurement models of the ancillary scales was to ensure that the items underlying the ancillary scales were adequate in describing their relative latent variables.

From the results, the researcher could conclude that the constructs of each of the ancillary scales was adequately described by the items underpinning the scales. This allowed the researcher to confidently proceed with random parcelling of the items of the subscales to form the structural model. When parcelling occurs, new dimensions (no longer linked to their original items) are effectively created per scale to be included in the structural model. It is important that items of a scale adequately contribute to the description of the construct as a whole, so that, even when they are randomly parcelled, the meaning of the construct is not lost and does not result in a breakdown of the internal structure of the scale. Had the CFA results of the ancillary scales indicated that the items did not adequately describe their respective constructs, it would have been unlikely that the effects between the latent variables proposed in the structural model could have been proven true.

5.3.3 Conclusion regarding the evaluation of the structural model

The first step in the evaluation of the structural model was to evaluate the fit of its underlying measurement model, which had been specified through random parcelling of the items of the scales making up the structural model (Adapted MCI, PLS, LTS and OCBS). Based on the evaluation of a range of fit indices, the overall measurement model achieved good fit (see Table 4.34 in Chapter 4).

This fit allowed the researcher to specify the paths for the structural model and then assess the fit of the structural model. The fit indices of the structural model indicated that, overall, the model showed acceptable fit with the empirical data. The direction of the paths, and the positive magnitudes of the path coefficients between the latent variables supported the proposition that moral intelligence had a positive effect on principled leadership, principled leadership had a positive effect on trust in the leader, which in turn had a positive effect on OCB. In addition, the modification indices did not show any other significant paths which would improve the fit of the model.

In conclusion, the structural model was successful in explaining the observed covariances among the latent variables of the model. This served to confirm the meaning of principled leadership as a construct within a nomological network of latent variables, and added to the construct validity of the PLS. The second substantive research hypothesis, "*The structural model provides a valid description of the way principled leadership is embedded in a larger nomological network by describing the antecedents and outcomes of principled leadership, as theorised in the literature review*", could thus be accepted.

The practical managerial implications that can be concluded from the results of these analyses, are discussed below.

5.4 Managerial Implications of the Study

As discussed in Chapter 1, the literature provides ample proof that the disease of unethical behaviour in organisations cannot be healed through external measures such as laws, rules, codes of conduct and even ethics training. If organisational leaders are serious about wanting to eradicate unethical behaviour in their organisations, they would therefore be wise to quit efforts which try to impose morality on their employees from the outside in. They should start by taking a hard and honest look at their own behaviour to determine whether it resembles the level of principled behaviour that is worth emulating. If not, they should address the unethical issues in their own conscience first.

Thereafter, it is critical that organisational leaders evaluate who they elect into leadership positions, as the cascading effect (Bass, Waldman, Avolio & Webb, cited in Mayer et al., 2009) of leader behaviour will determine the type of behaviour and values that will filter down through the organisation. As discussed in Section 1.4.8, a good selection process plays a critical role in ensuring that moral leaders are promoted or appointed. It is therefore important that the selection process makes use of selection methods from which the correct inferences about

the inherent value-based behaviour of a potential leader can be drawn. The PLS was designed to be a scale which would assist the management of organisations with this selection process by evaluating the principled behaviour of candidates necessary for leadership positions.

5.4.1 Managerial implications of the PLS

This study has shown that the PLS is a construct valid measure of principled leader behaviour. The PLS could assist organisations to test the level of principled behaviour in their top structures and to develop their own principled behaviour in areas where they fall short. Because the PLS is developed as an other-rating scale, leaders should gain an accurate reflection of how their principled behaviour is perceived by others. In addition, potential leaders could be assessed by peers to identify the extent to which they display the principled leader behaviour necessary to be in a management position. Development areas, based on the six dimensions of the PLS could also be identified.

At this point, the question as to whether it is possible to develop principled behaviour in adults, could be raised? Essentially, can an immoral adult become moral again? Lennick and Kiel (2005), as well as Hass (1998) propose that this is indeed possible and provide detailed guidelines of how this can be done in their respective works. The researcher proposes that the results of the PLS could be a first step towards a leader's self-awareness regarding his/her moral behaviour, which, with the necessary guidance can be developed.

Furthermore, the results of the hypothesised relationships as analysed in the structural model, provide valuable information and implications of the effect that the constructs measured have on each other. While LISREL cannot show causality between variables, it can indicate whether variables show a positive or negative relationship and what the strength of this relationship is.

5.4.2 Managerial implications derived from the effect of moral intelligence on principled leadership

It was hypothesised that moral intelligence has a significantly positive effect on principled leadership. This effect was confirmed by the results indicated in the unstandardized GAMMA matrix shown in Table 4.37 (see Chapter 4).

The dimensions underlying moral intelligence are integrity, responsibility, compassion and forgiveness, which are underpinned by behaviours such as walking one's talk, standing up for what is right, being truthful, keeping promises, acting responsibly, caring for others, admitting one's mistakes and failures, and being humble (Lennick & Kiel, 2005). Lennick and Kiel argue

that when people have a high propensity to display these behaviours they can be regarded as being morally intelligent. Moral intelligence in leaders is important because it forms the moral compass which directs what such leaders do with their other intelligences (McGregor, cited in Beheshtifar et al., 2011).

The behaviours identified in moral intelligence are effectively a pre-requisite to principled leader behaviour. Without the innate ability to behave with integrity, responsibility, compassion and forgiveness, a leader will struggle to display behaviour aligned with universally accepted moral values and to stand their ground for what is right. It will be difficult for such a leader to take on the responsibility of devising a strategy that is focussed wider than the bottom line of profits, or to build an organisation that is sustainable in the long-term, without using the planet or people as means to build that sustainability. Such a person will not have the servant attitude necessary to be able to put the development needs of others at the fore-front of their responsibilities, nor will they have the necessary humility to question their thinking and be open to the ideas of others. Essentially, a leader who is not morally intelligent, will also not be principled.

5.4.3 Managerial implications derived from the effect of principled leadership on trust in the leader

A significantly positive relationship was postulated between principled leadership and trust in the leader. The unstandardized BETA matrix shown in Table 4.38 (see Chapter 4) confirms this positive, significant relationship.

As discussed in Chapter 2, several studies support the positive effect of the four value-based leadership styles on trust in the leader (Den Hartog et al., 2002; Dirks & Ferrin, 2002; Hassan & Ahmed, 2011; Joseph & Winston, 2005; Miao et al., 2013; Stander et al., 2015; Zaharia & Hutu, 2016). The strong positive effect of principled leadership on trust in the leader resulting from this study, is an indication that principled leadership may lead to followers having greater trust in their leader.

Principled leader behaviours of the dimension 'other-centred' show the leader to be benevolent and to act with the well-being of the other in mind (Dirks & Ferrin, 2002; Yang and Mossholder, cited in Miao et al., 2013) This is strengthened by behaviours representing fairness and respect towards subordinates (Engelbrecht et al., 2014). An 'other-centred' leader shows individualised concern for followers, which helps to build strong emotional ties with followers (Jung & Avolio, cited in Dirks & Ferrin, 2002, p.614; Avolio, Bass & Jung; Bass

& Avolio; Wech, cited in Engelbrecht & Chamberlain, 2005, p.5). These emotional ties and perceptions of the leader's benevolence lead to greater trust in the leader.

A principled leader has internalised those values which are universally accepted as moral principles. When leaders show a high consistency between their moral intentions and their actions, followers will place greater trust in them (Engelbrecht et al., 2014).

The self-awareness with which a principled leader conducts his relationships with others leads to relational transparency and authentic action (Hassan & Ahmed, 2011). By being honest and transparent about their own weaknesses and strengths, and paying attention to how their behaviour affects others, leader are able to build a greater degree of trust between themselves and their followers (Walumbwa et al., 2008).

Finally, balanced processing requires the leader to display humility in his/her thinking, to be open to the opinions and ideas of others, and to have the courage to reconsider deep-seated ideas (Walumbwa et al, 2008). The ability to do this shows that the leader does not consider his/her thinking and ideas superior to those of others, which fosters openness and trust in the leader-follower relationship.

5.4.3.1 Managerial implications derived from the effect of trust in the leader on OCB

The final relationship hypothesised was that trust in the leader has a significant, positive effect on OCB. This hypothesis was also confirmed as valid, as can be seen from the significant, positive relationship depicted between these two variables in Table 4.38 (see Chapter 4).

The positive effect of high trust in leadership is that employees will reciprocate with desirable rather than destructive work behaviour (Dirks & Ferrin, 2002, p.613, citing Konovsky & Pugh, & Mayer et al.). Rather than being suspicious of the motives of their leaders, employees will perceive their leaders to have their best interests at heart (Dirks & Ferrin, 2001; Hassan & Ahmed, 2011). This allows for greater efficiency and effectiveness of a workforce in that employees tend to reciprocate with OCB behaviours which include extra-role behaviours (i.e. taking on functions that fall outside of the job description) that help the organisation and its members (Ariani, 2013, p.49). The helping behaviours of OCB have been shown to be significantly related to performance (Podsakoff et al., 2000, p.546). Efficiency and effectiveness are highly desired outcomes of any organisation, and often give it a competitive edge. Furthermore, in organisations where high levels of OCB are displayed, organisational loyalty will be high which will lead employees to portray their organisation in a positive light.

This may promote the organisation as an attractive place to work and may assist in attracting a good workforce (Podsakoff et al., 2000, p.550).

5.4.4 Conclusion of managerial implications

An organisation which invests in assessing the principled leader behaviour of its top management, and in recruiting and developing principled leaders should be assured that they have the best calibre of role models in place to ensure the cascading of principled behaviour down the ranks of the organisations. Over time, such organisations should be able to restore the behaviour of their workforce towards ethical, principled behaviour.

The literature also proposes that greater trust will be engendered in the organisation's leadership, if they are principled. This, in turn should foster desirable employee work behaviour (OCB) and create greater efficiency and effectiveness within the organisation (Hui et al; MacKenzie et al.; Organ cited in Wat & Shaffer, 2005, p.406).

5.5 Limitations of the study and suggestions for future research

This study was successful in developing the Principled Leadership Scale, in that it yielded very good internal reliability and good construct validity results. The study was also able to successfully prove that moral intelligence has a positive effect on principled leadership, principled leadership has a positive effect on trust in the leader, and that trust in the leader positively affects OCB. However, as the saying goes, one swallow does not make a summer, and so further research to substantiate the findings of this study would be prudent. The study had certain limitations and revealed areas for future research, which should be considered.

The scope of the study did not include collecting a new sample of data, validating the scale with this data, cross validating the scale, or the development of norms. These were the final steps (Steps 7 to 10) of generic scale development proposed in Section 1.7 (see Chapter 1). Following these steps with new data would be recommended to ensure completion of the entire scale development process.

An underlying aim of the study was to develop a home-grown, South African scale. This is important, as few behavioural scales measuring leader behaviour have been developed in South Africa to date. For the researcher to claim that the PLS is a South African scale, the question, "What exactly is a South African scale?" should be considered.

A potential problem with this claim is that South Africa is made up of a population that differs in its worldview on morality. The differences between Western/Eastern and African morality were discussed in some detail in Sections 1.4.7.1 to 1.4.7.3 (see Chapter 1). A qualitative study which tests the understanding of the internalised values addressed in the PLS (i.e. being committed to something greater than oneself, humility, integrity, honesty, transparency, self-discipline, trustworthiness, reliability) across various cultures in South Africa, would add value in establishing if these values can truly be regarded as universal and would add credibility to the assumptions made during the development of the PLS in this regard.

However, the above does not disqualify the scale from being South African. A significant portion of the South African population comes from an Eastern or Western background where the moral values underlying the PLS are supported. This population group is no less South African than those supporting Ubuntu.

A second point to consider would be the demographics of the sample used in the study. Although all participants were South African, the sample should ideally have been representative of the racial demographics of South Africa. Unfortunately, the sample did not live up to this requirement. This is often a problem when purposive, non-probability sampling is used. Choosing a sample that shows better representation of the racial demographics in a future study would be highly recommended.

A third consideration is the language used in the PLS. By expanding on complex concepts such as 'moral principles', 'calling', 'doing the right thing', the researcher attempted to make the language of the PLS accessible to native and non-native English speakers. Despite this, it would be ideal, if in further studies, the PLS were translated into some of the main African languages like Afrikaans, isiZulu and isiXhosa.

The final consideration on this point is whether the PLS speaks to social problems embedded in South Africa? It most certainly does. Corruption is one of the biggest problems facing the progress of South Africa and this potentially makes the PLS a valuable tool to identify people who could drive the change back to value-based behaviour.

Considering the above, can the PLS thus claim to be a South African test? The researcher is inclined to state that indeed it is, albeit that further research, as recommended above, would certainly serve to strengthen this claim.

The PLS is an aggregate value-based leadership scale. A study in which it is measured together with a scale from any one of the four value-based leadership theories (transformational, authentic, servant or ethical) would serve to establish its discriminant and convergent validity. Such a study could also be valuable in establishing which dimensions of the PLS show discrimination and which converge, with the subscales of any one of the four value-based leader theories, further proving its claim to be an aggregate scale of the value-based leadership theories.

Discriminant validity of the subscales of the PLS should be investigated in more detail in future research. As can be seen from the PHI matrix of the PLS in Table 5.1, the correlations between the PLS dimensions are very high. Slightly lower correlations would be preferable as the current result could mean that the dimensions do not discriminate adequately and that items of the PLS all load onto one factor, principled leadership, instead of separate dimensions within the concept of principled leadership.

Table 5.1. *PHI matrix of the PLS*

PHI						
	IntValue	SelfAwar	PrincStr	OtherCen	Stewards	BalProce
IntValue	1.000					
SelfAwar	0.922	1.000				
PrincStr	0.942	0.922	1.000			
OtherCen	0.919	0.937	0.954	1.000		
Stewards	0.973	0.926	0.985	0.965	1.000	
BalProce	0.928	0.989	0.907	0.976	0.913	1.000

Note: IntValue: internalised values; SelfAwar: self-awareness; PrincStr: principled strategist; OtherCen: other-centred; Steward: stewardship; BalProce: balanced processing

Having separate dimensions as they currently are, is however useful if the scale would be used for development purposes. The dimensions create a logical grouping of behaviours around which personal development plans can be created.

The PLS was developed as an other-rating scale. It would be valuable to expand the PLS to a self-rating scale and to correlate the data of the other-rating and self-rating scales in order to identify gaps. This would allow the scale to be used as a 360-degree assessment tool. In practice this is useful as it allows for the leader's self-perception to be compared with the perceptions that his/her followers have about his/her behaviour. This would most likely lead to

better insights and development opportunities than the use of an other-rating scale, in isolation, would. Furthermore, an other-rating scale is difficult to use during a selection process if a candidate outside of an organisation is considered for appointment. In such a case, the applicant would have to be rated by others in his/her current organisation, who may not be aware that he/she is in the job market. A self-rating scale would not expose his/her intentions to quit a current position, and would provide insights into the candidate's view of his/her own principled leader behaviour.

The PLS was correlated with its antecedents and outcomes as a whole, rather than by dimension. It may be useful to know what the extent is of the effect of the separate dimensions of the PLS on trust in the leader, or directly on the various OCB dimensions. This would assist with knowing which behaviours to focus on developing if trust, or any of the OCB dimensions, is a problem in an organisation.

The structural model showed positive relationships between the variables of the model. This leads to the assumption that principled leadership has a positive effect on trust in the leader, and thus ultimately on OCB. To substantiate this claim, the researcher suggests that a longitudinal study which tests the relationship between principled leadership, trust and OCB over time, would be valuable. Most desirable would be a longitudinal study in a corrupt organisation, which wishes to become ethical. Measuring the degree of principled behaviour over time, while instituting interventions to develop principled behaviour in leaders of such an organisation, would be invaluable in establishing the true, practical worth of the PLS.

While converting the self-rating scale of the Moral Competency Inventory (MCI) into an adapted other-rating scale was necessary for the sake of this study, and was not in itself an aim of the study, doing so yielded some pleasing results. The scale showed adequate to excellent internal reliability and the model fitted the underlying data reasonably well, rendering it construct valid. A more detailed study on the item and factor analysis of the adapted MCI, with analysis of the modification indices, may reveal methods by which the reliability of the third dimension, Compassion, could be increased and the overall fit of the model improved.

Finally, this study analysed the reliability and factor structure of the adapted MCI by loading the items onto the four principles, rather than onto the underlying moral intelligence competencies. The researcher suggests that further analysis of the MCI is conducted into a model where the items load on their related moral intelligence competencies, which in turn

load on the four moral intelligence principles. It would seem that this is the correct full model of the MCI as postulated by Lennick and Kiel (2008).

5.6 Conclusion

In conclusion, this study proved valuable in that a reliable and valid new leadership assessment tool was developed within the South African context. The aim was to develop a scale that combined the salient features of the four main value-based leadership theories into one all-encompassing scale. The results showed that this was successfully achieved.

While further research to validate the findings of this study is suggested, the PLS provides, in its current form, a tool by which the principled behaviour of a leader can be assessed sufficiently. In a country like South Africa, where corrupt leader behaviour appears to have seeped into all facets of society, a tool like this can provide organisations with valuable information about applicants during the selection process of leaders. Furthermore, the PLS could be used to identify development areas for incumbents of leadership positions, or to develop those earmarked for leadership positions at a future point in their career.

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APPENDICES**Appendix A: Adapted Moral Competency Inventory**

Key to items measured in each dimension (principle):

Principle	Competency	Items			
Integrity (INT)	Acting consistently with principles, values and beliefs	1	15		
	Telling the truth	8	16	23	
	Standing up for what is right	2	9	17	24
	Keeping promises	3	10	18	25
Responsibility (RES)	Taking responsibility for personal choices	4	11	19	26
	Admitting mistakes and failures	5	12	20	27
	Embracing responsibility for serving others	6	13	21	28
Compassion (COM)	Actively caring about others	7	14	22	29

1. My manager clearly states the principles, values and beliefs that guide his/her actions.	INT
2. My manager will generally confront someone if he/she sees them doing something that isn't right.	INT
3. When my manager agrees to do something, he/she always follows through.	INT
4. When my manager makes a decision that turns out to be a mistake, he/she admits it.	RES
5. My manager owns up to (admits) his/her own mistakes and failures.	RES
6. My manager goes out of his/her way to help others.	RES
7. My manager shows genuine interest in new people he/she meets.	COM
8. I can depend on my manager to tell the truth.	INT
9. When my manager believes that his/her manager is doing something that isn't right, he/she will challenge his/her manager.	INT
10. I can depend on my manager to keep his/her word.	INT
11. When my manager makes a mistake, he/she takes responsibility for correcting the situation.	RES
12. My manager is willing to accept the consequences of his/her mistakes.	RES
13. My manager's leadership approach is to lead by serving others.	RES
14. My manager truly cares about the people he/she works with as people – not just as the 'human capital' needed to produce results.	COM
15. My manager's behaviour is very consistent with the beliefs and values he/she expresses verbally.	INT

16. I think of my manager as an honest person.	INT
17. I believe that if my manager knew that our organisation was engaging in unethical or illegal behaviour, he/she would report it, even if it could have an adverse effect on his/her career.	INT
18. When a situation may prevent my manager from keeping a promise, he/she consults with those involved to renegotiate the agreement.	INT
19. My manager takes ownership (responsibility) of his/her decisions.	RES
20. My manager seems to learn from mistakes he/she has made in the past.	RES
21. My manager pays attention to the development needs of my colleagues and me.	RES
22. My manager is a compassionate person.	COM
23. My manager is able to deliver negative feedback in a respectful way.	INT
24. My manager is the kind of person who stands up for what he/she believes in.	INT
25. When someone asks my manager to keep a matter confidential, he/she does so.	INT
26. When things go wrong, my manager does not blame other circumstances.	RES
27. My manager discusses his/her mistakes with co-workers to encourage tolerance for risk-taking (e.g. trying new ideas, taking initiative) within the team.	RES
28. My manager spends a significant amount of his/her time providing resources and removing obstacles for me and my colleagues.	RES
29. Because my manager cares about those who report to him/her, he/she actively supports the efforts of subordinates to accomplish important personal goals.	COM

Appendix B: PLS Goodness of Fit Statistics**Goodness of Fit Statistics**

Degrees of Freedom = 1524

Minimum Fit Function Chi-Square = 3388.755 (P = 0.0)

Normal Theory Weighted Least Squares Chi-Square = 3735.796 (P = 0.0)

Satorra-Bentler Scaled Chi-Square = 2918.826 (P = 0.0)

Estimated Non-centrality Parameter (NCP) = 1394.826

90 Percent Confidence Interval for NCP = (1245.881 ; 1551.522)

Minimum Fit Function Value = 11.334

Population Discrepancy Function Value (F0) = 4.665

90 Percent Confidence Interval for F0 = (4.167 ; 5.189)

Root Mean Square Error of Approximation (RMSEA) = 0.0553

90 Percent Confidence Interval for RMSEA = (0.0523 ; 0.0584)

P-Value for Test of Close Fit (RMSEA < 0.05) = 0.00212

Expected Cross-Validation Index (ECVI) = 10.625

90 Percent Confidence Interval for ECVI = (10.127 ; 11.149)

ECVI for Saturated Model = 11.057

ECVI for Independence Model = 410.366

Chi-Square for Independence Model with 1596 Degrees of Freedom = 122585.527

Independence AIC = 122699.527

Model AIC = 3176.826

Saturated AIC = 3306.000

Independence CAIC = 122967.643

Model CAIC = 3783.614

Saturated CAIC = 11081.352

Normed Fit Index (NFI) = 0.976

Non-Normed Fit Index (NNFI) = 0.988

Parsimony Normed Fit Index (PNFI) = 0.932

Comparative Fit Index (CFI) = 0.988

Incremental Fit Index (IFI) = 0.988

Relative Fit Index (RFI) = 0.975

Critical N (CN) = 170.573

Root Mean Square Residual (RMR) = 0.0367

Standardized RMR = 0.0470

Goodness of Fit Index (GFI) = 0.695

Adjusted Goodness of Fit Index (AGFI) = 0.669

Parsimony Goodness of Fit Index (PGFI) = 0.641

Appendix C: Adapted MCI Goodness of Fit Statistics**Goodness of Fit Statistics**

Degrees of Freedom = 374

Minimum Fit Function Chi-Square = 1465.035 (P = 0.0)

Normal Theory Weighted Least Squares Chi-Square = 1584.656 (P = 0.0)

Satorra-Bentler Scaled Chi-Square = 1005.583 (P = 0.0)

Estimated Non-centrality Parameter (NCP) = 631.583

90 Percent Confidence Interval for NCP = (541.251 ; 729.563)

Minimum Fit Function Value = 4.900

Population Discrepancy Function Value (F0) = 2.112

90 Percent Confidence Interval for F0 = (1.810 ; 2.440)

Root Mean Square Error of Approximation (RMSEA) = 0.0752

90 Percent Confidence Interval for RMSEA = (0.0696 ; 0.0808)

P-Value for Test of Close Fit (RMSEA < 0.05) = 0.000

Expected Cross-Validation Index (ECVI) = 3.771

90 Percent Confidence Interval for ECVI = (3.469 ; 4.099)

ECVI for Saturated Model = 2.910

ECVI for Independence Model = 137.301

Chi-Square for Independence Model with 406 Degrees of Freedom = 40995.077

Independence AIC = 41053.077

Model AIC = 1127.583

Saturated AIC = 870.000

Independence CAIC = 41189.486

Model CAIC = 1414.514

Saturated CAIC = 2916.145

Normed Fit Index (NFI) = 0.975

Non-Normed Fit Index (NNFI) = 0.983

Parsimony Normed Fit Index (PNFI) = 0.899

Comparative Fit Index (CFI) = 0.984

Incremental Fit Index (IFI) = 0.984

Relative Fit Index (RFI) = 0.973

Critical N (CN) = 131.995

Root Mean Square Residual (RMR) = 0.0404

Standardized RMR = 0.0518

Goodness of Fit Index (GFI) = 0.732

Adjusted Goodness of Fit Index (AGFI) = 0.689

Parsimony Goodness of Fit Index (PGFI) = 0.630

Appendix D: LTS Goodness of Fit Statistics

Goodness of Fit Statistics

Degrees of Freedom = 65

Minimum Fit Function Chi-Square = 209.656 (P = 0.0)

Normal Theory Weighted Least Squares Chi-Square = 223.742 (P = 0.0)

Satorra-Bentler Scaled Chi-Square = 106.565 (P = 0.000883)

Chi-Square Corrected for Non-Normality = 112.093 (P = 0.000258)

Estimated Non-centrality Parameter (NCP) = 41.565

90 Percent Confidence Interval for NCP = (17.131 ; 73.899)

Minimum Fit Function Value = 0.701

Population Discrepancy Function Value (F0) = 0.139

90 Percent Confidence Interval for F0 = (0.0573 ; 0.247)

Root Mean Square Error of Approximation (RMSEA) = 0.0462

90 Percent Confidence Interval for RMSEA = (0.0297 ; 0.0617)

P-Value for Test of Close Fit (RMSEA < 0.05) = 0.636

Expected Cross-Validation Index (ECVI) = 0.530

90 Percent Confidence Interval for ECVI = (0.449 ; 0.638)

ECVI for Saturated Model = 0.609

ECVI for Independence Model = 37.801

Chi-Square for Independence Model with 78 Degrees of Freedom = 11276.382

Independence AIC = 11302.382

Model AIC = 158.565

Saturated AIC = 182.000

Independence CAIC = 11363.531

Model CAIC = 280.863

Saturated CAIC = 610.044

Normed Fit Index (NFI) = 0.991

Non-Normed Fit Index (NNFI) = 0.996

Parsimony Normed Fit Index (PNFI) = 0.825

Comparative Fit Index (CFI) = 0.996

Incremental Fit Index (IFI) = 0.996

Relative Fit Index (RFI) = 0.989

Critical N (CN) = 265.932

Root Mean Square Residual (RMR) = 0.0185

Standardized RMR = 0.0267

Goodness of Fit Index (GFI) = 0.897

Adjusted Goodness of Fit Index (AGFI) = 0.855

Parsimony Goodness of Fit Index (PGFI) = 0.641

Appendix E: OCBS Goodness of Fit Statistics

Goodness of Fit Statistics

Degrees of Freedom = 242

Minimum Fit Function Chi-Square = 389.959 (P = 0.00)

Normal Theory Weighted Least Squares Chi-Square = 382.337 (P = 0.000)

Satorra-Bentler Scaled Chi-Square = 329.448 (P = 0.000155)

Chi-Square Corrected for Non-Normality = 1697.352 (P = 0.0)

Estimated Non-centrality Parameter (NCP) = 87.448

90 Percent Confidence Interval for NCP = (43.947 ; 139.015)

Minimum Fit Function Value = 1.304

Population Discrepancy Function Value (F0) = 0.292

90 Percent Confidence Interval for F0 = (0.147 ; 0.465)

Root Mean Square Error of Approximation (RMSEA) = 0.0348

90 Percent Confidence Interval for RMSEA = (0.0246 ; 0.0438)

P-Value for Test of Close Fit (RMSEA < 0.05) = 0.998

Expected Cross-Validation Index (ECVI) = 1.490

90 Percent Confidence Interval for ECVI = (1.344 ; 1.662)

ECVI for Saturated Model = 2.007

ECVI for Independence Model = 17.449

Chi-Square for Independence Model with 276 Degrees of Freedom = 5169.128

Independence AIC = 5217.128

Model AIC = 445.448

Saturated AIC = 600.000

Independence CAIC = 5330.019

Model CAIC = 718.267

Saturated CAIC = 2011.135

Normed Fit Index (NFI) = 0.936

Non-Normed Fit Index (NNFI) = 0.980

Parsimony Normed Fit Index (PNFI) = 0.821

Comparative Fit Index (CFI) = 0.982

Incremental Fit Index (IFI) = 0.982

Relative Fit Index (RFI) = 0.927

Critical N (CN) = 269.735

Root Mean Square Residual (RMR) = 0.0313

Standardized RMR = 0.0516

Goodness of Fit Index (GFI) = 0.904

Adjusted Goodness of Fit Index (AGFI) = 0.881

Parsimony Goodness of Fit Index (PGFI) = 0.729

Appendix F: Goodness of Fit Statistics: Measurement Model of the Structural Model

Goodness of Fit Statistics

Degrees of Freedom = 203

Minimum Fit Function Chi-Square = 407.001 (P = 0.00)

Normal Theory Weighted Least Squares Chi-Square = 407.859 (P = 0.00)

Satorra-Bentler Scaled Chi-Square = 353.278 (P = 0.00)

Chi-Square Corrected for Non-Normality = 1052.423 (P = 0.0)

Estimated Non-centrality Parameter (NCP) = 150.278

90 Percent Confidence Interval for NCP = (101.969 ; 206.450)

Minimum Fit Function Value = 1.361

Population Discrepancy Function Value (F0) = 0.503

90 Percent Confidence Interval for F0 = (0.341 ; 0.690)

Root Mean Square Error of Approximation (RMSEA) = 0.0498

90 Percent Confidence Interval for RMSEA = (0.0410 ; 0.0583)

P-Value for Test of Close Fit (RMSEA < 0.05) = 0.508

Expected Cross-Validation Index (ECVI) = 1.516

90 Percent Confidence Interval for ECVI = (1.354 ; 1.704)

ECVI for Saturated Model = 1.692

ECVI for Independence Model = 104.609

Chi-Square for Independence Model with 231 Degrees of Freedom = 31234.216

Independence AIC = 31278.216

Model AIC = 453.278

Saturated AIC = 506.000

Independence CAIC = 31381.699

Model CAIC = 688.467

Saturated CAIC = 1696.057

Normed Fit Index (NFI) = 0.989

Non-Normed Fit Index (NNFI) = 0.994

Parsimony Normed Fit Index (PNFI) = 0.869

Comparative Fit Index (CFI) = 0.995

Incremental Fit Index (IFI) = 0.995

Relative Fit Index (RFI) = 0.987

Critical N (CN) = 214.954

Root Mean Square Residual (RMR) = 0.00844

Standardized RMR = 0.0219

Goodness of Fit Index (GFI) = 0.890

Adjusted Goodness of Fit Index (AGFI) = 0.863

Parsimony Goodness of Fit Index (PGFI) = 0.714

Appendix G: Goodness of Fit Statistics: Structural Model

Goodness of Fit Statistics

Degrees of Freedom = 206

Minimum Fit Function Chi-Square = 452.578 (P = 0.0)

Normal Theory Weighted Least Squares Chi-Square = 466.852 (P = 0.0)

Satorra-Bentler Scaled Chi-Square = 404.556 (P = 0.00)

Chi-Square Corrected for Non-Normality = 1124.198 (P = 0.0)

Estimated Non-centrality Parameter (NCP) = 198.556

90 Percent Confidence Interval for NCP = (145.286 ; 259.619)

Minimum Fit Function Value = 1.514

Population Discrepancy Function Value (F0) = 0.664

90 Percent Confidence Interval for F0 = (0.486 ; 0.868)

Root Mean Square Error of Approximation (RMSEA) = 0.0568

90 Percent Confidence Interval for RMSEA = (0.0486 ; 0.0649)

P-Value for Test of Close Fit (RMSEA < 0.05) = 0.0857

Expected Cross-Validation Index (ECVI) = 1.667

90 Percent Confidence Interval for ECVI = (1.489 ; 1.872)

ECVI for Saturated Model = 1.692

ECVI for Independence Model = 104.609

Chi-Square for Independence Model with 231 Degrees of Freedom = 31234.216

Independence AIC = 31278.216

Model AIC = 498.556

Saturated AIC = 506.000

Independence CAIC = 31381.699

Model CAIC = 719.634

Saturated CAIC = 1696.057

Normed Fit Index (NFI) = 0.987

Non-Normed Fit Index (NNFI) = 0.993

Parsimony Normed Fit Index (PNFI) = 0.880

Comparative Fit Index (CFI) = 0.994

Incremental Fit Index (IFI) = 0.994

Relative Fit Index (RFI) = 0.985

Critical N (CN) = 190.308

Root Mean Square Residual (RMR) = 0.00969

Standardized RMR = 0.0239

Goodness of Fit Index (GFI) = 0.876

Adjusted Goodness of Fit Index (AGFI) = 0.847

Parsimony Goodness of Fit Index (PGFI) = 0.713

Appendix H: Phases of research plan and related hypotheses

Phases of the research plan	Sub-phase of research plan (where applicable)	Substantive and statistical hypotheses related to phase of research plan
Phase 1: Specification of the PLS		Substantive research hypothesis 1
Phase 2: Specification of the ancillary scales		
Phase 3: Sample selection and data collection		
Phase 4: PLS Item and factor analysis	a) PLS item analysis b) PLS factor analysis	
Phase 5: Reliability analysis of the ancillary scales		
Phase 6: Evaluation of the fit of the PLS's measurement model and validation of hypothesised paths of the PLS's measurement model	a) Evaluation of fit of PLS's measurement model b) Validation of PLS path coefficients by assessing factor loadings from LAMBDA-X matrix. c) Power assessment (PLS)	Statistical hypotheses: Exact and close fit null and alternate hypotheses H_{03} and H_{04}
Phase 7: Evaluation of the fit of the measurement models of the ancillary scales (adapted MCI, LTS and OCBS)		Statistical hypotheses: Exact and close fit null and alternate hypotheses H_{05} and H_{06} (MCI), H_{07} and H_{08} (LTS), H_{09} and H_{010} (OCBS)
Phase 8: Specification of the overall measurement model underlying the structural model		
Phase 9: Specification of the structural model		Substantive research hypothesis 2
Phase 10: Evaluation of the fit of the structural model and validation of hypothesised paths of the structural model	a) Evaluation of fit of overall measurement model underlying the structural model b) Evaluation of the fit of the structural model c) Validation of the path coefficients of the hypothesised paths of the structural model d) Power assessment (Structural model) e) Model modification	Statistical hypotheses: Exact and close fit null and alternate hypotheses H_{011} and H_{012} Statistical hypotheses: Exact and close fit null and alternate hypotheses H_{013} and H_{014} Statistical research hypotheses: H_{015} and H_{a15} : Moral Intelligence's effect on PLS H_{016} and H_{a16} : PLS's effect on Trust in leader H_{017} and H_{a17} : Trust in leader's effect on OCB

Appendix I: SPSS Computation of item parcels

Principled Leadership Scale Parcels

COMPUTE PLS_1=Mean(PCL1,PCL2,PCL3,PCL4,PCL5,PCL6).
COMPUTE PLS_2=Mean(PCL7,PCL8,PCL9,PCL10,PCL11,PCL12).
COMPUTE PLS_3=Mean(PCL13,PCL14,PCL15,PCL16,PCL17,PCL18).
COMPUTE PLS_4=Mean(PCL19,PCL20,PCL21,PCL22,PCL24,PCL25).
COMPUTE PLS_5=Mean(PCL26,PCL27,PCL28,PCL29,PCL30,PCL31).
COMPUTE PLS_6=Mean(PCL32,PCL33,PCL34,PCL35,PCL36,PCL37).
COMPUTE PLS_7=Mean(PCL38,PCL39,PCL40,PCL41,PCL42,PCL43,PCL44).
COMPUTE PLS_8=Mean(PCL45,PCL46,PCL47,PCL48,PCL49,PCL50,PCL51).
COMPUTE PLS_9=Mean(PCL52,PCL53,PCL54,PCL55,PCL56,PCL57,PCL58).

Moral Competency Inventory Parcels

COMPUTE MCI_1=Mean(MCI1,MCI8,MCI2,MCI3,MCI4,MCI5).
COMPUTE MCI_2=Mean(MCI6,MCI7,MCI15,MCI16,MCI9,MCI10).
COMPUTE MCI_3=Mean(MCI11,MCI12,MCI13,MCI14,MCI23,MCI17).
COMPUTE MCI_4=Mean(MCI18,MCI19,MCI20,MCI21,MCI22,MCI24).
COMPUTE MCI_5=Mean(MCI25,MCI26,MCI27,MCI28,MCI29).

Trust in Leader Scale Parcels

COMPUTE LTS_1=Mean(TIL1,TIL2,TIL3,TIL4).
COMPUTE LTS_2=Mean(TIL5,TIL6,TIL7,TIL8).
COMPUTE LTS_3=Mean(TIL9,TIL10,TIL11,TIL12,TIL13).

Organisational Citizenship Behaviour Scale Parcels

COMPUTE OCB_1=Mean(OCB1,OCB3,OCB2,OCB6,OCB4).
COMPUTE OCB_2=Mean(OCB10,OCB18,OCB5,OCB9,OCB8).
COMPUTE OCB_3=Mean(OCB13,OCB21,OCB7,OCB11,OCB14).
COMPUTE OCB_4=Mean(OCB15,OCB22,OCB116,OCB12,OCB17).
COMPUTE OCB_5=Mean(OCB23,OCB24,OCB19,OCB20).

Appendix J: Power assessment for the PLS measurement model

Compute Power for RMSEA

Alpha	.05
Degrees of Freedom	1524
Sample Size	300
Null RMSEA	.05
Alt. RMSEA	.08
Generate R Code	

Results from Rweb

R version 3.1.1 (2014-07-10) -- "Sock it to Me"
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 Platform: x86_64-pc-linux-gnu (64-bit)

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 'help.start()' for an HTML browser interface to help.
 Type 'q()' to quit R.

```
> postscript(file= "/ftp/ftplib/pub/ADE-User/data/Rout.35932.ps", width=8,
height=8)
> .libPaths(c("/panhome/jthioulo/Rlib", "/www/cgi-
bin/Rweb/LIB", "/usr/remote/R_LIBS"))
> library(ade4)
> library(seqinr)
>
> #Power analysis for CSM
>
> alpha <- 0.05 #alpha level
> d <- 1524 #degrees of freedom
> n <- 300 #sample size
> rmsea0 <- 0.05 #null hypothesized RMSEA
> rmseaa <- 0.08 #alternative hypothesized RMSEA
>
> #Code below this point need not be changed by user
> ncp0 <- (n-1)*d*rmsea0^2
> ncpa <- (n-1)*d*rmseaa^2
>
> #Compute power
> if(rmsea0<=" " qchisq(alpha,d,ncp="ncp0,lower.tail=F)" pow=" "
pchisq(cval,d,ncp="ncpa,lower.tail=F)" }=" "> if(rmsea0>rmseaa) {
+   cval <- qchisq(1-alpha,d,ncp=ncp0,lower.tail=F)
+   pow <- 1-pchisq(cval,d,ncp=ncpa,lower.tail=F)
+ }
> print(pow)
[1] 1
```

Appendix K: Power assessment for the structural model

Compute Power for RMSEA

Alpha	.05
Degrees of Freedom	206
Sample Size	300
Null RMSEA	.05
Alt. RMSEA	.08
Generate R Code	

Results from Rweb

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Type 'demo()' for some demos, 'help()' for on-line help, or
 'help.start()' for an HTML browser interface to help.
 Type 'q()' to quit R.

```
> postscript(file= "/ftp/ftplib/pub/ADE-User/data/Rout.4789.ps", width=8,
height=8)
> .libPaths(c("/panhome/jthioulo/Rlib", "/www/cgi-
bin/Rweb/LIB", "/usr/remote/R_LIBS"))
> library(ade4)
> library(seqinr)
>
> #Power analysis for CSM
>
> alpha <- 0.05 #alpha level
> d <- 206 #degrees of freedom
> n <- 300 #sample size
> rmsea0 <- 0.05 #null hypothesized RMSEA
> rmseaa <- 0.08 #alternative hypothesized RMSEA
>
> #Code below this point need not be changed by user
> ncp0 <- (n-1)*d*rmsea0^2
> ncpa <- (n-1)*d*rmseaa^2
>
> #Compute power
> if(rmsea0<=rmseaa) {
+   qchisq(alpha,d,ncp="ncp0,lower.tail=F)" pow="
+   pchisq(cval,d,ncp="ncpa,lower.tail=F)" }=" "> if(rmsea0>rmseaa) {
+   cval <- qchisq(1-alpha,d,ncp=ncp0,lower.tail=F)
+   pow <- 1-pchisq(cval,d,ncp=ncpa,lower.tail=F)
+ }
> print(pow)
[1] 0.9999978
```