UNIVERSITEIT STELLENBOSCH UNIVERSITY

DEVELOPMENT OF AN ETHICAL LEADERSHIP BEHAVIOUR SCALE

BY

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DECLARATION

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Helena Buys

April 2019

ABSTRACT

In recent years, ethical scandals have become almost commonplace, both in South Africa and internationally. Unethical behaviour is not a new phenomenon and no organisation is immune to its effects. Organisational leaders play a critical role in establishing an ethical culture through role modelling. Ethical leadership is based on the principle of right and wrong behaviour towards others. This style of leading can help to establish firm foundations for acceptable conduct, inspire employees and can lead to the creation of ethical structures and accountability systems.

This study aims to satisfy the need for ethical organisational leaders by developing a valid and reliable ethical leadership assessment that is specific to the South African context. The Ethical Leadership Behaviour Scale (ELBS) was developed through a scientifically rigorous approach, which resulted in a multi-dimensional scale. These five dimensions were conceptually defined, and items were developed to measure each aspect of the definition.

The data collection process involved the use of an electronic version of the questionnaire, with a total of 202 completed forms. Empirical testing of the theorised model and its hypotheses included an item analysis and exploratory factor analysis (EFA) on each ELBS subscale, as well as a confirmatory factor analysis (CFA) on the overall ELBS measurement model. The results of these analyses showed satisfactory reliability and unidimensionality for all five subscales. The CFA for the five-factor model did not show close fit and a further investigation into the results suggested the presence of a broad, general ethical leadership factor. Consequently, the five-factor model was extended into a bi-factor model, where all the items were specified to load on their designated dimension as well as the general factor. The bi-factor model showed close fit across various fit indices.

Regarding its contribution to research, this study resulted in the development of a new measure for ethical leadership that is potentially reliable and valid for the South African context. The ELBS can be used to develop organisational leaders by identifying specific areas of their ethical leadership style that need improvement. The limitations and recommendations made by this study provide useful guidelines for future research.

OPSOMMING

Etiese skandale raak al hoe meer algemeen in die Suid-Afrikaanse en internasionale konteks. Onetiese gedrag is nie 'n nuwe verskynsel nie, en geen organisasie val buite sy greep nie. Organisatoriese leiers speel 'n kritiese rol in die skepping van 'n etiese kultuur deur hul optrede as 'n etiese rolmodel. Etiese leierskap is gebaseer op die beginsel van regte en verkeerde optrede teenoor ander. Die implementering van hierdie leierskapstyl kan dus lei tot die vestiging van aanvaarbare en geïnspireerde gedrag, asook die skepping van etiese sisteme en strukture wat verantwoordbaarheid beklemtoon.

Hierdie studie beoog om die behoefte aan etiese leierskap te bevredig deur die ontwerp van 'n geldige en betroubare meetinstrument vir die Suid-Afrikaanse konteks. Die *Ethical Leadership Behaviour Scale (ELBS)* is ontwikkel op 'n streng wetenskaplike wyse, wat gelei het tot 'n multi-dimensionele skaal. Die vyf dimensies is konseptueel gedefinieer en items is ontwikkel om elke aspek daarvan te meet.

Die data-insamelingsfase het gebruik gemaak van 'n elektroniese weergawe van die vraelys, waarna 202 voltooide vraelyste ontvang is. Die empiriese toetsing van die model en sy hipoteses het itemontleding en eksploratiewe faktorontleding ingesluit, asook bevestigende faktorontleding. Die resultate van die eersgenoemde analises het bevredigende betroubaarheid en eendimensionaliteit vir al vyf subskale van die Ethical Leadership Behaviour Scale (ELBS) getoon. Die bevestigende faktorontleding op die vyf-faktor model het nie tot 'n goeie passing vir die algehele metingsmodel gelei nie. Die statistiese resultate het wel die teenwoordigheid van 'n breë, algemene etiese leierskapsfaktor voorgestel. Gevolglik is die metingsmodel tot 'n bi-faktor model aangepas sodat al die etiese leierskapsitems op hul onderskeie dimensies laai, asook op die algemene leierskapsfaktor. Die bi-faktor metingsmodel het goeie passing verkry.

Hierdie studie lewer 'n unieke bydrae tot huidige navorsing aangesien dit gelei het tot die ontwikkeling van 'n nuwe etiese leierskapsvraelys wat potensieel geldig en betroubaar is vir die Suid-Afrikaanse konteks. Die ELBS kan as 'n hulpbron vir die ontwikkeling van leiers in organisasies gebruik word. Aangesien die skaal multi-dimensioneel is, is dit moontlik om spesifieke terugvoer aan leiers te gee rakende hulle

leierskapstyl en ontwikkelingsareas. Die leemtes en aanbevelings van die studie verskaf bruikbare riglyne vir toekomstige navorsing.

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Father, I am a small grain of sand in the palm of your hand. Still, you choose me. You are my Teacher, my Wisdom, and my Strength. Nothing compares to Your presence. To my family, thank you for your unwavering support and affection. My parents, Callie and Helena, I honour you for your selfless nature and Godly character. All that I am is because of you. You are my inspiration. Zander, my confidant and my best friend, thank you for being my biggest advocate and my partner in life. Our marriage gives me great joy, and I am excited for our future together.

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To those mentioned, may God bless you and keep you. "Those who trust in the Lord are like Mount Zion, which can never be shaken, never be moved. As the mountains surround Jerusalem, so the Lord surrounds his people, now and forever" (Psalm 125:1-2, Good News Translation).

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CHAPTER 1

INTRODUCTION, RESEARCH OBJECTIVE, AND OUTLINE OF THE STUDY

1.1. INTRODUCTION

In recent years, ethical scandals have become almost commonplace, both in South Africa and internationally. The devastating collapse of Enron in 2001 had many saying, 'never again'. The American government tightened the reins in terms of corporate financial disclosures through the Sarbanes-Oxley Act, while researchers raced to develop ways to assess the ethics of leaders (e.g. Brown, Treviño & Harrison, 2005; De Hoogh & Den Hartog, 2008; Kalshoven, Den Hartog & De Hoogh, 2011; Engelbrecht, Heine & Mahembe, 2017, Spangenberg & Theron, 2005). A modest decade later, the near-collapse of Steinhoff put thousands of jobs at risk globally and cemented South Africa's association with unethical behaviour and corruption.

The most recent Corruption Perceptions Index (2018) has established that most countries are making little or no progress in putting an end to corruption. South Africa has received a raking of 71 (out of 180 countries) in terms of perceived corruption. Unfortunately, this perception is not without its merit. With a former president on trial for corruption, ongoing investigations into state capture, Gupta leaks, government officials being publicly exploited, and widespread corporate fraud, South Africa seems to be desensitised to unethical behaviour. Fortunately, there is hope.

Former President Nelson Mandela famously set an example of reconciliation and forgiveness instead of personal revenge. Former Public Protector, Thuli Madonsela, bravely exposed those involved in state capture and fiercely campaigned for the establishment of ethical leaders.   Internationally, German Chancellor Angela Merkel has been praised for her "steadfast moral leadership in a world where it is in short supply" (Vick, 2015, p. 3).

Unethical behaviour, of course, is not a new phenomenon. It is not limited to the public sector, and no organisation is beyond its reach. Aside from the political arena, organisations also need to be held accountable for the society they operate in. The way organisations function is largely determined by the ethical climate set by top management (Eisenbeiss, 2012, Schwartz, Dunfee & Kline, 2005).   Therefore,

organisational leaders play a critical role in setting expectations for ethical behaviour. In the words of Ciulla (1995, p.6), "The more defective our leaders are, the greater our longing to have highly ethical leaders."

For this longing to become a reality, there must be action. Firstly, organisations should equip themselves to select and develop highly ethical leaders. Secondly, the culture of tolerance toward unethical behaviour should be abolished.

Ethical leadership is based on the premise of right or wrong behaviour toward others (Van Aswegen & Engelbrecht, 2009). This style of leading drives productivity through ethical role modelling (Brown, et al., 2005; Engelbrecht, Wolmarans, & Mahembe, 2017; Mayer, Kuenzi, Greenbaum, Bardes, & Salvador, 2009), while controlling counterproductive work behaviour (Brown & Treviño, 2006; Mayer et al., 2009). South Africa needs ethical leaders in organisations to establish firm foundations for acceptable conduct, to inspire employees and to put structures in place that will ensure accountability. In this study, it is suggested that ethical leadership should be considered the bridge between corruption and effectiveness.

Following the two-fold call to action, it is suggested that this study could aim to satisfy the need for ethical leaders by developing a valid and reliable ethical leadership assessment that is specific to the South African context. This will assist organisations in dealing with unethical behaviour in several ways: (a) In the field of organisational management, it is widely believed that a construct can only be managed if it can be measured. As a management tool, a measure of ethical leadership could be used for developmental purposes by identifying specific areas in which the leader can improve his/her ethical leadership style; (b) Being able to identify ethical leaders would allow organisations to incorporate ethical leadership as a selection criteria; (c) Strategically placing ethical leaders in the organisation would allow follower behaviour to be indirectly influenced through role modelling; (d) The consequences of ethical leadership, such as increased productivity, would have a positive effect on the holistic functioning of the organisation.

The call for action in this introduction was two-fold. Firstly, it was suggested that organisations should equip themselves to select and develop highly ethical leaders. The study aims to address this with the development of a valid and reliable ethical

leadership assessment. Secondly, there was an appeal to abolish the culture of tolerance toward unethical behaviour, "for what partnership have righteousness and lawlessness, or what fellowship has light with darkness?" (2 Corinthians 6:14, New American Standard Bible). Ultimately, ethics does not allow for passivity, and light and darkness cannot co-exist in the same room.

1.2. RESEARCH INITIATING QUESTION

The research-initiating question for this study was formulated as: What constitutes ethical leadership and how can this behaviour be measured validly, so that ethical leaders can be identified during selection and developed within an organisation?

1.3. OBJECTIVE OF THE STUDY

The primary objective of this study is to develop a reliable and valid ethical leadership scale that measures organisational ethical leadership behaviours in a South African context. Thus, the construct of ethical leadership is conceptualised and operationalised by using a newly developed ethical leadership questionnaire. This primary objective can be translated into the following specific objectives:

- To determine the specific organisational behaviours that would be relevant to ethical leadership;
- To use the information derived from the literature to define the concept of ethical leadership and its underlying dimensions;
- To develop a reliable and valid Ethical Leadership Behaviour Scale (ELBS);
- To measure ethical leadership behaviour within a multi-cultural South African context;
- To test the absolute and relative fit of the measurement model;
- To provide recommendations for future research and managerial implications of the study.

The following section describes the generic steps of scale development. These steps facilitated the development of the ELBS, thereby guiding the researcher in achieving the primary objective of the study.

1.4. GENERIC SCALE DEVELOPMENT STEPS

The study was guided by using scientific steps of scale development. Figure 1.1 illustrates these generic steps. The current study will complete Steps 1 to 6.
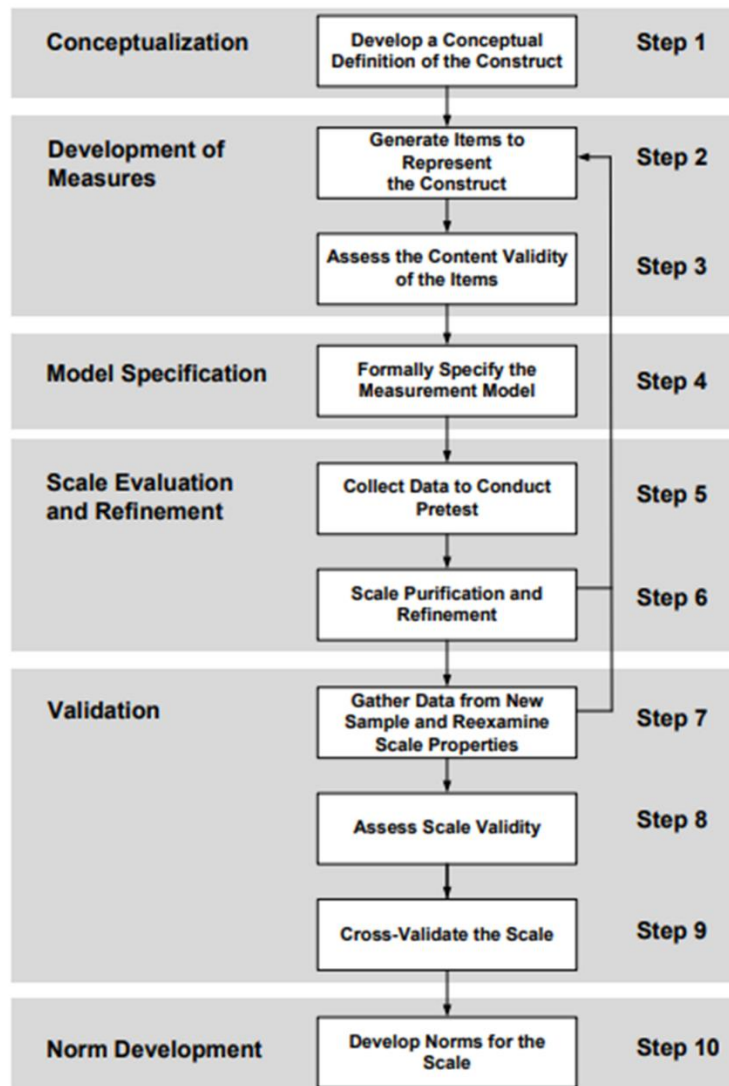
Figure 1.1

Generic Steps in Scale Development

(Mackenzie, Podsakoff & Podsakoff, 2011)

Guion (2011) emphasises that an assessment procedure needs to be developed with the necessary care and understanding. The same author describes the first step of test development. This involves compiling a conceptual definition and purpose of

measurement. During this step the researcher should clearly state what is intended to be measured.

Ultimately, the construct should be fully defined in terms of boundaries and distinctions for the researcher to establish a theory of the attribute that is intended to be measured. The conceptual definitions identified in this step should be useful to the organisation. In terms of usefulness, it should imply important individual differences; be subject to empirical quantifications; and remain reasonably stable over time (Guion, 2011). Ideally, the conceptualisation of the construct should provide a "reasonable assimilation and synthesis of ideas" (Kline, 2005).

The next step would be test specification (Guion, 2011). In this step the test developer specifies some observations that will fit the construct and conditions or circumstances that would be appropriate for making them.

Following test specification, the researcher will generate an item pool (Murphy & Davidshofer, 1988). This could be done either by means of consulting the literature; using subject matter experts to assist in the construction of scale items; or using a rational approach to item writing (Kline, 2005). Guion (2011) stresses that good, professional judgement is required for developing an item of any kind, yet he acknowledges that good judgement also requires experience.

In terms of developing item types, Murphy and Davidshofer (1988) claim that the most fundamental decision that test developers face is the type of items they should use. Further, good items should be regarded as having face validity; be written in clear and simple language; avoid negative words; and have only one correct answer. Items generally comprise of a stem, a correct response, and a set of distractions (Guion, 2011). Scale construction would also have to be done.   It involves the items developed in the previous steps to be grouped together within certain scales (Murphy & Davidshofer, 1988).

The researcher would also need to establish the design of the test and to score responses. This would further involve establishing whether open-ended, close-ended (e.g. dichotomous responses), or continuous responses will be utilised (Kline, 2005).

Following the previous step, the researcher would then initiate pilot studies, as described by Guion (2011). During this step data will be collected, and it will also involve sampling and screening (Kline, 2005). As described by Guion (2011), the researcher will start preliminary studies, where a sample would complete the assessment in a trial version of the test to see whether it is functioning as expected.

Pilot studies would also involve conventional item analyses to examine whether the test items work the way they were intended to. Item analysis by means of Item Response Theory (IRT) models, which have two or more parameters for the item characteristic curve, could also provide corresponding item statistics. Pilot studies will then provide data for the evaluation of tests in terms of reliability and validity analyses. This provides the researcher with the opportunity to change the test, if needed, before making it operational.

The development of the actual test will be followed by attempts at normalising and standardising. Hereafter the test would be publicised and revised (Murphy & Davidshofer, 1988).

1.5. OUTLINE OF THE STUDY

The study was structured in the following way. Chapter 1 introduced the importance of ethical leadership for organisations, and the need to measure it. The ethical leadership construct was conceptualised in Chapter 2 and several existing scales were reviewed to understand previous attempts to operationalize the construct. Chapter 2 concludes with suggested dimensions and items for the new measure of ethical leadership.

Chapter 3 outlines the research methodology of the study, specifically by means of a description of the development of the Ethical Leadership Behaviour Scale (ELBS), the research problem and substantive research hypotheses, the sample group, research design, missing values, and statistical analyses.

In Chapter 4 the results of the statistical analyses are discussed in detail. Finally, Chapter 5 concludes with practical implications of the results obtained and it highlights suggestions to address the limitations of the study.

CHAPTER 2
LITERATURE REVIEW

2.1. INTRODUCTION

Ciulla (1995) noted that most professionals who write about leadership speak with great reverence about the importance of ethics in leadership. Ethical Leadership as a construct has gained momentum as a scientific construct, and the body of available research is steadily growing (Eisenbeiss, Van Knippenberg, & Fahrbach, 2015). The need for rigorous, systematic research on ethical leadership persists (Brown et al., 2005). As Ciulla (1995, p.3) accurately predicted: "The more defective our leaders are, the greater our longing to have highly ethical leaders."

In the hope to fulfil this need, this section aims to give a comprehensive outline of previous research in the field of Ethical Leadership. The literature review is done with the expectation that a foundational understanding of the nature of Ethical Leadership will direct current and future research efforts. The section will describe conceptual elements of Ethical Leadership, review previous attempts to measure the construct, and suggest new dimensions and items to measure Ethical Leadership in a South African context.

2.2. CONCEPTUALISATION OF ETHICAL LEADERSHIP

In conceptualising ethical leadership, the researcher aims to describe the mechanisms underlying the construct. Thus, ethical leadership is conceptualised as a distinct form of leadership, and theoretical underpinnings such as social exchange theory and social learning are explained. Following this is a discussion of ethical leaders as moral people and moral managers. Integrity is also highlighted as a vital part in ethical leadership research. The complexity of ethical leadership is explained through reviewing previous conceptualisations, and finally, the construct is defined.

2.2.1. Ethical Leadership: A Distinct Form of Leadership.

In its earliest conceptualisations, Ethical Leadership was related to charismatic and transformational leadership (e.g. Burns, 1978). Many established leadership styles (such as transformational, authentic, spiritual, and servant leadership) still recognise

an 'ethical' or 'moral' dimension, where these terms are used interchangeably (Kanungo & Mendoca, 1996). However, a growing body of researchers has been conceptualising ethical leadership as a distinct leadership style, rather than a component of other leadership styles (Kanungo, 2001; Brown et al., 2005; De Hoogh & Den Hartog, 2008; Kalshoven, Den Hartog, & De Hoogh, 2011). This research trend leads to a scientific enquiry of whether ethical leadership is worth examining as a distinct leadership style, and how this construct is similar and different to other established forms of leadership.

A recent meta-analysis has suggested a partial overlap between Ethical Leadership and other leadership styles (Bedi, Alpaslan, & Green, 2016). The study showed that Ethical Leaders might use behaviour from both Transactional and Transformational Leadership styles, such as rewarding ethical behaviour and engaging as role models for ethical behaviour. Eisenbeiss (2012, p. 792) has remarked that "by definition, transformational leaders are assumed to demonstrate high ethical standards, authentic leaders are assumed to consider the ethical consequences of their decisions, and servant leaders are assumed to have a strong sense of responsible morality."

In contrast, there is also evidence to support Ethical Leadership as a distinct form of leading. The widely used Brown et al. (2005) study on Ethical Leadership was found to be related, yet empirically distinct from authentic leadership (Walumbwa, Avolio, Gardner, Wernsing, & Peterson, 2008). In this sense, although there is an overlap, many theories on leadership do not specify the ethical principles leaders should apply and promote (Eisenbeiss, 2012), which becomes a key distinction between ethical leadership and other forms of leadership with an ethical dimension.

Similarly, Kalshoven, Den Hartog, and De Hoogh (2011) quoted research from numerous authors to demonstrate that other types of leaders may behave unethically if their motivation is selfish (Bass, 1995); if they misuse their power (McClelland,1975); or if their values do not guide behaviours appropriately (Price, 2003). Moreover, the question of whether other types of leaders are ethical, are dependent on their personal moral values, which makes them potential ethical leaders without guarantee (Yasir & Mohamad, 2016).

In concluding this section, it seems that there is an overlap between Ethical Leadership and other leadership styles. However, Ethical Leadership has demonstrated significance as a distinct theoretical construct. It seems that if a leader possesses an ethical leadership style, he/she will almost certainly possess strong intrinsic moral values. This, in turn, will allow him/her to identify specific ethical values to promote in the organisation. These leaders place specific focus on ethical behaviour – they are not, for example, transformational and 'also' ethical. Therefore, the danger in mapping ethical leader behaviour on other forms of leading, will most likely limit the potential of the construct (Bhal & Dadhich, 2011). Accordingly, this study researches Ethical Leadership as a distinct leadership style.

2.2.2. The Theoretical Underpinnings of Ethical Leadership

In further conceptualising ethical leadership, it is imperative to explore this construct as a form of social learning, as well as social exchange (Bandura, 1977; 1986). Social learning theory suggests that followers behave like their leader through imitation and observational learning (Bandura, 1977; 1986). Building on this approach, Brown et al. (2005) suggest that leaders influence the ethical conduct of followers via role modelling and by the rewarding of ethical behaviour. Thus, ethical organisational behaviour is reinforced by the leader (Brown et al., 2005).

Researchers have also studied ethical leadership from with a social exchange approach (Mayer, Kuenzi, Greenbaum, Barders, & Salvador, 2009); Turner, Barling, Epitropaki, Butcher, & Milner, 2002). Generally, advocates of the social exchange approach tend to focus on the concept of reciprocity (Kalshoven et al., 2011). Reciprocity, in the context of ethical leadership, suggests that followers will be willing to reciprocate the positive behaviours of their leaders, such as fair treatment and respect (Cropanzano & Mitchell, 2005; Kalshoven et al., 2011).

Therefore, followers are more likely to reciprocate good treatment from their leader with behaviour that is beneficial to the entire work-group and group effort, and to refrain from behaviours that would be detrimental to their superior, workgroup or the organisation (Mayer et al., 2009). For social learning to take place, it is imperative that

leaders should be seen as credible role models of moral behaviour (Brown & Mitchell, 2010).

In addition to social learning and social exchange theories, a social cognitive approach may also be adopted to explain the relationship between moral identity and ethical leadership. Moral identity is defined as a self-schema that is organised around a set of moral trait associations. It is argued that people differ in the degree to which they experience moral identity as central to their own self-definition. Therefore, from a social cognitive perspective, this difference leads to the idea that the moral self-schema is more cognitively accessible for some people than for others (Mayer, Aquino, Greenbaum, & Kuenzi, 2012).

2.2.3. Moral People, Moral Managers and Integrity

In discussing leadership, the question of management versus leadership is almost always raised. Positive leaders are viewed as trustworthy, honest, reliable and credible people (Toor & Ofori, 2009). Leaders are individuals who use personal power and influence (Khuntia & Suar, 2004).

In contrast, the profile of the manager may represent positional rather than personal power, and deals with resource allocation, organising, budgeting, time scheduling, and controlling (Khuntia & Suar, 2004). Despite the conceptual differences between managers and leaders, these two roles are frequently linked in the organisational context, and both would be viewed as formal leaders within their environment.

Therefore, a reputation for ethical leadership is based on two pillars, identified by Treviño, Hartman, and Brown (2000), namely perceptions of the leader as *both* a moral person and a moral manager.

If the employee perceives his/her manager to be a 'moral person' one would assume that he/she has a good character (Treviño & Brown, 2004). However, most employees in large organisations have no personal contact with their manager and would not have first-hand knowledge of the leader's character (Treviño et al., 2000). Thus, in a practical sense, a good character does not translate to the definition of clear

behavioural expectations and accountability structures (Treviño & Brown, 2004), as illustrated in Figure 2.1 below.
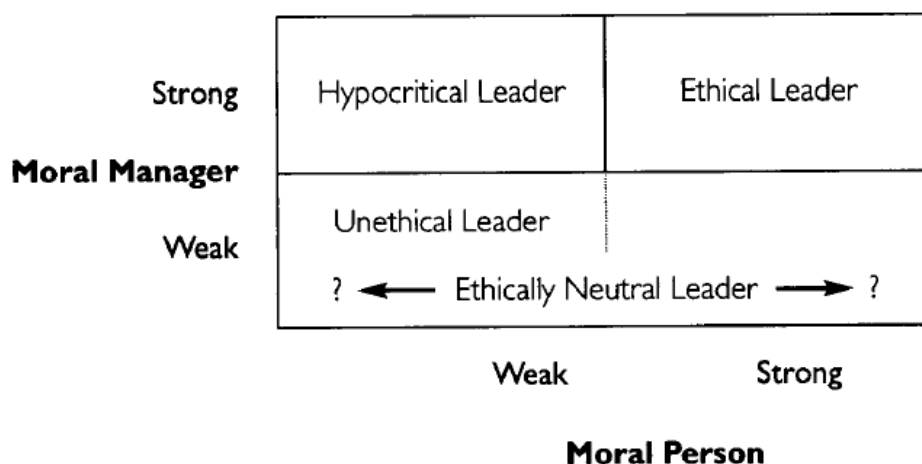
Figure 2.1. Executive Ethical Leadership Reputation Matrix

(Treviño, Hartman, & Brown, 2000)

Where a moral person demonstrates moral traits, behaviours and decision-making processes, a moral manager demonstrates role modelling through visible action in the form of rewards and discipline, and will communicate ethics and values (Treviño, Hartman, & Brown, 2000). Thus, an ethical leader must inspire people toward ethical conduct by role modelling moral behaviour.

Ultimately, the goal for organisational leaders is to be strong moral people and strong moral managers. If these two elements are not strongly present in a leader, the organisation may be faced either with a leader that is unethical, or ethically silent in that he/she fails to provide leadership in areas where ethical direction is needed (Treviño & Brown, 2004).

A discussion of integrity flows quite naturally from the conceptualisation of ethical leaders as both moral people and moral managers. According to Bauman (2013), any discussion of the moral character and behaviour of leaders must eventually include a discussion of integrity. One reason for this could be the conceptual overlap of integrity with ethical leadership. Ethical leadership cannot exist without integrity, yet integrity is only considered as one element of ethical behaviour (Kalshoven et al., 2011).

Integrity indicates a moral trustworthiness in human interactions, rather than a general evaluation of the moral character of an individual. This concept may be defined as a general meaning of moral uprightness and wholeness (Bauman, 2013) and is a normative leadership ideal (Palanski & Yammarino, 2009). Concerning leader integrity, Brown and Treviño (2006) explain that personal traits such as integrity are linked to perceived leader effectiveness, though integrity is generally used as a moral term.

2.2.4. The Complexity of Ethical Leadership

Kalshoven et al. (2011) note the importance of recognising that ethical leadership is considered a multidimensional concept. This conceptualisation is confirmed by De Hoogh and Den Hartog (2008); Resick, Hanges, Dickson and Mitchelson (2006); and Spangenberg and Theron (2005). De Hoogh and Den Hartog (2009) specifically maintain the argument of multidimensionality, as different ethical leader behaviours are considered theoretically distinct and measuring these behaviours separately is viewed as important. Ethical leader behaviour may be regarded as an overarching construct that is comprised of multiple distinct (yet related) leader behaviours (Kalshoven et al., 2001). Spangenberg and Theron (2005) stress that leadership should not be reduced to a finite, and strictly linearly forward-moving process.

However, some studies have not measured multiple ethical leader behaviours and rather suggested the use of a uni-dimensional measure of ethical leader behaviour (Brown et al., 2005; Piccolo, Greenbaum, Den Hartog, & Folger, 2010; Engelbrecht, Heine, & Mahembre, 2014). This raises a concern, as the previous examination of other leadership styles (such as transformational leadership) proved that the identification and empirical support for multiple dimensions, increased the comprehension of both the leadership style itself and the relationships this leadership style has with employee attitudes and behaviours (Kalshoven et al., 2011).

2.2.5. Defining Ethical Leadership

An important starting point in defining Ethical Leadership would be to understand what is meant by 'leadership'. Although there is no universally accepted definition, leadership is generally understood as a process of influence that "in some way, gets

people to do something" (Ciulla, 1995, p.12). Due to the nature of the position, leaders are in a position of social power. In studying ethical leadership, one must consider how leaders apply their social power in decision making and influencing others (Resick et al., 2006). As mentioned earlier, integrity is seen as a normative leadership ideal (Palanski & Yammarino, 2009). Therefore, followers have traditionally accepted their leaders as having high integrity and good character. When looking at historical leaders, this is not always the case.

Leaders may choose to effectively influence others in a way that is detrimental to the well-being of others, as in the case of the German leader Adolf Hitler. Author Helena Liu (2017) also believes that leadership may have been commercialised to the point of sacredness, where society readily accepts leaders as upright and morally just characters, instead of questioning their true ethical nature. Consequently, there is no dialogue as to what constitutes an Ethical Leader. Although this may be true to some extent, many researchers have systematically started to conceptualise ethical leadership to reach a commonly accepted definition of the construct (Brown & Treviño, 2006; Brown et al., 2005; Treviño, Brown, & Hartman 2003) and the body of literature is growing.

The question of what an Ethical Leader is, remains. Fundamentally, Ethical Leadership means leading in a way that respects the rights and dignity of others (Resick et al., 2006). Ethical leaders are motivated by the notion of doing good to benefit others, even though it comes at a personal cost (Khuntia & Suar, 2004). The most rigorous and widely accepted definition of Ethical Leadership was proposed by Brown et al. (2005, p. 120). These authors suggested that Ethical Leadership 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."

Ethical Leadership is involving employees in decision-making procedures and facilitating the well-being and potential growth of the employees. These types of leaders dare to transform their good intentions into ethical behaviour, which results in high behavioural consistency (Zhu, May &, Avolio, 2004).

Practically, Ethical Leaders have an ethical vision for their organisation that they drive and implement in the organisation (Spangenberg & Theron, 2005). They ensure that employees have a sense of meaning and significance through inclusive communication, accountability in decision-making and implementing fair reward systems (Piccolo, Greenbaum, Den Hartog, & Folger, 2010). Moreover, their actions express honesty, trustworthiness, loyalty, integrity, and responsible citizenship (Lu & Guy, 2014). Ethical leaders protect their followers (Gini, 1997) and positively influence their attitudes and self-esteem through fair, respectful treatment (Babalola, Stouten, & Euwema, 2016).

These definitions of Ethical Leadership have not been without criticism. In response to the widely accepted definition provided by Brown et al. (2005), Eisenbeiss, Van Knippenberg and Fahrbach (2015, p. 637) pose the question "what exactly is normatively appropriate behaviour?" The concern here is that the norms of an organisation may not be ethical, as may be the case for financial institutions who (during the financial crisis) generated profit at the expense of sustainability for their clients (Eisenbeiss, 2012).

However, Brown et al. (2005) suggest that the term "normatively appropriate" is *deliberately* vague to allow for adjustments based on different cultural contexts. Consider the following comment made by Giessner and Van Quaquebeke (2010, p.3): "While this definition leaves little to argue with, it also provides little to work with."

These criticisms highlight perhaps the greatest challenge in defining Ethical Leadership. The danger of forcibly 'pinning down' the meaning of ethics in leadership, as suggested by Lui (2017), could be that the fluidity of the construct is lost.   Thus, what it means to be an ethical leader will always be mediated by culturally and historically situated understandings of 'ethics' and 'leadership' (Liu, 2017). Leadership is also seen as situational. A leader needs to respond appropriately to different cultures, people, and problems by adapting his/her style of leading (Yukl, 2013, p.390). Therefore, the definition of leadership changes according to the way leaders choose to influence followers and make decisions (Ciulla, 1995, p 12).

Viewed simultaneously, while leadership is accepted as situational, ethical norms enforced by the leader should also be viewed as contextual. In a globalised organisational context there may be certain universally accepted definitions of ethics. However, one should remain sensitive to different cultural perceptions of ethical behaviour.

2.3. REVIEW OF RESEARCH: MEASURES OF ETHICAL LEADERSHIP

Although it was mentioned that the subject of ethical leadership is a relatively new construct being investigated, there have been previous attempts to operationalise and measure this leadership style. This section aims to orientate the reader towards specific measures of ethical leadership (i.e. not all existing measures will be discussed in-depth). Understanding the existing conceptualisations and measures of ethical leadership, will ensure that the current study makes a valuable contribution to the field of ethical leadership.

Ultimately, the aim is to make a valuable contribution to existing research. This can only be done by building on the foundations that have already been laid, or to pursue different research avenues based on the learning advice from previous researchers.

The following measuring instruments of ethical leadership will be discussed in-depth: (a) Ethical Leadership Scale (ELS) (Brown, Treviño, & Harrison, 2005); (b) Ethical Leadership Inventory (ELI) (Spangenberg & Theron, 2005); (c) Groundwork For The Ethical Leadership At Work Questionnaire (ELW) (De Hoogh & Den Hartog, 2008); (d) Ethical Leadership At Work Questionnaire (ELW) (Kalshoven, Den Hartog, & De Hoogh, 2011); (e) Ethical Leadership Questionnaire (ELQ) (Yukl, Mashud, Hassan, & Prussia, 2013); and (d) the Eisenbeiss, Van Knippenberg, and Fahrbach (2015) Measure of CEO Ethical Leadership.

These measures will be discussed in the following format: A broad overview of the study; information regarding the number of items used to measure ethical leadership; information about the samples used in each study; and definitions and the dimensions of ethical leadership identified in each study. As ethical leadership is still an emerging field, it is vital to establish the validity thereof (Kalshoven, Den Hartog, & De Hoogh,

2011). Therefore, the psychometric properties of each measuring instrument will also be subject to review.

2.3.1. The Ethical Leadership Scale (ELS)

Brown et al. (2005) have been established as respected authors in the field of ethical leadership by laying the conceptual and empirical groundwork for future research on the subject. These authors are responsible for the development of the Ethical Leadership Scale (henceforth referred to as the ELS), that was based on previous research (Treviño, Brown, & Hartman, 2003) and earlier literature on this subject. Their article, 'Ethical leadership: a social learning perspective for construct development and testing', addressed the lack of previous research on this topic by providing the field of industrial psychology with profound descriptive research about ethical leadership, following the convention that the ethical dimension of leadership is embedded primarily within transformational and charismatic leadership styles (Brown et al., 2005). Their study yielded a popular definition and a newly developed measurement instrument that is still popular in more recent research.

The ELS, in its development stage, consisted of an initial item pool of 48 items. These items were based on previous theorising, research and conceptualisations. The process consisted of two of the authors each developing an item independently and comparing their work in an iterative process. Their deductive approach used for item generation was validated by comparing it to an inductive approach to item generation through coordinating twenty in-depth interviews with MBA students from two prominent universities. In these interviews, students were asked to identify the behaviours and characteristics of someone they regarded as an ethical leader. The recorded responses were found to be in line with previous qualitative research and yielded no new dimensions, serving as evidence of content adequacy of the deductively derived initial item pool. The interviews required informants to focus on direct supervisors (seen as immediate authority figures) with whom they had daily contact. Ultimately, the authors selected ten items to form part of a short scale. Test items are based on a 6th-grade reading level, comprising of a brief statement of fewer than ten words per sentence.

Further, Brown et al. (2005) used seven different studies with seven different samples in developing their measurement of ethical leadership. A brief description, including information on the sample of each study, is depicted in Table 2.1 below.

Table 2.1

Summary of Samples Used in Developing the ELS

Study	Sample size	Data/Sample	Additional Information
Study 1	$N = 154$	MBA students from three public universities.	M age = 29.3 M work experience = 6.3 years 68.9% men
Study 2	$N = 127$	Employees from financial services firm.	M age = 39.0 years M org tenure = 7.5 years 71.8% women
Study 3	$N = 184$	Employees from the same firm used in Study 2 (independent sample).	
Study 4	$N = 20$	Management and I/O Psychology faculty and doctoral students.	
Study 5	$N = 87$	MBAs from one public university.	M age = 28.8 years 75.9% men
Study 6	$N = 123$	Senior undergraduates.	M age = 22.0 years M tenure with manager = 12.7 months 63.6% men
Study 7	$N = 285$ (part A) $N = 285$ (part B) $N = 485$ (part C)	Members of work groups from the same firm used in Study 2 (independent sample).	Sample A: M age = 37.5 years M tenure = 7.2 years 63.2% women Sample B: M age = 37.4 years M tenure = 7.1 years 62.7% women Sample C: M age = 38.0 years M tenure = 7.5 years 66.5% women

(Brown, Trevino, & Harrison, 2005)

The constitutive definition provided by Brown et al. (2005) is still widely recognised by authors researching the field of ethical leadership (De Hoogh & Den Hartog, 2008; Mayer et al., 2009; Yukl, Mashud, Hassan, & Prussia, 2013). According to these

authors, ethical leadership is defined as '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), as discussed in the conceptualisation of ethical leadership in the previous section.

Using a single-factor scale, Brown et al. (2005) assessed different leader behaviours such as acting fairly and honestly, allowing followers' voice, and rewarding ethical behaviour. This short scale proved to be useful for research purposes, yet, it is evident that these behaviours are relatively distinct, leading to different antecedents and consequences. The concern is that combining these theoretically distinct constructs in a unidimensional measure could complicate the exposition of the mechanism through which ethical leadership develops (Kalshoven et al., 2011).

Regarding the validity of the Ethical Leadership Scale; Brown et al. (2005) faced a challenge in their effort to establish convergent validity, as there were no instruments that measured ethical leadership at this point. Instead, the authors decided to focus on the internal consistency that the Ethical Leadership Scale (ELS) demonstrated (further elaboration on these findings will be discussed under each study). The relationships between ethical leadership and other constructs were examined to establish the validity of the construct. The authors recorded the predictions concerning these relationships. Specifically, the relationships between ethical leadership, follower attitudes and contextual performance were investigated.

As previously mentioned, Brown et al. (2005) used seven different studies with seven different samples in developing their measurement of ethical leadership. While studies one to four were used to examine the trait validity and internal coherence of the ethical leadership measure, study five to seven were used to examine the nomological validity of ethical leadership, with the final study specifically focussing on incremental prediction.

In this process of establishing both internal coherence and trait validity, Study 1 involved the removal of items that did not show significant factor loadings (<0.3) or cross-loaded on multiple factors. Hereafter, a construct development expert was

approached to evaluate content adequacy, which aided the test authors in constituting construct validity for the Ethical Leadership Scale (ELS). The second and third study autonomously demonstrated that the ELS had a high internal consistency (α=.92 and α=.91) and formed a coherent, viable construct.

In further establishing trait validity, Study 4 recruited faculty and doctoral students in I/O Psychology as content raters, by providing them with definitions of ethical leadership, consideration, and passive-avoidant leadership. They were then exposed to multiple items that each represented one of the constructs. They were asked to rate how well the item 'fit' or how well they represented each one of the three domains. By observing the recorded ratings of each item, the test authors could determine if the raters could identify the content of the items representing ethical leadership. Thus, after it was found that the consideration and passive-avoidant items represented their intended domains, it was concluded that the three domains were substantially different.

The focus of Study 5 was to test the nomological validity of ethical leadership. Eighty-seven MBA students rated their most recent supervisor in a survey that consisted of the following (Brown et al., 2005): the ELS; single items to gather information about the demographics of the respondent and their perceived demographic similarity with their supervisor (Kirchmeyer, 1995); measures of affective trust (McAllister, 1995); abusive supervision (Tepper, 2000); and a measure of consideration that was also used in Study 4 (Schrieshem, 1979; Schriesheim, Cogliser and Neider,1998). Once again, the ELS had shown high internal consistency (α=.94).

In addition to this, the ELS showed positive correlations with consideration (r=.69, p<.001) and affective trust (r=.76, p<.001); and negative correlations with abusive supervision (r=-0.61, p<0.001). The correlations observed between effective trust and consideration (r=0.81), and abusive supervision and consideration (r=-0.72) were tantamount to this.   Regarding discriminant validity, no correlations were found between the age and gender of respondents and their reports of the ethical leadership of their supervisor. The ELS proved to be free from 'similar to me bias', as it was unrelated to perceived race or ethnicity similarity (r=-0.01, *ns*), perceived education

similarity (r=0.05, *ns*), perceived age similarity (r=-0.01, *ns*), perceived lifestyle similarity (r=0.16, *ns*) and perceived religion similarity (r=0.12, *ns*).

Study six was also crucial in establishing discriminant and nomological validity for the ELS. The same method was followed as in Study 5 - 123 undergraduate seniors in business were asked to rate their most recent supervisor. Reliability was established for the trusting subscale (α=0.68), the cynicism subscale (α=0.72) and the social desirability measure used (α=0.78); there were no significant relationships observed between these constructs and ethical leadership, which helped to establish discriminant validity. The internal coherence of the test proved to be high (α=0.93).

In addition to further examining nomological, convergent and discriminant validity for the ELS, the final study was conducted to establish the utility of the construct itself. In Study 7, three different samples were used (Sample A, B and C). Regarding nomological validity, the following was found: (a) ethical leadership had a positive relationship with interactional fairness (r=0.24, p<0.01); (b) ethical leadership had a positive relationship with leader honesty (r=0.65, p<0.001); (c) ethical leadership is positively associated with supervisor effectiveness (r=0.16, p<0.05); (d) employees with ethical leaders experience increased satisfaction with their supervisor (r=0.22, p<0.01); (d) employees working under ethical leaders are more likely to put in extra effort or be more dedicated to their job (r=0.21, p<0.01); and (e) employees with ethical leaders are more willing to report problems (r=0.17, p<0.05). It was also found that the incremental validity of the model was supported by evidence of structural equation modelling.

Overall, it was found that the measure demonstrated discriminant validity, content validity, high reliability, nomological validity, and predictive power. However, nomological validity was not established cross-culturally and samples may not be diverse enough, as most respondents (of all seven studies) were recruited from one large, multi-unit financial services institution.

2.3.2. The Ethical Leadership Inventory (ELI)

Another measure of ethical leadership that will be reviewed is the Ethical Leadership Inventory (or ELI) developed by Spangenberg and Theron in 2005. This theoretical model was developed with the aim to describe the type of leadership required for creating an ethical and high performing organisation. This study promotes the idea that an ethical high-performance leader must be both an effective leader and a leader of ethics. Therefore, Spangenberg and Theron (2005) developed a 360° instrument that could be used to assess the quality of 'leadership of ethics' demonstrated by the middle, senior and executive managers in private, public and non-profit organisations.

The authors recognised four phases within this model: the ethical orientation of leaders (Phase 1); the ethical orientation that becomes visible by their effort to build an ethical organisation (Phase 2); the influence of external factors as a mediator (Phase 3); and that this orientation of the leader will ultimately create an ethical organisational environment with positive outcomes for the organisation, employees and other stakeholders (Phase 4).

In developing the ELI, two rounds of field research were done by using the Delphi technique. This led to a decision to include 19 dimensions of ethical leadership, measured by 103 items as part of the ELI. The test sample included 60-unit leaders from ten prominent South African companies, such as Anglo Gold, Distell and Medi-Clinic. Almost 50% of the leaders came from previously disadvantaged backgrounds. Leaders of top management, senior management and middle management were included in the study, although a stronger representation of the top management category would have been more desirable.

Spangenberg and Theron (2005) defined leadership of ethics as the creation and sharing of an ethical vision that is based on a thorough diagnosis of the external and internal environments in which relevant parties participate. It includes the process of preparing the leader, followers and organisation (in the form of structures and culture) for implementing the vision.

Spangenberg and Theron (2005, p.4) defined leadership of ethics in the form of 19 dimensions grouped under three broad themes. A layout of these dimensions and their definitions is illustrated in Table 2.2 below.

Table 2.2

First-order latent leadership dimensions measured by the ELI

1. Creating and sharing ethical vision
Understanding the ethical dynamics in the external and internal environments
Diagnoses ethical dynamics in the external and internal environments in order to develop an ethical vision.
Developing a challenging vision
Develops a collective ethical vision that inspires people and gives them a sense of purpose, is customer-focussed and advances diversity of people.
Building trust in the leader and the unit .
The leader creates trust in him/herself and builds confidence in the unit.
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 to the vision.
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.
2. Enabling the leader and the unit to implement the ethical vision
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. Is committed to continuous learning.
Empowering followers
Encourages followers to accept responsibility for their own ethical learning and growth. Creates conditions which allow them the opportunity to make meaningful decisions.
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, ethics committee, and ethics training programme.
Building an ethical culture and climate

Table 2.2 (Continued)

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

3. Implementing the ethical vision

3.1. Leading with courage, integrity and sensitivity

Acting honestly and with integrity.

Honestly manages the organisational unit and consistently lives out the values embedded in the vision

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

Decisiveness and hardiness

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

Demonstrating interpersonal sensitivity

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

3.2. Encouraging ethical behaviour

Challenging current reality and stimulating learning

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

Inspiring people towards ethical behaviour

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

3.3. Stimulating across boundaries

Facilitating interdepartmental co-ordination

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

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

3.4. Leading ethical initiatives and rewarding ethical contributions

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.

Table 2.2 (Continued)

Reviewing ethical initiatives and behaviour

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

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

(Spangenberg & Theron, 2005)

2.3.3. Groundwork for the Ethical Leadership at Work Questionnaire (ELW)

In their 2008 study, De Hoogh and Den Hartog aimed to examine the relationship between ethical leadership and effectiveness. This investigation revealed that ethical leadership is negatively associated with despotic leadership, yet positively related to top management's team effectiveness and the optimism subordinates experienced for their future (Toor & Ofori, 2009). The study utilised multi-source survey data from multiple groups of subordinates, with data collected from coding interviews with CEOs.

The 2008 study involved the development of a preliminary questionnaire, that ultimately led to the Ethical Leadership at Work Questionnaire (ELW) that was published in 2011 by the same (and contributing) authors.

The sample was made up of 73 small to medium-sized organisations in the Netherlands, over a wide range of sectors. Invitation letters were sent to 340 CEOs, with 73 agreeing to participate in the study. Most of these CEOs had been in their position for more than two years; most of these individuals were male, and the average firm size for the profit and the voluntary section was 102 and 52 respectively. Sample sized ranged from 62 to 73.

In this study, the definition and dimensions of ethical leadership are intertwined. The De Hoogh and Den Hartog (2008) paper bases its creation of unique dimensions of ethical leadership on the definition of ethical leadership provided by Brown et al. (2005). Here, ethical leaders are described as honest, trustworthy, fair and caring. They structure their work environments justly and are known for making decisions fairly and honourably. In the following section, the dimensions of ethical leadership identified by De Hoogh and Den Hartog (2008) will be examined.

In this study, De Hoogh and Den Hartog (2008) used the research of Brown et al. (2005) to derive their dimensions of ethical leadership.   These dimensions are illustrated in Table 2.3 below.

Table 2.3

Dimensions used to measure ethical leadership by the preliminary ELW

Concern for Morality and Fairness	Includes ethical leadership behaviours such as honesty, trustworthiness, fairness and whether the leader cares for followers
Role Clarification	The degree to which the ethical leader promotes and rewards ethical conduct, and their degree of transparency in the workplace
Power Sharing	Providing followers with voice
Perceived Despotic Behaviour	Included as a form of unethical behaviour, to serve as a contrast to ethical behaviour

(De Hoogh & Den Hartog, 2008)

De Hoogh and Den Hartog (2008) measured these ethical leadership dimensions (morality and fairness, role clarification, and powersharing) by using three scales that were adapted from the Multi-Culture Leader Behaviour Questionnaire (MCLQ) developed by Hanges and Dickson in 2004. This questionnaire was administered separately and required respondents to report on the behaviour of leaders that were familiar to them. The items in this questionnaire were arranged as a seven-point response scale that ranged from one (strongly disagree) to seven (strongly agree).

The first dimension, namely morality and fairness, was measured by six items to establish whether leaders demonstrated honesty, consideration, trustworthiness, high ethical standards, and fairness.   This dimension demonstrated high internal consistency (α=.81).   The role clarification dimension of ethical leadership was measured by five items that assessed transparency, engagement in open communication, and clarification of expectations and responsibility.   High internal consistency was also reported for this dimension (α=.88). The final dimension, power-sharing, specifies leadership behaviours such as providing followers with voice and

participatory decision-making. The six items measuring these attributes had an alpha value of .78.

As De Hoogh & Den Hartog (2008) considered despotic leadership as a contrast to ethical leadership, the authors added a relevant measure as part of their endeavour to measure the influence of ethical leadership on effectiveness. The despotic leadership measure contained six items that aimed to identify whether the leader in question engaged in self-serving behaviours, is self-aggrandising, insensitive and exploitative. The reported alpha coefficient was .82.

This preliminary study eventually was fundamental to the development of the Ethical Leadership at Work Questionnaire (ELW) published in 2011. This new questionnaire served as a revision of the 2008 study.

2.3.4. The Ethical Leadership at Work Questionnaire (ELW)

In 2011, Kalshoven, Den Hartog, and De Hoogh set out to develop a multi-dimensional, valid measure of ethical leadership, based on the work of Brown et al. (2005) and following their earlier attempts at measuring ethical leadership (De Hoogh & Den Hartog, 2008). This measure was named the Ethical Leadership at Work questionnaire (ELW). Seven ethical leader behaviours were distinguished (illustrated in Table 2.4), and the investigation consisted of two studies. Study 1 refers to the item generation and scale development process; an investigation into the factor structure and measurement properties; and an examination of the relationships between ethical leader behaviours and transformational leadership and work-related attitudes; perceived leader effectiveness, job and leader satisfaction, trust, cynicism and commitment. Study 2 included the retesting of the factor structure and psychometric properties of the ELW scales, and an examination of the relationship between ethical leader behaviours and perceived leader effectiveness, trust, employee effectiveness, and employee organisational citizenship behaviour, to further assess the construct validity of the measure. The authors also examined the extent to which the ethical leadership behaviours explain variance in employee behaviour.

Table 2.4

Dimensions of Ethical Leadership Measured by the ELW

Fairness	Treating others in a way that is right and equal, making principled and fair choices and not to practise favouritism.
People Orientation	Caring about, and respecting and supporting followers.
Role Clarification	Clarification of responsibilities, expectations and performance goals.
Ethical Guidance	Communication about ethics, explaining ethical rules, promoting and rewarding ethical conduct.
Concern For Sustainability (Environment Orientation)	Whether the leader cares for the environment and stimulates acts to conserve it, such as recycling.
Power Sharing	Allowing followers a say in decision making and listening to their ideas and concerns.
Integrity	Consistency of words and deeds. Following through with the promises that one has made.

(Kalshoven, Den Hartog, & De Hoogh, 2011)

The sample for the first study included a broad sample of employees in the Netherlands, with the final sample consisting of 243 participants. These individuals worked in healthcare, government, financial and business services, education and manufacturing. The majority held a tertiary degree (150 participants), and leader-employee tenure was over six months for 80% of the sample. The average age for participants was 36 years.

The second study was completed using a sample of leaders in financial and business services, health care, government, construction and education in the Netherlands. The complete employee sample consisted of 316 individuals. The average age of the individuals was 44 years for leaders and 35 for employees.   The supervisor-subordinate tenure for 87% of the sample was more than six months. The sample sizes for the second study ranged from 125 to 136.

To ensure the validity of the measurement of ethical leader behaviours, the authors included variables relative to ethical leadership that have previously been investigated. For example, Brown et al. (2005) established that ethical leadership relates to leader effectiveness, trust, satisfaction with the leader and transformational leadership.

Another relationship exists between ethical leadership and commitment (De Hoogh & Den Hartog, 2009). Age and gender were also included to establish discriminant validity, as obtained from the work of Brown et al. (2005). Different variables were included in the study to ensure construct validity (e.g. effectiveness and OCB). Finally, cynicism was included as a negative employee attitude relating to ethical leadership. Regarding convergent validity, the authors included measures for other leadership types (e.g. transactional leadership) and found positive correlations between that and ethical leadership. Divergent validity was demonstrated by including leadership styles in the study that were negatively related to ethical leadership (e.g. autocratic leadership). The item analysis done as part of the first study showed that the ELW has a high internal consistency overall, with the highest score being .86.

Study 2 was the second step in the validation process of the instrument. This involved the retesting of the factor structure on a different sample using CFA and linking the dimensions of ethical leadership to outcomes such as trust in the leader. The results of the CFA confirmed the findings in Study 1 and provided further evidence of the construct validity of the ELW. The second study showed a Cronbach alpha value of .81 for the ethical leadership dimension.

2.3.5.   Ethical Leadership Questionnaire (ELQ)

Yukl, Mashud, Hassan, and Prussia (2013) recognised a limitation in the research regarding the measuring of ethical leadership.   They concluded that most measurement instruments had significant limitations, such as the inclusion of irrelevant leadership behaviours in measurements of ethical leadership. The authors of the ELQ identified the essential qualities to include in an ethical leadership measure, and they created a new measuring instrument after critically reviewing the limitations of existing instruments.

The ELQ contains 15 items, written in a six-point Likert format. As the authors used a uni-dimensional approach in examining ethical leadership, the test items describe different aspects of leadership behaviours.   These aspects of ethical leadership include leader honesty; integrity; fairness; altruism; consistency of behaviours with espoused values; communication of ethical values; and providing ethical guidance

(Yukl, Mashud, Hassan, & Prussia, 2013). No items related to task and relations-oriented behaviours were included, such as empowering and developing subordinates and clarifying roles and responsibilities. Test items were adapted from the ELS (Brown et al., 2005); the PLIS (Craig & Gustafson, 1998); and the morality and fairness scale used in the work of De Hoogh and Den Hartog (2008) to maintain some degree of consistency with earlier research.

The sample used for this study consisted of 192 graduate students in the United States. Of this sample, 147 were enrolled in the MBA programme of a private university in the north-western part of the country, and 45 respondents were enrolled in the Master of Public Administration programme of a university in the Midwestern part of the United States. The students all had full-time jobs, attending only one or two classes per week and who saw their job as their primary responsibility. Students rated their immediate supervisors. Roughly half of the respondents were between 25 and 30 years of age and had worked for an average of two to four years for their current employer, with seven to ten years of general work experience. Fifty-five percent of the respondents held technical/professional jobs; 26% held first-level management positions; 14% held middle-management positions and only 3% were upper-level executives. The organisations represented were diverse concerning industry, size and type. To address bias associated with same-source data, the information was collected on two separate occasions.

Yukl et al. (2013) drew on the definitions of Kanungo (2001), Brown et al. (2005) and Treviño and Brown (2004). These authors defined ethical leaders as individuals who engage in behaviours that benefit others and refrain from behaviour that may cause harm to others (Kanungo, 2001); a combination of integrity, ethical standards and fair treatment of employees (Brown et al., 2005); and the promotion of ethical conduct by practicing and managing ethics and holding individuals accountable for it (Treviño & Brown, 2004). In addition to this, the authors included the definition of Khuntia and Suar (2004) in their conceptualisation of ethical leadership, which suggests that leaders incorporate moral principles in their beliefs, values, and behaviours.

As a primary objective of the study, the authors attempted to establish the validity of this new questionnaire for measuring ethical leadership. Discriminant validity was

demonstrated for this study when subordinates could rate the ethical leadership of their immediate supervisor independently from their ratings of how often this leader uses leadership behaviours that do not involve ethical issues. This was established through exploratory and confirmatory factor analyses. Principle components and oblique rotation resulted in four distinct factors that corresponded to task behaviours, relations behaviours, change behaviours, and ethical leadership. Factor loadings demonstrated a clear distinction between items, with only three ELQ items having cross-loadings on the MPS relations-orientated factor that exceeded 0.30, and none of the loadings reached 0.40.

Confirmatory factor analyses for the four-factor model that was proposed showed adequate fit, considering the number of indicators per construct. The four-factor model was then compared to three alternative models, yet the fit indices for the proposed four-factor model proved to be superior. The Cronbach alpha values exceeded .74 for all the behavioural scales, with the Ethical Leadership Questionnaire reporting an alpha value of .96. Standard deviations for all the measures were relatively high, which suggested that the data had sufficient variability to proceed with factor analysis.

In summary, the ELQ showed good reliability, discriminant and criterion-related validity. Factor analysis results suggested that the items in the ELQ are distinct from task- and change-orientated leader behaviours. An overlap was found with relations-orientated leader behaviours (such as empowering or supportive leadership), yet it was minimal.

Evidence of criterion-related validity is demonstrated by showing that ethical leadership can explain additional variance in indicators of the leader's influence in the quality of relationships with subordinates and on unit performance.

2.3.6. The Eisenbeiss, Van Knippenberg, and Fahrbach (2015) Measure of CEO Ethical Leadership

Eisenbeiss, Van Knippenberg, and Fahrbach (2015) highlighted a notion that some companies may have, that ethical firm leadership and firm performance are oppositions. Grounded in the upper echelons theory, which suggests that

organisational outcomes are a reflection of the values, characteristics and leadership behaviours of CEOs, the authors suggested that the effect of CEO ethical leadership was mediated by organisational ethical culture and moderated by the corporate ethics programmes found in companies. They also linked CEO ethical leadership to organisational performance. During this effort, they developed a measurement of ethical leadership. The focus of this section will be on how Eisenbeiss, Van Knippenberg, and Fahrbach (2015) view ethical leadership as a higher-level construct (in line with a multidimensional approach), that consists of sub-components summarised in Table 2.5 below.

Table 2.5

Dimensions Used to Assess CEO Ethical Leadership

People orientation	Treating other people with respect, compassion, altruism, supporting and not harming others or violating their rights.
Integrity	Leader word-deed alignment, trustworthiness and the ability to determine and engage in morally right behaviour.
Fairness	Principled decision-making, equal access to information, no practice of favouritism or discrimination.
Responsibility	Having long-term focus on organisational success, valuing sustainable relationships with business partners, being concerned about the community, and protecting the environment.
Moderation	Being temperate and considerate, not always occupying the focus of attention, and finding a balance between extreme ideas, behaviours, decisions and goals.

(Eisenbeiss, Van Knippenberg, & Fahrbach, 2015)

To assess the people orientation and integrity dimensions, Eisenbeiss et al. (2015) used a seven- and four-item scale respectively, based on the Ethical Leadership at Work Questionnaire (Kalshoven et al., 2011). The reported alpha coefficient for the people orientation dimension was .92; and .98 for the integrity measure. Fairness was measured by a six-item scale based on Moorman (1991), and this measure reported an alpha value of .91. Responsibility was measured with a ten-item scale based on the Kalshoven et al. (2011) scale of environmental sustainability, yet additional items

were added to cover leader responsibility to stakeholders. These items were in line with the Maak and Pless (2006) framework on responsible leadership. The alpha value for this scale was .92. Finally, moderation was measured using a four-item scale of the Hexaco Personality Inventory by Lee and Ashton (2004). This scale showed an alpha coefficient of .76. All the items were rated on a six-point response scale, of which the overall scale had an alpha coefficient of .87.

The sample included 32 German companies across various industries. These industries included the automotive industry, consumer goods, energy, finance, pharmaceutical, chemical, food, sports, and the high-technology industry. A robustness check was done to address the concerns relating to the small sample size used in the study, which was due to difficulties in obtaining data from the top management level of the organisation. Ultimately, the sample comprised of 145 employees, 64.3% of whom were male and between the ages of 20 and 62. An average of 4.53 employees from each organisation participated. The employees all had worked for an average of 9.8 years, ranging from 2 to 35 years.

In collecting data on CEO ethical leadership, the informant sampling approach was used, where randomly chosen members of an organisation were asked to fill in a web-based survey. The minimum number of individuals from one organisation was three. Interrater-agreements and variance between different organisations were reviewed.

In terms of validating the ethical leadership scale used in this study, a validation study was conducted with 311 employees from the United Kingdom. The Eisenbeiss, Van Knippenberg, and Fahrbach (2015) measure of ethical leadership showed a high correlation ($r=.94$; $p<0.01$) with the ELS of Brown et al. (2005); and a significant negative correlation ($r=-.48$; $p<0.01$) with abusive leadership (Tepper, 2000). This indicates good discriminant and convergent validity.

A confirmatory factor analysis was conducted via AMOS 5.0 to test the dimensional structure of the ethical leadership measure. A two-level factor model that contained the five components of ethical leadership as distinct first-level factors and ethical leadership as the superordinate second-level factor was compared to a one-factor

model. The results indicated satisfactory fit indices for the two-level factor model, yet not for the one-factor model.

The discriminant validity of the scales was tested with further confirmatory factor analysis. In line with the trends in methodological literature, the authors deemed data-parcelling as the most appropriate procedure for the discriminative analyses in their effort to increase the stability of the factor structures. A two-factor model which contained CEO ethical leadership and organisational ethical structure as two-level factor constructs was compared to a one-factor model in which all the first-order parcels were conceptualised to load on one factor. Again, the two-factor model fit the data well, yet the one-factor model did not show adequate fit.

In the two-factor model, all the factor loadings of the CEO ethical leadership parcels and organisational ethical culture parcels were statistically significant and positive (p<0.01). Another confirmatory factor analysis was done to test the discriminative validity between the organisational ethics programme and firm performance. A two-factor model was tested using the parcelling method for the organisational ethics programme, including the programme as a two-level factor and firm performance as a separate factor against a simple one-factor model, in which the ethics programme parcels and firm performance items were all supposed to load on the same factor. Results showed that the two-factor model showed excellent fit and that the one-factor model did not fit the data well. All the factor loadings of the ethics program parcels and firm performance items were statistically significant and positive for the two-factor model.

2.4. SUGGESTED DIMENSIONS FOR A NEW ETHICAL LEADERSHIP MEASURE

After examining existing literature on the Ethical Leadership construct, suggested sub-dimensions for the new scale needed to be identified. This was done by considering descriptive literature and existing sub-dimensions in ethical leadership scales. Following this, fundamental concepts of importance were identified and grouped into themes. Soon a profile of an ethical leader emerged, which is reflected in the dimensions in Table 2.6. A process document as illustration is provided in Appendix A.

The first dimension, Morality, deals with the moral person of the leader as described by Treviño, Hartman, and Brown (2000). Ethical leaders have been known to habitually incorporate moral principles into their beliefs, values and behaviour (Khuntia & Suar, 2004). Thus, leader character and integrity are foundational personal characteristics that guide the ethical behaviour of the leader (Resick et al., 2006).

Elements of the moral person of the leader have been measured as dimensions, e.g., 'Concern for morality and fairness' (De Hoogh & Den Hartog, 2008), 'Fairness' (Kalshoven et al., 2011; (Eisenbeiss et al., 2015), 'Morality' (Zheng, Zhu, Yu, Zhang & Zhang, 2011), 'Integrity' (Eisenbeiss et al., 2015; Kalshoven et al., 2011) and 'Motive and Character' (Khuntia & Suar, 2004). The emphasis by Spangenberg and Theron (2005) on trust and role modelling in Ethical Leadership have been incorporated in this dimension.

Another aspect of the character of the ethical leader relates to his/her courage in acting with character, e.g. 'Leading with courage, integrity and sensitivity' (Spangenberg & Theron, 2005). Having courage implies that the leader can uphold his/her ethical values when challenged (Glanz, 2008). This courage stems from the moral person of the leader, as he/she is courageous because of a firm belief in ethical values (Badaracco, 1997). In summary, the dimension of Morality advocates that the leader should have an inherently ethical moral compass and personal conviction of ethical values. Due to this strong value-system, the leader has the courage to uphold ethics even in challenging situations.

Secondly, the dimension of Compassion is suggested. Many studies acknowledge a community/people-orientation element of ethical leadership, e.g. 'People Orientation' (Eisenbeiss et al., 2015; Kalshoven et al., 2011; Resick et al., 2006). According to literature, ethical leaders should be empathetic, caring, sensitive and considerate towards followers (De Hoogh & Den Hartog, 2008; Eisenbeiss et al., 2015; Glanz, 2008; Langlois, Lapointe, Valois & de Leeuw, 2014; Spangenberg & Theron, 2005;). Altruism has been suggested to be the basis for ethical leadership (Kanungo & Mendonca, 1996) to explain the selfless nature of this leadership style. These elements have all been integrated in the dimension of Compassion.

Thirdly, the dimension of Ethical Envisioning was identified. This dimension has not been widely explored as a sub-dimension of ethical leadership, with Spangenberg and Theron (2005) pioneering the idea of 'Creating and Sharing Ethical Vision' and 'Stimulating across boundaries' by considering the organisation's ethical image and maintaining long-term relationships with stakeholders. However, the concept of environmental sustainability has been addressed, e.g. 'Responsibility' (Eisenbeiss et al., 2015) and 'Concern for sustainability' (Kalshoven et al., 2001). In short, Ethical Envisioning acknowledges the strategic elements of ethical leadership and its responsibility towards the environment and the surrounding community.

Ethical Empowerment builds on current thinking regarding ethical leaders that empower their followers, e.g. 'Power-sharing' (De Hoogh & Den Hartog, 2008; Kalshoven et al., 2011) and 'Empowerment' (Khuntia & Suar, 2004; Resick et al., 2006). However, ethical empowerment is different from the traditional notion of empowerment in that followers are specifically empowered to make ethical decisions through learning and encouragement (see Spangenberg & Theron, 2005). In this sense, followers are equipped to deal with ethical dilemmas and to make principled decisions consistently.

Lastly, Managing Ethics builds on the premise of the moral manager by Treviño, Hartman, and Brown (2000). Ethical systems are put in place to reinforce behaviour, support employees and hold them accountable for ethical behaviour. The importance of these ethical structures and systems has been recognised (see Spangenberg & Theron, 2005; Resick et al., 2006) and has also been referred to in the form of role clarification, where the leader clarifies expectations in terms of ethical behaviour (De Hoogh & Den Hartog, 2008; Kalshoven et al., 2011). The moral manager is also recognised, in this dimension, as an ethics coach and mentor, e.g. 'Ethical guidance' (Kalshoven et al., 2011).

Based on the abovementioned conceptualisation, ethical leadership is defined as a leadership style in which the leader behaves as an ethical role model; demonstrates an uncompromising moral character; treats others compassionately; shows responsible leadership; fosters an ethical strategy and culture in the organisation;

empowers employees to deal with ethical dilemmas; and effectively manages the ethical behaviour of employees through ethical structures and systems.

Table 2.6

Dimensions of the proposed Ethical Leadership Behavioural Scale (ELBS)

Dimension	Definition
Morality	Demonstrating unquestionable moral character and preserving a virtuous reputation. Consistently showing one's personal conviction of sound principles such as honesty, integrity and fairness. Being perceived as trustworthy and keeping one's promises. Being regarded as someone with uncompromising character, and showing courage in making tough, principled decisions. Considering the ethical implications of actions and intentionally acting as a role model for ethical behaviour.
Compassion	Respecting and valuing others through consistent care, benevolence, empathy and altruism. Avoid harm being done to others and protecting their rights and dignity. Carefully considering others' needs and being temperate and humble in making decisions that affect others.
Ethical Envisioning	Developing an ethical organisational vision that inspires organisation-wide values and principles, thereby setting a high standard of honourable conduct. Developing a workable, sustainable strategy: clarifying individual and collective roles in the execution and implementation of the ethical vision; ensuring sustainability through environmental conservation, social responsibility, and responsible leadership. Building a discernible ethical organisational brand and fostering an ethical culture within the organisation.
Ethical Empowerment	Equipping employees to deal with ethical dilemmas. Developing employees' ability to make value-driven, ethical decisions.

	Table 2.6 (Continued)
	Providing employees with continuous learning and training in ethics. Committed to ethical development and growth of employees.
Managing Ethics	Continuously monitoring and evaluating business practices and decisions against organisational ethical vision, values and principles. Monitoring and evaluating the effectiveness of ethical structures and systems (e.g. ethics code and ethics hotline). Reinforcing ethical behaviour through recognition and rewards. Disciplining unethical conduct fairly and consistently. Facilitating the solving of tough ethical dilemmas and always being available as an ethics coach and/or mentor.

Following the dimensions identified for measuring ethical leadership are the indicators for each dimension. Items were grouped per dimension together with the source for the item (see Table 2.7). Please note that for the source, Spangenberg and Theron (2005), original items were not made publicly available and parts of the definition of each dimension was adapted into item format.

Table 2.7

Items of the Ethical Leadership Behavioural Scale (ELBS)

Morality	
Item	Source
1. My supervisor/manager practices the moral values (e.g. integrity, honesty, fairness) that he/she preaches.	Adapted from Hendrikz (2017).
2. Employees will remember my supervisor/manager as a leader of ethics.	Self-Developed.
3. My supervisor/manager does the right thing.	Self-Developed.
4. My supervisor/manager acts as an honourable (moral) person.	Self-Developed.

5. My supervisor/manager acts as someone with an ethical reputation.	Self-Developed.
6. My supervisor/manager treats employees fairly.	Self-Developed.
7. My supervisor/manager shows a strong concern for ethical and moral values.	Yukl, Mashud, Hassan and Prussia (2010).
8. My supervisor/manager demonstrates honesty and integrity as important personal values.	Yukl, Mashud, Hassan and Prussia (2010).
9. My supervisor/manager conducts his/her work life in an ethical manner.	Adapted from Brown, Treviño and Harrison (2005).
10. My supervisor/manager acts honestly and with integrity.	Adapted from Spangenberg and Theron (2005).
11. My supervisor/manager can be trusted to tell the truth.	Yukl, Mashud, Hassan and Prussia (2010).
12. My supervisor/manager can be trusted.	Brown, Treviño and Harrison (2005).
13. My supervisor/manager keeps his/her promises.	Kalshoven, Den Hartog and De Hoogh (2011).
14. My supervisor/manager can be trusted to do the things he/she says.	Kalshoven, Den Hartog and De Hoogh (2011).
15. My supervisor/manager can be relied on to honour his/her commitments.	Kalshoven, Den Hartog and De Hoogh (2011).
16. My supervisor/manager has the courage to change a deeply held opinion when he/she recognises that he/she is wrong.	Hendrikz (2017).
17. My supervisor/manager is not afraid to address unethical behaviour.	Self-Developed.
18. My supervisor/manager places service to others above power and self-enrichment.	Self-Developed.
19. My supervisor/manager would not compromise his/her integrity.	Self-Developed.

20. My supervisor/manager is firm in maintaining his/her ethical principles.	Self-Developed.
21. My supervisor/manager has the courage to do the right thing.	Self-Developed.
22. My supervisor/manager's decisions are in line with ethical values (e.g. integrity, fairness).	Self-Developed.
23. My supervisor/manager insists on doing what is fair and ethical even when it is not easy.	Yukl, Mashud, Hassan and Prussia (2010).
24. My supervisor/manager acknowledges mistakes and takes responsibility for them.	Yukl, Mashud, Hassan and Prussia (2010).
25. When making decisions, my supervisor/manager asks, "what is the right thing to do?"	Brown, Treviño and Harrison (2005).
26. My supervisor/manager acts decisively and makes tough ethical decisions.	Spangenberg and Theron (2005).
27. My supervisor/manager does not allow others to pressure them into acting unethically.	Self-Developed.
28. My supervisor/manager will do the right thing, even if it makes him/her unpopular.	Self-Developed.
29. My supervisor/manager upholds his/her ethics in a respectful way.	Self-Developed.
30. My supervisor/manager is the ideal example (role model) of ethical behaviour.	Self-Developed.
31. Concerning ethics, my supervisor/manager is a good role model.	Self-Developed.
32. Employees admire my supervisor/manager as an ethical person.	Self-Developed.
33. My supervisor/manager sets an example of ethical behaviour in his/her decisions and actions.	Yukl, Mashud, Hassan and Prussia (2010).

34. My supervisor/manager keeps his/her actions consistent with his/her stated ethical values (e.g. honesty, integrity).	Adapted from Yukl, Mashud, Hassan and Prussia (2010).
35. My supervisor/manager demonstrates good insight into his/her own ethical behaviour.	Adapted from Spangenberg and Theron (2005).

Compassion

Item	Source
1. My supervisor/manager treats employees kindly.	Self-Developed.
2. My supervisor/manager is understanding of employees' situations.	Self-Developed.
3. I would feel comfortable to share my personal challenges/problems with my supervisor/manager.	Self-Developed.
4. My supervisor/manager puts the needs of others above his/her own self-interest.	Yukl, Mashud, Hassan and Prussia (2010).
5. My supervisor/manager is interested in how his/her employees feel and how they are doing.	Eisenbeiss, van Knippenberg and Fahrbach (2015).
6. My supervisor/manager takes time for personal contact with employees.	Kalshoven, Den Hartog and De Hoogh (2011).
7. My supervisor/manager pays attention to my personal needs.	Kalshoven, Den Hartog and De Hoogh (2011).
8. My supervisor/manager is genuinely concerned about employees' personal development.	Adapted from Kalshoven, Den Hartog and De Hoogh (2011).
9. My supervisor/manager sympathises with employees when they have problems.	Kalshoven, Den Hartog and De Hoogh (2011).
10. My supervisor/manager demonstrates interpersonal sensitivity (empathy).	Adapted from Spangenberg and Theron (2005).
11. My supervisor/manager shows that he/she cares about employees.	Adapted from Kalshoven, Den Hartog and De Hoogh (2011).

12. My supervisor/manager helps and supports others.	Self-Developed.
13. My supervisor/manager allows employees to share in the team's success.	Self-Developed.
14. My supervisor/manager treats employees with dignity and respect.	Self-Developed.
15. My supervisor/manager is a team player.	Self-Developed.
16. My supervisor/manager invests in the development of the community.	Self-Developed.
17. My supervisor/manager acts selflessly.	Self-Developed.
18. My supervisor/manager helps people in need.	Self-Developed.
19. My supervisor/manager is concerned about the well-being of others.	Self-Developed.
20. My supervisor/manager does not exploit or manipulate employees.	Self-Developed.
21. My supervisor/manager does not take advantage of employees.	Self-Developed.
22. My supervisor/manager does not insult employees.	Self-Developed.
23. My supervisor/manager would not do anything to intentionally harm anyone else.	Self-Developed.
24. My supervisor/manager respects the human rights of employees.	Adapted from Eisenbeiss, van Knippenberg and Fahrbach (2015).
25. My supervisor/manager acts with the best interests of employees in mind.	Adapted from Brown, Treviño and Harrison (2005).
26. My supervisor/manager considers the needs, feelings and dignity of employees.	Spangenberg and Theron (2005).
27. My supervisor/manager stands up for employees.	Self-Developed.

28. My supervisor/manager does not let his/her self-interest influence decision-making.	Self-Developed.
29. My supervisor/manager gives credit to employees who contributed to successful outputs.	Self-Developed.
30. My supervisor/manager thinks that he/she is an ordinary (humble) person who is no better than others.	Eisenbeiss, van Knippenberg and Fahrbach (2015).
31. My supervisor/manager would not want people to treat him/her as though he/she were superior to them.	Eisenbeiss, van Knippenberg and Fahrbach (2015).
32. My supervisor/manager makes principled and objective decisions.	Adapted from Brown, Treviño and Harrison (2005).

Ethical Envisioning

Item	Source
1. My supervisor/manager ensures that the organisational vision is morally sound.	Hendrikz (2017).
2. The vision of my supervisor/manager inspires employees to be responsible and reliable members of the organisation.	Self-Developed.
3. My supervisor/manager emphasises the ethical elements of our organisation's vision.	Self-Developed.
4. My supervisor/manager ensures that our organisational strategy has an ethical basis.	Self-Developed.
5. My supervisor/manager understands ethical issues in the external and internal environments of the organisation.	Adapted from Spangenberg and Theron (2005).
6. My supervisor/manager helps to develop a collective ethical vision for our organisation.	Adapted from Spangenberg and Theron (2005).
7. My supervisor/manager's vision builds trust in our organisation.	Adapted from Spangenberg and Theron (2005).

8. My supervisor/manager is enthusiastic about the organisation's ethical vision.	Self-Developed.
9. My supervisor/manager shows confidence in the ethical vision of the organisation.	Self-Developed.
10. My supervisor/manager publicly promotes the organisation's values, standards and vision.	Self-Developed.
11. My supervisor/manager communicates clear ethical standards for the organisation.	Adapted from Yukl, Mashud, Hassan and Prussia (2010).
12. My supervisor/manager opposes the use of unethical practices (e.g. corruption, dishonesty) to increase organisational performance.	Adapted from Yukl, Mashud, Hassan and Prussia (2010).
13. My supervisor/manager creates trust in the organisation.	Adapted from Spangenberg and Theron (2005).
14. My supervisor/manager inspires confidence and commitment to the ethical values of the organisation.	Adapted from Spangenberg and Theron (2005).
15. My supervisor/manager ensures that the organisation is sustainably profitable.	Self-Developed.
16. My supervisor/manager promotes the organisation's green (ecological) behaviour (e.g. save water, electricity, recycling).	Self-Developed.
17. My supervisor/manager supports local communities and non-profit organisations.	Self-Developed.
18. My supervisor/manager makes the employee role clear in executing the organisation's ethical strategy.	Self-Developed.
19. My supervisor/manager ensures that the organisation operates in good faith when dealing with clients.	Self-Developed.
20. My supervisor/manager considers ethical standards when dealing with clients.	Self-Developed.

21. My supervisor/manager shows responsibility for the society.	Adapted from Eisenbeiss, van Knippenberg and Fahrbach (2015).
22. My supervisor/manager builds long-term relationships with business partners.	Adapted from Eisenbeiss, van Knippenberg and Fahrbach (2015).
23. My supervisor/manager shows a long-term orientation of organisational success.	Adapted from Eisenbeiss, van Knippenberg and Fahrbach (2015).
24. My supervisor/manager protects the welfare of future generations.	Adapted from Eisenbeiss, van Knippenberg and Fahrbach (2015).
25. My supervisor/manager ensures that the organisation is socially responsible.	Adapted from Eisenbeiss, van Knippenberg and Fahrbach (2015).
26. My supervisor/manager creates the opportunity for employees for social engagement (community outreaches).	Adapted from Eisenbeiss, van Knippenberg and Fahrbach (2015).
27. My supervisor/manager enforces sustainable organisational success against short-term wins.	Adapted from Eisenbeiss, van Knippenberg and Fahrbach (2015).
28. My supervisor/manager realises the responsibility of the organisation to serve the society.	Adapted from Eisenbeiss, van Knippenberg and Fahrbach (2015).
29. My supervisor/manager measures success not only by the results obtained, but also whether the process followed was responsible and ethically sound.	Adapted from Brown, Treviño and Harrison (2005).
30. My supervisor/manager works in an environmentally friendly manner.	Kalshoven, Den Hartog and De Hoogh (2011).
31. My supervisor/manager shows concern for sustainability issues.	Kalshoven, Den Hartog and De Hoogh (2011).
32. My supervisor/manager clearly communicates the organisation's ethical vision and strategy.	Adapted from Spangenberg and Theron (2005).

33. My supervisor/manager deals honestly with all stakeholders.	Adapted from Spangenberg and Theron (2005).
34. My supervisor/manager helps employees to see the ethical bigger picture.	Adapted from Spangenberg and Theron (2005).
35. My supervisor/manager influences stakeholders to ensure that things are done the right way.	Adapted from Spangenberg and Theron (2005).
36. My supervisor/manager maintains sound relationships with external stakeholders and builds the ethical image of the organisation.	Adapted from Spangenberg and Theron (2005).
37. My supervisor/manager plans and implements organisation-wide ethical initiatives.	Adapted from Spangenberg and Theron (2005).
38. My supervisor/manager embodies the ethical vision of our organisation.	Self-Developed.
39. Thanks to my supervisor/manager, our organisation is seen as ethical.	Self-Developed.
40. My supervisor/manager is a noble representative of our organisation.	Self-Developed.
41. My supervisor/manager builds an ethical culture and climate.	Adapted from Spangenberg and Theron (2005).

Ethical Empowerment	
Item	Source
1. My supervisor/manager has ethics-related discussions to facilitate learning.	Self-Developed.
2. My supervisor/manager shares his/her ethical learning experiences with employees.	Self-Developed.
3. My supervisor/manager challenges employees' perception of ethics to facilitate learning.	Adapted from Spangenberg and Theron (2005).
4. My supervisor/manager promotes continuous ethical learning.	Adapted from Spangenberg and Theron (2005).

5. My supervisor/manager gives employees the opportunity to solve tough ethical dilemmas.	Self-Developed.
6. My supervisor/manager gives employees access to the information they need to do the right thing.	Self-Developed.
7. My supervisor/manager is eager to listen to the ethical concerns of others.	Self-Developed.
8. My supervisor/manager allows employees to participate in ethical decision making.	Adapted from Kalshoven, Den Hartog and De Hoogh (2011).
9. My supervisor/manager encourages employees to accept responsibility for their own ethical learning and growth.	Adapted from Spangenberg and Theron (2005).
10. My supervisor/manager builds confidence in employees to perform effectively and ethically.	Adapted from Spangenberg and Theron (2005).
11. My supervisor/manager is open to new learning experiences in the field of ethics.	Self-Developed.

<div align="center">Managing Ethics</div>

Item	Item
1. My supervisor/manager considers the ethical consequences of his/her decisions.	Adapted from Spangenberg and Theron (2005).
2. My supervisor/manager expects a high standard of ethical behaviour from employees.	Self-Developed.
3. My supervisor/manager ensures that ethical initiatives are designed and aligned with ethical business strategies.	Adapted from Spangenberg and Theron (2005).
4. My supervisor/manager evaluates our business practices to ensure a high standard of ethics.	Self-Developed.
5. My supervisor/manager ensures that the work team 'walks the ethical talk'.	Self-Developed.

6. My supervisor/manager holds employees accountable for using ethical practices in their work.	Adapted from Yukl, Mashud, Hassan and Prussia (2010).
7. My supervisor/manager makes consistent decisions that are based on ethical standards.	Adapted from Eisenbeiss, van Knippenberg and Fahrbach (2015).
8. My supervisor/manager rewards employee performance in a fair manner.	Eisenbeiss, van Knippenberg and Fahrbach (2015).
9. My supervisor/manager holds employees accountable for ethical problems over which they have control.	Adapted from Kalshoven, Den Hartog and De Hoogh (2011).
10. My supervisor/manager reviews ethical initiatives and behaviour of employees.	Spangenberg and Theron (2005).
11. My supervisor/manager clarifies the likely negative consequences of possible unethical behaviour by employees.	Adapted from Kalshoven, Den Hartog and De Hoogh (2011).
12. My supervisor/manager ensures that ethics codes are up to date and accessible to everyone.	Self-Developed.
13. My supervisor/manager maintains safe reporting mechanisms (e.g. whistleblowing).	Self-Developed.
14. My supervisor/manager clearly explains integrity-related codes of conduct.	Kalshoven, Den Hartog and De Hoogh (2011).
15. My supervisor/manager clarifies integrity guidelines and rules.	Kalshoven, Den Hartog and De Hoogh (2011).
16. My supervisor/manager monitors that employees follow codes of ethics.	Adapted from Kalshoven, Den Hartog and De Hoogh (2011).
17. My supervisor/manager formulates and implements ethical structures and systems.	Spangenberg and Theron (2005).
18. My supervisor/manager adapts structures, processes and procedures to support the implementation of ethical strategy in a changing environment.	Spangenberg and Theron (2005).

19. My supervisor/manager implements ethical structures and systems (e.g. a code of ethics, an ombudsman, ethics committee, and ethics training programmes).	Spangenberg and Theron (2005).
20. My supervisor/manager is fair and objective when evaluating employee performance and providing rewards.	Yukl, Mashud, Hassan and Prussia (2010).
21. My supervisor/manager gives recognition and compliments to employees who behave according to the ethical guidelines.	Adapted from Kalshoven, Den Hartog and De Hoogh (2011).
22. My supervisor/manager celebrates when employees achieve ethical successes.	Adapted from Spangenberg and Theron (2005).
23. My supervisor/manager disciplines unethical employees' conduct appropriately.	Self-Developed.
24. My supervisor/manager gives equal treatment to any employee who acts unethically.	Self-Developed.
25. My supervisor/manager does not exploit/abuse employees who act unethically.	Self-Developed.
26. My supervisor/manager coaches employees in dealing with ethical dilemmas.	Self-Developed.
27. My supervisor/manager inspires employees to make the right choice.	Self-Developed.
28. My supervisor/manager explains what is expected of employees in terms of behaving with integrity.	Kalshoven, Den Hartog and De Hoogh (2011).
29. My supervisor/manager ensures that employees have an equitable (fair) workplace.	Self-Developed.
30. My supervisor/manager ensures that our management processes and procedures do not discriminate unfairly.	Self-Developed.
31. My supervisor/manager is fair and unbiased when assigning tasks to employees.	Adapted from Yukl, Mashud, Hassan and Prussia (2010).

32. My supervisor/manager manages cultural diversity effectively in the workplace.	Self-Developed.
33. My supervisor/manager treats employees as valuable to the organisation.	Self-Developed.
34. My supervisor/manager does not discriminate unfairly (e.g. does not practise favouritism).	Self-Developed.
35. My supervisor/manager advocates inclusivity of employees from different cultural backgrounds.	Self-Developed.
36. My supervisor/manager considers the impact of his/her decisions on all stakeholders.	Self-Developed.
37. My supervisor/manager inspires employees to do the right thing.	Self-Developed.
38. My supervisor/manager inspires employees towards ethical behaviour.	Spangenberg and Theron (2005).
39. My supervisor/manager has fair expectations from employees.	Self-Developed.
40. My supervisor/manager listens carefully to what employees have to say.	Adapted from Brown, Treviño and Harrison (2005).
41. My supervisor/manager discusses business ethics or values with employees.	Brown, Treviño and Harrison (2005).
42. My supervisor/manager clearly explains ethical issues to employees.	Adapted from Spangenberg and Theron (2005).

In summary of the suggested items: The proposed Ethical Leadership Behavioural Scale consists of a total of 161 items. As part of these items, 75 items were self-developed (46.6%), 50 items were adapted from existing items of measures of ethical leadership (31%), and 36 original items were retained (22%).

2.5. CONCLUSION

This Chapter aimed to provide an in-depth discussion of the construct of ethical leadership. In summary, ethical leadership was found to be a distinct construct when compared to other leadership styles. Theories such as social learning and social exchange, explain the behavioural mechanisms through which ethical leadership functions. Ethical leaders should be strong moral people and moral managers, with strong ethical values. Ethical leadership as a construct is proposed to be multi-dimensional, and definitions of the construct have been critically discussed.

A review of existing measurements for ethical leadership enabled the researcher to identify themes in literature, which yielded five dimensions that are proposed to explain ethical leadership. Items were newly written and adapted to in a South African measure for ethical leadership. The methodology followed in establishing the final items and dimensions of the Ethical Leadership Behavioural Scale will be discussed in further detail in Chapter 3.

CHAPTER 3
RESEARCH METHODOLOGY

3.1. INTRODUCTION

Chapter 1 provided an argument that illustrated the need for a new ethical leadership scale that could be used for selection and development in organisations. After an examination of the literature on ethical leadership, Chapter 2 concluded with a unique conceptualisation of ethical leadership in the form of five latent variables (see Table 2.6). Chapter 3 will outline the research methodology that was followed in developing and psychometrically evaluating the ELBS.

The new measurement of ethical leadership was designed so that specific items could reflect specific dimensions associated with ethical leadership. In other words, the behavioural responses to these items are a function of proposed underlying elements that comprise ethical leadership. The measurement model depicts this by showing how the items of the proposed scale are linked to five ethical leadership dimensions. This suggests that the responses to each one of the items reflects the respondent's standing on each one of the five ethical leadership dimensions. A Confirmatory Factor Analysis (CFA) was used to establish whether the measurement model is a valid representation of the ethical leadership construct.

The aim of scientific research is to produce new knowledge or add to that which is already known. Consequently, this study should add to an already existing body of scientific knowledge by providing an explanation for phenomena (such as ethical leadership) and sharing how this knowledge was obtained. The credibility of scientific investigation is determined by its methodology. In this sense, the methodology of a study could either harm or establish the credibility of a scientific study. In the spirit of good research, the methodology should also be made available and subjected to critical review from members of the scientific community.

Chapter 3 will provide an outline of the research methodology for this study. This discussion will address the process of development for the Ethical Leadership Behaviour Scale (ELBS); the research problem and substantive research hypotheses; the sampling procedure that was followed; the research design chosen; how missing

values were dealt with; and statistical analyses and interpretation guidelines (i.e. item analysis, dimensionality analysis, and confirmatory factor analysis).

3.2. THE DEVELOPMENT OF THE ETHICAL LEADERSHIP SCALE

The Ethical Leadership Behavioural Scale (ELBS) measures ethical leadership for those in middle- to upper managerial levels across all organisations and industries. This instrument assumes that leaders in any given position demonstrate some form of necessary leadership behaviours, and its goal is to test whether the individual may be viewed as an ethical leader. The ELBS was developed to be used in other-rater format, where leaders were assessed on the behaviours of ethical leadership by their direct subordinates. Therefore, the ELBS specifically measures whether individuals display leadership behaviours that are consistent with the competencies associated with an ethical leadership style, based on the ratings obtained from their direct subordinates.

The measuring instrument was designed so that participants could rate their leader on a 6-point frequency scale, ranging from 'Never' to 'Always'. This scale measures how often the leader displayed the behaviour described in the item, observed through the eyes of their subordinates. Each subscale (or dimension) contains items that describe behavioural expressions of the latent ethical leadership dimensions. Ideally, each subscale should have provided a relatively uncontaminated expression of the latent ethical leadership dimensions to which it was linked.

However, as human behaviour is complexly determined, this research takes the stance that no behaviour will reflect only a single underlying latent variable exclusively. Therefore, the items should ideally provide a relatively pure reflection of each one of the five dimensions, yet the systematic measurement error influences would share minimal common variance. Each set of items (i.e. the group of items that represent an ethical leadership dimensions) essentially serves as a unidimensional subscale of ethical leadership.

The items represent critical behavioural incidents that are associated with a high and a low standing on each one of the five ethical leadership dimensions. This can be

illustrated by an item from the ELBS. An example of a critical behavioural incident would be whether the leader displays behaviour that is trustworthy. If the subordinate were to give the leader a high score on an item such as 'the leader can be trusted' (Brown et al., 2005), it would indicate that the individual has a high standing on the ethical leadership dimension of 'morality'. However, if the subordinate gave the individual a low rating on this item, the individual would have a low standing on the ethical leadership dimension of 'morality'.

The definition of each dimension also assists in establishing the content validity of each critical behavioural incident (or item). Items were written in the form of short, specific statements. Respondents were asked to respond to these statements by using a 6-point scale. The response indicated the frequency with which the leader had displayed the behaviour referred to by the item.

3.2.2. Item Generation

The items for the ELBS were sourced from the current literature on ethical leadership or newly written.   The initial version of the ELBS is shown in Chapter 2, Table 2.6 and 2.7. In establishing the content and face validity of the proposed scale, a Quasi-Delphi Technique was used (Hasson, Keeney, & McKenna, 2000). The term Quasi-Delphi is used because, unlike a traditional Delphi, the Quasi-Delphi technique used here consisted only of one round of expert feedback without having experts reach consensus. This was done for the sake of practicality and due to the nature of the research being predominantly quantitative. Experts in ethics and leadership were asked to scrutinise both the dimensions and items proposed for ethical leadership by rating the essentiality of each dimension and item on a three-point scale, i.e. (1) Irrelevant, (2) Useful, but not essential, (3) Essential, must be included. Each rating option was also defined to assure appropriate use of the rating scale. See Table 3.1. below.

Table 3.1

Definition of Rating Scale used for the Quasi-Delphi

Rating	Description	Meaning
1	Irrelevant	The item/dimension is not related to ethical leadership in any way. It is not appropriate for use in the questionnaire and should be deleted.
2	Useful, but not essential	This item/dimension represents some part of Ethical Leadership, but it would not be missed if excluded from the questionnaire. There might be items/dimensions that are more relevant, appropriate or critical than this item/dimension.
3	Essential, must be included	This is a critically important item/dimension. Without it, the questionnaire would not accurately represent the construct of Ethical Leadership. This item/dimension should be included in the final questionnaire.

Specifically, the participants were asked to consider the following criteria when giving their expert rating (Worthington & Whittaker, 2006, p. 814): (a) Does the item assess the behaviour described in the definition of the dimension it relates to, or is it better suited to another dimension? (b) Is the item clear and unambiguous? (c) Is the language of the item clear enough for employees with Grade 12 level English to understand? (d) Can the behaviour assessed by the items be observed by others? (e) Does each item assess only one construct? (f) Does this item assess a unique construct, which is not measured by any other listed for a specific dimension? If there is duplication, which is the stronger item? A copy of the Quasi-Delphi rating form is shown in Appendix B.

Participants in the Quasi-Delphi were privately contacted and asked if they are interested in taking part in the research. The experts were personal acquaintances of the researcher and supervisor, and contact details were therefore obtained via the personal network of the research supervisor.   After the experts gave their informed consent, the expert rating questionnaire was sent for completion via email. The expert feedback was used to refine the questionnaire before data collection. A total of ten participants completed the expert rating questionnaire. Of these ten participants: Three are employed as Industrial Psychologists in the South African National Defence

Force; five currently serve as academics affiliated with South African higher institutions, and two are Organisational Development consultants working in the corporate sector.

As the Quasi-Delphi process did not aim to reach consensus, the feedback was incorporated by the researcher. Respondent's ratings were captured on excel, and a Content Validity Ratio (CVR) was calculated for each item to guide the researcher in refining the questionnaire (Wilson & Schumsky, 2012). In addition to the CVR, a combined version of the Quasi-Delphi rating form was drafted to allow for easy comparison of feedback across respondents.

The Quasi-Delphi feedback was incorporated in the following ways: (a) The wording of the dimension definitions was changed; (b) Items were either rephrased, deleted or moved to represent a more appropriate dimension (c) The number of items was reduced from 161 to 73.

In summary the final Ethical Leadership Behavioural Scale is made up of a total of 73 items. As part of these items, 31 items were self-developed (42.5%), 40 items were adapted from existing items of measures of ethical leadership (54.8%) and two original items were retained (2.7%).

3.2.1. Ethical Considerations

Ethical clearance for the study was obtained from the ethics committee of the University of Stellenbosch (DESC) (reference number SU-HSD-003203) for both phases of the research, namely the Quasi-Delphi phase and the main phase. Regarding the Quasi-Delphi phase, experts in ethics and leadership who were part of the personal network of the researcher and supervisor were contacted to participate in the study. After participants gave their informed consent, they were asked to complete the Quasi-Delphi rating form (See Appendix B) that was distributed via email. This meant that the responses for the Quasi-Delphi were not anonymous to the researcher; however, participants received an email addressed directly to them, which meant that he/she was not aware of the identity of other participants. Quasi-Delphi

responses were treated as confidential and responses were safeguarded on a password-protected computer.

The final ELBS was distributed via the electronic system of Stellenbosch University (SunSuveys) for the main study. The link to the questionnaire was distributed via social media (i.e. Facebook, LinkedIn and WhatsApp). Responses were treated anonymously and confidentially. Participation was voluntary, and no reward or incentive was offered to participants for partaking in the study. Responses were safeguarded on a password-protected computer.

3.3. SUBSTANTIVE RESEARCH HYPOTHESIS

The ELBS was developed to serve as a measurement of ethical leadership that can facilitate the eventual development and empirical testing of a comprehensive structural model. However, it must be noted that the ELBS can only be used with certainty to operationalise the five ethical leadership dimensions in the model if credible evidence exists in the form of reliability and construct validity.

The substantive hypothesis tested in this study is that the ELBS provides a construct valid and reliable measure of ethical leadership as defined by the instrument, for South African employees in middle to upper leadership positions. Subsequently, the substantive research hypothesis leads to the following specific operational hypotheses, illustrated in Table 3.2 below.

Table 3.2
Operational Hypotheses for the Study

(a)	The measurement model can closely reproduce the covariances that are observed between the items compromising each of the sub-scales.
(b)	The factor loadings of the ELBS items on their designated latent ethical leadership behavioural dimensions are significant (p<.05) and large (λ_{ij}>.50).
(c)	The measurement error variance that is associated with each item is sufficiently small.
(d)	The latent leadership dimensions explain large proportions of the variance in their representative items.

(e)   The latent leadership dimensions show low to moderate correlations with each other (i.e., the latent dimensions of ethical leadership used in die ELBS display discriminant validity).

3.4. SAMPLING

This study used Structural Equation Modelling (SEM), a large sample technique. The measuring instrument measured ethical leadership behaviours in middle and top management positions. The ELBS intends to establish whether an individual, who is currently in a leadership position in any given South African organisation, operates with a predominantly ethical leadership style and may, therefore, be considered an ethical leader. As the ELBS was designed in other-rater format, the target population consists of multi-cultural South African employees who report to leaders in middle and top management positions.

In selecting an appropriate sampling method, the researcher considered both probability or non-probability sampling methods. Probability sampling is built on the cornerstone of random selection and offers the benefit of accurate representations of whole populations and statistical accuracy (Babbie, 2013, p.210). For the sake of feasibility and practicality, non-probability sampling was determined a sensible sampling method for the current study (Babbie, 2013, p.206). Subsequently, a decision was made to pursue subjects based on their availability (i.e. convenience sampling) and to ask participants to share the questionnaire with others that may be interested in participating in the study (i.e. snowball sampling).

Following the identification of the sampling method, the desired sample size was considered. Generally, sample sizes of 200 and more observations are regarded as an appropriate minimum sample size for SEM applications (Kelloway, 1998; Kline, 2005). However, more specific guidelines may consider (a) the ratio between participants and items; (b) the statistical power associated with the test of exact and close fit; and (c) calculating the freed parameters presented by the model.

Concerning the ratio guideline, researchers recommend that the minimum ratio of participants to items should be between 3:1 and 10:1 (Hinkin, 1998; MacKenzie et al.,

2011; Worthington & Whittaker, 2006). Following this guideline, the desired sample size was between 219 and 730 observations.

As per the second suggested guideline (i.e. considering the statistical power of the model), the ELBS five-factor model consisted of 229 freed parameters and 2545 degrees of freedom. Software developed by Preacher and Coffman (2006) in R was used to calculate the sample size required to ensure a statistical power of at least .80 when testing the null hypothesis of close fit. RMSEA under H_a was specified as .08. The software returned a sample size of 20. This small sample size can be attributed to the large degrees of freedom for the model (df= 2545).

As per the third sampling guideline (i.e. calculating the freed parameters presented by the model), it is suggested that the number of observations in the model should exceed the number of freed parameters to be estimated. One (rather stringent) guideline proposes at least 15 observations for each parameter estimated in the model (Hair, Black, Banin & Anderson, 2010). This implies a sample size of 3435 observations. Hair et al. (2010, p.662) also provide a summary of the required sample size that is available in literature:

> Based on the discussion of sample size, the following suggestions for minimum sample sizes are offered based on the model complexity and basic measurement characteristics:
>
> - Minimum sample size-100: Models containing five or fewer constructs, each with more than three items (observed variables), and with high item communalities (.6 or higher).
> - Minimum sample size-150: Models with seven or fewer constructs, modest communalities (.5), and no underidentified constructs.
> - Minimum sample size-300: Models with seven or fewer constructs, lower communalities (below.45), and/or multiple underidentified (fewer than three items) constructs.
> - Minimum sample size-500: Models with large numbers of constructs, some with lower commonalities, and/or having fewer than three measured items.
>
> In addition to these characteristics of the model being estimated, sample size should be increased in the following circumstances: (1) data deviates

from multivariate normality, (2) sample-intensive estimation techniques (e.g., ADF) are used, or (3) missing data exceeds 10%.

The sample that was eventually obtained failed to meet the sample size guidelines as discussed above as the total number of observations was a modest 202. When discussing sample size, a natural concern would be whether the sample of the study gave an appropriate representation of the population for which it was designed (MacKenzie et al., 2010). In this regard, the consequences of the non-probability sampling technique are seen as the sample group is not considered representative of the South African population.

In general, the sample can be described as typically female, around the age of 28 years old, white, in a non-managerial position, and working for a large organisation. It is strongly recommended that future research on the ELBS ensure the use of a larger and more representative sample.

Table 3.3
Sample Details

Gender		%
Male	81	40.10
Female	121	59.90
Total	202	100

Race		%
African	22	10.89
Indian	5	2.48
Coloured	19	9.41
White	155	76.73
Other	1	0.50
Total	202	100

Job Level		%
Non-Managerial	95	47.03
Lower Level Management	33	16.34
Middle-Level Management	44	21.78
Upper Level Management	30	14.85
Total	202	100

Industry		%

Table 3.3 (Continued) Retail	25	12.38
Manufacturing	19	9.41
Financial Services	20	9.90
Construction	5	2.48
Health and Welfare Services	19	9.41
Public Service	34	16.83
Other	80	39.60
Total	202	100

Size of Organisation		%
Micro-Organisation *1 to 9 employees*	41	20.30
Small Organisation *10 to 49 employees*	40	19.80
Medium Organisation *50 to 249 employees*	33	16.34
Large Organisation *250 and more employees*	88	43.56
Total	202	100

Age	
Average Age of Participants	28

Sample Size	
Number of participants	202

3.5. RESEARCH DESIGN

The purpose of the research design is to generate empirical evidence that is either in favour or against the above-mentioned operational hypotheses, to answer the research-initiating question. The research design achieves this by controlling variance, through manipulating the dependent variable (Kerlinger & Lee, 2000). Generally, the operational research hypothesis within an explanatory study would be comprised as a tentative relational statement hypothesising a specific relationship between at least one independent observed variable (X) and at least one dependent observed variable (Y). The most basic form in which the operational hypothesis may present is: "If X changes in a specific way, then Y will change along with it in a specific way." Therefore, the research design becomes a systematic plan that guides the testing of the operational hypotheses. The credibility of the study and the interpretation of the results are determined by the degree to which the research design

maximises systematic variance; minuses error variance; and controls extraneous variance (Kerlinger & Lee, 2000).

The substantive and operational research hypotheses for this study do not have the traditional relational structure that is typical for the hypotheses formulated in explanatory research. This study focusses on a single multidimensional latent variable, namely ethical leadership, without examining the specific structural relationships between this latent variable and other latent variables. However, specific measurement relations do exist between the items contained within the instrument and the latent ethical leadership dimensions they were earmarked to represent.

The measurement model assumes that the relationship between the items and their specific dimensions will be positive and significant. In more technical terms, the slope of the regression of the indicators (X) on the specific ethical leadership dimension (ξ) is assumed to be positive and greater than zero. Additionally, the measurement model makes assumptions about the covariance between the latent variables and the covariance between the measurement error terms. To empirically test the merits of the measurement model still requires some plan or strategy. The concept of a research design is relevant to this research study, even though it requires a different line of thinking regarding research design.

This study will make use of an *ex post facto* correlational design. The variables used in this study do not allow for manipulation by the researcher, as the variances that are manifested within them have already occurred and cannot inherently be manipulated (Kerlinger & Lee, 2000). Limitations of an *ex post facto* research design include the inability to manipulate independent variables; the lack of power to randomise; and the risk of improper interpretation (Kerlinger & Lee, 2000).

When comparing an *ex post facto* design with a true experimental design, it must be noted that *ex post facto* designs make control quite challenging. The likelihood does exist that the researcher may misinterpret the results thereof. Subsequently, the researcher should proceed with caution regarding the interpretation of results. To test the merits of the measurement relation assumptions made by the measurement model, an *ex post facto* correlation design guides the researcher in examining the

observed variables (i.e. the items of the ELBS) and determines the inter-item covariance matrix. During this process, estimates of the freed measurement model parameters are obtained with the purpose of reproducing the observed covariance matrix in the most accurate way that is possible (Diamantopoulos & Siguaw, 2000). Whether the estimation of the freed measurement model will be regarded as valid will depend on the nature of the model's fit. If the fitted model fails in accurately reproducing the observed covariance matrix, it will be assumed that the measurement model does not provide an acceptable explanation for the observed covariance matrix (Byrne, 1989; Kelloway, 1998). When applied to the current study, this would mean that the ELBS does not successfully identify individuals who operate with a predominant ethical leadership style within their organisation. However, the opposite of this scenario would not be true.

If it is the case that the covariance matrix closely corresponds to the observed covariance matrix it does not necessarily mean that the processes suggested by the measurement model must have produced the observed covariance matrix, merely that it could have.   This outcome would therefore not mean that the ELBS measures the ethical leadership construct as intended. Rather a high degree of fit between the observed and estimated covariance matrices would suggest that the measurement model provided one plausible explanation for the observed covariance matrix.

3.6. MISSING VALUES

An important consideration of the research methodology of the study was the method used to address missing values. Missing values mostly occur when participants do not respond to all the items in the research questionnaire and, as a result, an incomplete response is submitted. The traditional method used to deal with this scenario is list-wise deletion, which ultimately leads to a set of dataset with only complete cases (Mels, 2010). This naturally leads to a smaller set of data with limited usefulness.

As an alternative method of dealing with missing values, LISREL 8.8 provides the option to researchers of using Multiple Imputation (MI) or Full Information Maximum Likelihood estimation (FIML) (Jöreskog & Sörbom, 2003). These methods assume

values from the original sample that are used in the place of missing values. When using the MI method, it is assumed that values are randomly missing and that the indicators consist of continuous scales that are all normally distributed. Contrasting to MI, FIML follows a repetitive or algorithmic approach in that LISREL 8.8 will compute a case-wise likelihood function by only using variables that are observed for specific cases (Du Toit & Mels, 2002).

It was decided that if the assumption of multivariate normality was not conformed to by the data set, imputation by means of matching would be used. Here missing values would be replaced with real values. In the substitution process, missing values would have been replaced with values that were derived from other cases that are observed to have a similar response pattern (Jöreskog & Sörbom, 2003). If this were the case, the item and dimensionality analyses would have had to be repeated on the imputed dataset to evaluate the impact of the imputation.

However, as the ELBS was distributed via the electronic platform, SunSuveys, there were no incomplete responses. The questionnaire was configured in such a way that does not allow research participants to submit incomplete questionnaires (all questions were specified as mandatory).

3.7. STATISTICAL ANALYSIS

The following section describes the research methodology for the current study, specifically regarding the Item (Reliability) analysis, Exploratory Factor analysis (EFA), Confirmatory Factor Analysis (CFA), Discriminant Validity and expected results.

3.7.1. Item Analysis

The ELBS was designed so that uni-dimensional sets of items would reflect variance in each of the five latent ethical leadership dimensions. Subsequently, the items should function as homogenous sets of stimuli which would evoke behaviour that is a relatively uncontaminated expression primarily of the ethical leadership construct. Before fitting the measurement model underlying the ELBS, item analysis was used to examine the assumption that the items comprising each of the five subscales of the ELBB reflect a common underlying latent variable.

Item analysis examines this assumption of a single underlying variable for each subscale by considering the clarity with which an item represents the dimension it was designed to measure.   Item analysis is defined as "an assessment of whether each of the items included in a composite measure makes an independent contribution or merely duplicates the contribution of other items in the measure" (Babbie, 2013, p.209). In this way, item analysis was used to create validity and reliability in the ELBS (Anastasi & Urbina, 1997) by discriminating between good and poor items.

An item is considered poor if it is unable to elicit different responses from respondents that have the same relative standing on the latent variable that the item measures. In other words, the item should be able to sensitively discriminate between subtle differences on the latent variable that is being measured. Further, a poor item does not respond in the same way as other items from the same scale/subscale. Taken together, item analysis aims to determine which items in the scale adversely affect the overall reliability due to their inclusion. Through this identification process, item analysis adds significant value to item development and refinement (Foxcroft & Roodt, 2013).

The following criteria were considered when evaluating items (Wessels, 2018, p.200). Items were considered problematic if the following conditions applied to them:

- Extreme item means;
- Small item standard deviations; item standard deviations were considered small to the extent that they were distinct outliers to the lower end in the distribution of item standard deviations;
- Consistently smaller correlations with the remaining items in the scale or subscale; correlations were considered small if they are smaller than the mean inter-item correlation;
- Small item-total correlations; item-total correlations were considered small to the extent that they were distinct outliers to the lower end in the distribution of item-total correlations;
- Small squared multiple correlations; these correlations were considered small to the extent that they were distinct outliers to the lower end in the distribution of squared multiple correlations;

- An increase or a small decrease in scale variance upon deletion of an item;
- An increase in the Cronbach alpha upon deletion of an item.

Items were considered for deletion if the characteristics mentioned above were present. However, these characteristics are not viewed in isolation. Several pieces of evidence should support the deletion of an item. A too aggressive approach in the removal of items based on marginally problematic item statistics may result in the loss of the richness/breath of a construct (Wessels, 2018).

3.7.2. Dimensionality Analysis (EFA)

Exploratory factor analysis aims to explain the observed correlation matrix with one or more common underlying factors. EFA is defined as "…an inductivity method designed to discover an optimal set of factors that account for the covariation among the items" (Skrondal & Rabe-Hesketh, 2004, p. 255). The ELBS was designed so that each of the five dimensions would be reflected by unidimensional sets of items. The assumption made about the single underlying leadership behavioural measure was evaluated to determine whether it could satisfactorily account for the variance that might occur in each of the five subscales.

Costello and Osborne (2005) suggest four steps in following the process of EFA. Firstly, the factor analysis ability of the subscale must be evaluated. This was established by using the KMO and Bartlett's test, which is discussed in greater detail in Chapter 4. Secondly, a factor extraction method must be chosen (Costello & Osborne, 2005). Principle axis factoring (PAF) was selected as an extraction technique as this technique is concerned with finding common variance or common underlying dimensions per latent variable. In other words, this technique seeks the least number of factors that can account for common variance of a set of latent variables (Wessels, 2018).

Thirdly, a decision must be made regarding the number of factors that will be extracted (Costello & Osborne, 2005). In this study, a dimension was regarded unidimensional if the eigenvalue-greater-than-one rule resulted in the extraction of a single factor; and

if the magnitude of factor loadings were reasonably high (>.50) (Theron, 2015). Lastly, a rotation method must be chosen (Costello & Osborne, 2005). Considering that the study aimed to design a measure with essentially unidimensional dimensions, the rotation of the extracted factor would not be meaningful. However, in the case of factor fission, an oblique rotation method was chosen to assist in interpreting and reporting.

3.7.3. Structural Equation Modelling (SEM)

After the examination regarding the unidimensionality of subscales through EFA, the fit of the proposed ELBS was tested. This was done through structural equation modelling (SEM), specifically, confirmatory factor analysis (CFA). SEM is widely used in the social sciences, as "Confirmatory factor analysis and an application of structural equation modelling, are both more rigorous and more parsimonious than the 'more traditional' techniques of exploratory factor analysis" (Kelloway, 1998, p.2).

In this sense, SEM is widely used as a method to determine the quality of the measurement. CFA will substitute the weakness in EFA concerning its inability to numerically describe the goodness of fit that has resulted from the factor structure (Long, 1983). This will ensure a more stringent interpretation of unidimensionality and serve as confirmation to the results obtained from EFA.

CFA is generally used for testing procedures of specific hypotheses that are linked to several latent variables underlying the observed inter-item covariance matrix. The nature of the various relationships that exist between the factors; and the nature of the loading pattern of the items are also subject to analysis. LISREL model fit indices were only interpreted in favour or not in favour of the fitted measurement model if it can be proved that the indicator variables used to operationalise the latent variables successfully reflect the specific latent variables they were earmarked to represent.

The ELBS would be considered construct valid if the measurement model fits at least closely and if the indicator variables successfully measure the latent variables, as was initially intended. If this would be the case, it would mean that the covariances predicted by the theoretical model stands in agreement with the observed covariance matrix. In addition to this, the data output would display coefficients and modification

indices that could be useful concerning the improvement of the measurement model. However, good model fit does not indicate that the latent outcome variables have been measured validly and reliably. The statistical significance and magnitude Λ_x and Θ_δ estimates need to be determined. Large and significant λ_x and significant and small θ_δ would indicate a valid and reliable measurement.

The evaluation of the measurement model via CFA involved a four-step process. These steps were model specification; evaluation of model identification; estimation of model parameters; and testing model fit (Hair et al., 2006). A more detailed discussion of each step follows. The results for these analyses may be viewed in Chapter 4.

3.7.3.1. *Model Specification*

The measurement model represents the design intention of the ELBS, namely that each of the 73 suggested items would load onto a specific latent ethical leadership dimension. The inferences that are derived from scores achieved on the item indicators about the latent ethical leadership dimension would be considered valid if the measurement model shows appropriate fit, and if the indicators successfully load onto their intended latent ethical leadership dimension. Results that are in line with the operational hypotheses listed previously would confirm the substantive research hypothesis, namely that the indicators can significantly explain variance in the latent outcome variables that collectively define ethical leadership.

The ELBS measurement model is displayed as a path diagram in Figure 3.1. This model depicts the ELBS with the five latent ethical leadership dimensions and the 73 items in the final ELBS.   The measurement model is expressed by the following matrix equation:

$$\mathbf{X} = \Lambda^X \xi + \delta$$

Where:

- **X** is a 73 x 1 column vector of observed item scores
- Λ^X is a 73 x 5-factor loading matrix
- ξ is a 5 x 1 column vector of ethical leadership dimensions; and
- δ is a 73 x 1 column vector of measurement error terms.

The measurement model is fully specified by defining Θ_δ as a diagonal matrix and by freeing all off-diagonal elements of Φ.
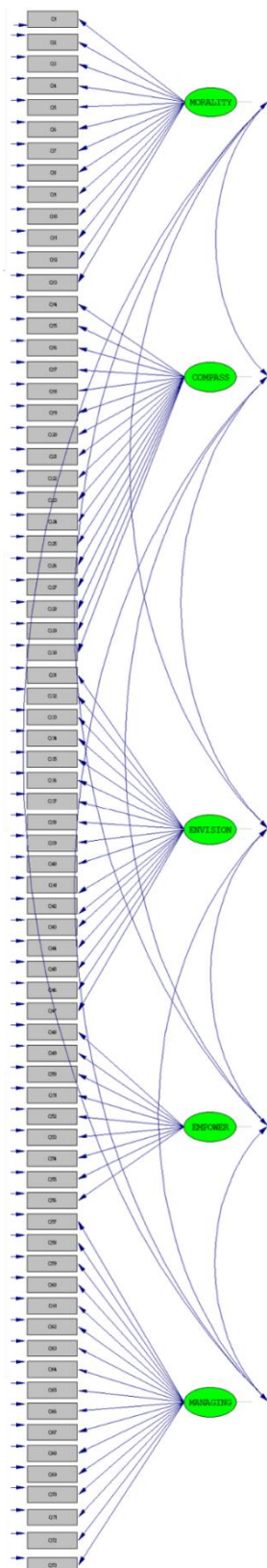
Figure 3.1

Measurement Model Path Diagram

3.7.3.2. *Evaluation of Model Identification*

Following model specification, the model may be estimated by using LISREL to provide a solution for the specified measurement model. Estimates of the freed measurement model parameters can be obtained if the number of unknown elements in the equations is equal to or less the number of unique pieces of information available. The following formula can be used to determine whether the specified model meets the minimum requirement for identification: $t \leq s/2$, where:

- t = number of parameters to be estimated
- s = number of variances and covariances amongst the manifest (observable) variables, calculated as $(p)(p+1)$
- p = number of items.

If $t > s/2$ the model is unidentified. If a model is unidentified "it is the failure of the combined model and data constraints to identify (locate or determine) unique estimates that results in the identification problem" (Diamantopoulos & Siguaw, 2000, p.48). If $t = s/2$, the model is just-identified. A just-identified model would imply that a single unique solution can be obtained for the parameter estimates (Diamantopoulos & Siguaw, 2000 p.48). However, a just-identified model has zero degrees of freedom, and therefore no variance-covariance information remains to test the derived model solution (Diamantopoulos & Siguaw, 2000 p.48).

In the case of $t < s/2$, the model is overidentified. This would mean that more than one estimate of each parameter can be obtained. Over-identification is a necessary condition to evaluate the reliability and construct validity of the ELBS via confirmatory factor analysis using SEM. For this study, t=229 and t=2701, which implies that the model is overidentified.

3.7.3.3. *Estimation of Model Parameters*
3.7.3.3.1. *Variable Type*
An important consideration must be made regarding whether to fit the measurement model by representing the five latent ethical leadership dimensions with single items or to create item parcels. Compared to single items, item parcels better approximate

normally distributed continuous variables when they are used as indicators of latent constructs. Item parcelling may prove to be useful when there are too many items to manage, and they are more likely to meet the assumptions underlying maximum likelihood estimation than single items. The use of item parcels entails converting ordered-categorical data into continuous data. This is done in the light of minimising the attenuation caused by using ordered-categorical variables (Dunbar-Isaacson, 2006).

Item parcelling can provide a possible solution for some data problems that include non-normality, small sample sizes and unstable parameter estimates. This is because item parcels better approximate normally distributed continuous variables when they are used as indicators of latent constructs when compared to single items. By using item parcels in this study, new variables could be created that would serve as a better estimation of normally distributed continuous variables that would reduce the distortion of model parameter estimates.   Item parcels are also more likely to meet the assumptions underlying maximum likelihood estimation. By using item parcels, the approach would be to convert ordered-categorical data into continuous data.

The application of parcels within SEM is based on its proposed advantages when compared to single items. However, there are several disadvantages associated with item parcels. Difficulties in interpretation may occur when item parcels are deemed to measure a multi-dimensional construct. In addition to this, item parcelling may mask statistical problems that should be considered within the measurement model. Item parcels may hide weaker items as stronger ones can veil their undesired qualities.

This study aims to develop a reliable and valid measure of ethical leadership; therefore, the ideal approach for this study would be to fit a measurement model in which the individual items serve as indicator variables of the latent ethical leadership dimensions. Having considered these issues, this study will make use of individual items.

3.7.3.3.2. *Univariate and Multivariate Normality*

When data is specified as continuous, LISREL will automatically use maximum likelihood estimation when fitting the measurement model. This estimation technique assumes that the data follows a multivariate normal distribution (Theron, 2015) yet this assumption needs to be tested. The data were tested for both univariate and multivariate normality, after which the researcher attempted to normalise the data. The results of these tests are discussed in Chapter 4.

3.7.3.4 *Interpretation of Model Fit*

Model fit refers to the ability of a theoretically proposed model to accurately replicate the observations made on the latent variables comprising the model (Hooper, Coughlan & Mullen, 2008). More specifically, model fit refers to how well the model can account for the observed covariance matrix. If the observed covariance matrix can be closely reproduced from the estimates from the freed model parameters, the model fits the data (Theron, 2015). Therefore, the ideal result for this study was to achieve a reasonably close fit between theory and data. The model fit will be tested by testing the null hypothesis for exact fit and close fit (H_{01} and H_{02}).

Various fit indices were used to guide the researcher in establishing model fit. The goodness-of-fit indices that were used for this study are summarised in Table 3.3. The fit indices in this table are a combination of the indices proposed by Diamantopoulos and Siguaw, (2000); Kelloway (1998) and Hooper et al. (2008). The indices listed in the Table 3.3 were used to interpret the analyses results and reach a meaningful conclusion regarding model fit.

Table 3.4

Intended Criteria Used for Goodness-of-Fit Indices

Goodness of fit indices	Criteria
Absolute Fit Measures	
Minimum fit function Chi-Square	A non-significant result indicates good model fit.
χ^2/df	Values between 2 and 5 indicate good fit
Root Mean Square Error of Approximation (RMSEA)	Values of 0.08 or below indicate acceptable fit, those below 0.05 indicate good fit, and values below 0.01 indicate outstanding fit.
P-Value for Test of Close Fit (RMSEA < 0.05)	Values > 0.05 indicate good fit.

Table 3.4 (Continued)	
90% Confidence Interval for RMSEA	This is a 90% confidence interval of RMSEA testing the closeness of fit (i.e., testing the hypothesis H0: RMSEA < 0.05).
Root Mean Square Residual (RMR)	Lower values indicate better fit, with values below 0.08 indicative of good fit.
Standardised RMR	Lower values indicate better fit, with values less than 0.05 indicating good fit.
Goodness of Fit Index (GFI)	Values closer to 1 and > 0.90 represent good fit.
Incremental Fit Measures	
Normed Fit Index (NFI)	Values closer to 1 indicate better fit, with values > 0.90 indicative of acceptable fit and > 0.95 of good fit.
Non-Normed Fit Index (NNFI)	Higher values indicate better fit, with values > 0.90 indicative of acceptable fit and > 0.95 of good fit.
Comparative Fit Index (CFI)	Values closer to 1 indicate better fit, with values > 0.90 indicative of acceptable fit and > 0.95 indicative of good fit.
Incremental Fit Index (IFI)	Values closer to 1 indicate better fit, with values > 0.90 indicative of acceptable fit and > 0.95 of good fit.
Relative Fit Index (RFI)	Values closer to 1 indicate better fit, with values > 0.09 indicative of acceptable fit and > 0.95 of good fit.

(Diamantopoulos & Siguaw, 2000; Hooper et al., 2008; Kelloway, 2017)

In addition to model fit statistics, both the standardised residuals and modification indices were evaluated for the ELBS measurement model. If the model shows good fit, the standardised residuals are expected to be small. A standardised residual is seen as large when it exceeds +2.58 or -2.58 (Diamantopoulos & Siguaw, 2000).

The measurement model parameters can only be interpreted if the model shows close fit. According to Wessels (2018) interpreting parameter estimates involves "evaluating the statistical significance and magnitude of the freed factor loadings **Λx**, the statistical significance and magnitude of the measurement error variances in the main diagonal in **Θδ**, the statistical significance and magnitude of the measurement error covariances in the off-diagonal section of **Θ** and the statistical significance and magnitude of the covariance between the latent variables in **Φ**."

Moreover, the operationalisation of the latent variables is considered successful if (Theron, 2015, Hair et al., 2006):

a) The measurement model reflecting the allocation of items to the latent variable they were designed to reflect shows, at least close fit ($H_{01}b$: RMSEA≤.05 is not rejected);

b) The (unstandardised) freed factor loadings (Λx) are all statistically significant (p<.05) and the (completely standardised) freed factor loadings are all large (λ_{ij}≥.71) for all items;

c) The (unstandardised) measurement error variances (Θ_δ) are statistically significant (p<.05), and the (completely standardised) measurement error variances are small for all items, and

d) The squared multiple correlations (R^2) values are large ($R^2 \geq .50$) for all items.

3.7.3.5. Statistical Hypotheses

Two overarching model fit hypotheses were tested. To begin with, the hypothesis of exact fit (H_{01}) will be tested.   This represents the stance that the hypothesised measurement model accurately reflects the measurement model in the parameter. Under this hypothesis, the measurement model should be able to reproduce the observed covariance matrix to a degree of accuracy that could be explained in terms of sampling error only, which creates a somewhat unrealistic yet not impossible situation. Consider the following argument made by Browne and Cudeck (1993): In applications of the analysis of covariance structures in the social sciences, it is implausible that any model that one uses is anything more than an approximation to reality. Since a null hypothesis that a model fits exactly in some population is known a priori to be false, it seems pointless even to try to test whether it is true. It is therefore not expected that the proposed measurement model will show exact fit.

H_{01}: RMSEA = 0

H_{a1}: RMSEA > 0

The following close fit hypothesis will also be tested. The hypothesis assumes that the measurement model underlying the ELBS only approximates the processes that operated to create the observed inter-item covariance matrix (Browne & Cudeck, 1993).

H_{02}: RMSEA ≤ .05

H_{a2}: RMSEA > .05

If the measurement model would at least demonstrate reasonable fit, in other words the close fit null hypothesis would not be rejected; the following factor loading null hypotheses would be tested:

H_{0j}: $\lambda_{ik}=0$; j=3, 4, 5, …, 75; i=1, 2, 3, ..., 73; k=1, 2, 3, ..., 5
H_{aj}: $\lambda_{ik}>0$; j=3, 4, 5, …, 75; i=1, 2, 3, ..., 73; k=1, 2, 3, ..., 5

If the close fit null hypothesis would not be rejected, in other words, if the measurement model would at least demonstrate reasonable model fit; the following null hypotheses would be tested pertaining to the freed elements in Θ_δ. The discriminant validity of the latent ethical leadership dimension inferences derived from each set of indicator variables will also be evaluated.

H_{0j}: $\Theta_\delta = 0$; j = 76, 77, ..., 149; i = 1, 2, 3, …, 73
H_{ai}: $\Theta_\delta > 0$; j = 76, 77, ..., 149; i = 1, 2, 3, …, 73

Again, if the close fit null hypothesis would not be rejected; or if the measurement model would at least demonstrate reasonable model fit; the following null hypotheses would be tested with regards to the freed elements in Φ.

H_{0j}: $\varphi_{pk} = 0$; j = 83, 84, ..., 110; p = 1, 2, 3, …, 8; k = 1, 2, 3, …, 8; p ≠ k
H_{aj}: $\varphi_{pk} > 0$; j = 83, 84, ..., 110; p = 1, 2, 3, …, 8; k = 1, 2, 3, …, 8; p ≠ k

3.7.3.6. Discriminant Validity

It is essential to establish discriminant validity to see if the ELBS dimensions and items all make a unique contribution to measuring the ethical leadership style. This calculation will be done with an excel macro, where the phi intercorrelations should ideally not exceed .70 and the confidence interval would not include the value 1 (Theron, 2015). If these two conditions were met, it would imply that the ELBS shows discriminant validity.

3.7.3.7. Power Assessment of The Measurement Model

It is essential to establish the statistical power of the ELBS measurement model. Statistical power refers to the probability of not rejecting an incorrect model, which relates to the probability of making a Type 1 error (i.e. rejecting a correct model). Statistical power was established through the use of software developed by Preacher and Coffman (2006) in R.

3.8. CONCLUSION

The aim of Chapter 3 was to outline the research methodology of the current study. This included a discussion of the development of the ELBS, the research problem and substantive research hypotheses. The sampling procedure and details were shown, after which the research design was specified. The method of dealing with missing values was addressed, and an outline of the statistical analyses was given. These analyses included item analysis, dimensionality analysis, and structural equation modelling.

The measurement model for the ELBS was specified, and interpretation guidelines were given to assist with the evaluation of model fit. The results of these analyses, together with their interpretations, are discussed in detail in Chapter 4.

CHAPTER 4
RESEARCH RESULTS

4.1. INTRODUCTION

In Chapter 3, the reader was provided with an overview of the research methodology used in this study. The purpose of Chapter 4 is not only to show the results obtained for the study but to evaluate their significance and meaningfulness critically. Moreover, these findings add to the body of research into ethical leadership, either by confirming what is already known about this construct, or by adding to existing knowledge of ethical leadership. The analyses will be discussed in the following order: firstly, a brief discussion on how missing values were dealt with; secondly, a critical review of the item analyses results; thirdly, the results of the dimensionality analyses; and lastly, the interpretation of the confirmatory factor analysis.

4.2. MISSING VALUES

Missing values result when participants omit questions when responding to a questionnaire. Missing values need to be addressed before starting the data analysis process. For the current study, the data were captured electronically. In designing the questionnaire, the researcher specified all responses as compulsory before the completed questionnaire could be submitted on Checkbox, the online survey system used by Stellenbosch University. Therefore, there were no missing values amongst the 202 cases.

4.3.   ITEM ANALYSIS

The ELBS was designed with the intention for item sets to reflect unidimensional sets of items that would explain variance in each of the five latent variables of ethical leadership. Respondents should respond to the items with behaviour that is an expression of the underlying elements of ethical leader behaviour that the items aim to measure. It is expected that moderate inter-item correlations should occur in each dimension. Additionally, descriptive item statistics were calculated to establish how well the items reflect the contents of each ethical leadership dimension. Item statistics were then used to identify and delete poor items from the instrument. Thus, a poor item would not be able to discriminate between different states of the dimension. An

item will also be considered for deletion if it does not reflect the common latent variable.

Item statistics specifically include the item-total correlation, the squared multiple correlations, the difference in scale reliability when the item is deleted, the difference in scale variance when the item is deleted, the inter-item correlations, the item mean and the item standard deviation (Murphy & Davidshofer, 1988). It is valuable to understand the meaning of each of these statistics.

Firstly, the item-total correlation is the correlation of the item with the sum of all the other items in a specific scale, excluding that specific item (Taylor, 2005). A low item-total correlation would imply that the item is not related to the construct that are measured by most of the other items in the scale. On the other hand, a high item-total correlation would imply that all the items in a dimension measure the same construct (although this does not indicate whether the construct being measured is unidimensional, or the intended construct). Ideally, the item-total statistics should exceed .30 (Pallant, 2010).

Secondly, the squared multiple correlation refers to the squared multiple correlations when regressing each item on a weighted linear composite of the remainder of the items from the specific dimension. A low squared multiple correlation implies that the variance in the item is not adequately explained by the common latent variable underlying the majority of the items (Murphy & Davidshofer, 2005). A high correlation implies that the specific item successfully reflects a common underlying factor.

Thirdly, the internal reliability or reliability coefficient of the dimension when an item is removed can also be used to establish whether the item has the same underlying meaning as the rest of the scale (Taylor, 2005). If the reliability improves after removing the item, the item might be problematic and is not considered a good indicator of ethical leadership. The reliability is also evaluated per subscale. The reliability of each subscale should ideally exceed .70 (Kerlinger & Lee, 2000).

Changes in the variance of the dimension is another item statistic that indicates whether an item succeeds in measuring ethical leadership. In the case of a poor item,

the dimension variance will increase, or only decrease marginally when the item is removed. The variance of a p-component linear composite (X_t) is expressed as follows:

$$S^2{}_t = S^2{}_1 + S22 + ... + S^2{}_p + 2S_1S_2r_{12} + 2S_1S_3r_{13} + ... + 2S_{(p-1)}S_pr_{p(p-1)}$$

In the equation above, if $S^2{}_i$ is low or item i correlates low with the rest of the items of the dimension, the variance of the linear composite would drop relatively little when item i is deleted.

4.3.1. Item Analysis Results for the Morality Subscale

In the Item Statistics displayed in Table 4.1., it is noted that the means are relatively high. Considering that these items were measured by using a 6-point scale, this is not problematic. These higher means most probably indicate negatively skewed item distributions. This could be explained by the nature of the construct and dimension that are rated, as respondents may be reluctant to rate their leader poorly when evaluating their moral character. In further examining these statistics, note that the items did not display standard deviations that would set them apart from the typical distribution observed for the rest of the items. This indicates that the items for the Morality subscale were sufficiently sensitive.

The Inter-Item Correlation Matrix showed moderate to high positive correlations, which exceeded .30 (Pallant, 2010). It is noted that item 12 shows lower inter-correlations when compared to the rest of the items. The mean inter-item correlation according to the Summary Statistics Table is .696, which means that Item 12 shows lower correlations than the inter-item correlation. This indicates that item 12 may not be regulated to the same extent by the source of systematic variance that underpins the responses to the other items.

The Cronbach Alpha for the Morality subscale is .966, which indicates satisfactory internal consistency (this exceeds the critical cut-off value of .70) (Kerlinger & Lee, 2000).   In considering the Item-Total Statistics below, one can note that item 12 is an outlier regarding the corrected item-total correlation distribution and even more so in

the squared multiple correlation distribution. However, the Cronbach Alpha will show only a slight improvement if Item 12 were to be deleted. Altogether, the evidence against item 12 is not compelling enough to warrant deletion. Therefore, no items were deleted from the Morality subscale.

Table 4.1

Reliability Analysis Results for The Morality Subscale

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

Item Statistics			
	Mean	Std. Deviation	N
Q1	4.87	1.219	202
Q2	4.87	1.211	202
Q3	5.04	1.152	202
Q4	5.11	1.050	202
Q5	5.00	1.302	202
Q6	4.87	1.203	202
Q7	4.95	1.149	202
Q8	4.61	1.407	202
Q9	4.85	1.254	202
Q10	4.65	1.516	202
Q11	4.43	1.322	202
Q12	4.73	1.352	202
Q13	4.72	1.409	202

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
Q1	57.84	168.605	.852	.815	.963
Q2	57.84	169.331	.834	.795	.963
Q3	57.66	170.563	.837	.782	.963
Q4	57.60	173.694	.805	.709	.964
Q5	57.70	166.279	.866	.809	.963
Q6	57.84	170.993	.783	.749	.965
Q7	57.76	171.677	.799	.761	.964
Q8	58.10	166.657	.783	.666	.965
Q9	57.86	166.787	.886	.800	.962
Q10	58.06	161.648	.859	.790	.963
Q11	58.28	168.172	.792	.708	.964
Q12	57.98	171.686	.665	.571	.967
Q13	57.99	162.975	.893	.819	.962

Inter-Item Correlation Matrix

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13
Q1	1.000	.825	.837	.722	.762	.712	.667	.669	.774	.753	.646	.528	.787
Q2	.825	1.000	.800	.708	.808	.689	.693	.639	.750	.688	.681	.477	.763
Q3	.837	.800	1.000	.712	.756	.687	.674	.628	.780	.681	.664	.532	.796
Q4	.722	.708	.712	1.000	.807	.677	.697	.611	.708	.699	.597	.536	.754
Q5	.762	.808	.756	.807	1.000	.728	.708	.658	.777	.767	.689	.549	.809
Q6	.712	.689	.687	.677	.728	1.000	.823	.599	.736	.676	.576	.462	.686
Q7	.667	.693	.674	.697	.708	.823	1.000	.640	.730	.721	.587	.539	.701
Q8	.669	.639	.628	.611	.658	.599	.640	1.000	.713	.777	.711	.601	.717
Q9	.774	.750	.780	.708	.777	.736	.730	.713	1.000	.782	.730	.647	.843
Q10	.753	.688	.681	.699	.767	.676	.721	.777	.782	1.000	.738	.621	.797
Q11	.646	.681	.664	.597	.689	.576	.587	.711	.730	.738	1.000	.688	.733
Q12	.528	.477	.532	.536	.549	.462	.539	.601	.647	.621	.688	1.000	.650
Q13	.787	.763	.796	.754	.809	.686	.701	.717	.843	.797	.733	.650	1.000

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	4.824	4.431	5.109	.678	1.153	.036	13
Item Variances	1.635	1.103	2.299	1.196	2.085	.109	13
Inter-Item Correlations	.696	.462	.843	.380	1.823	.007	13

4.3.2. Item Analysis Results for the Compassion Subscale

Once again, the items for the Compassion subscale showed relatively higher means, although it is not problematic (a 6-point rating scale was used) (See Table 4.2). The items did not display standard deviations that would set them apart from the typical distribution observed for the rest of the items, which indicates item sensitivity. The Inter-Item Correlation Matrix showed moderate to high positive correlations, which exceeded .30 (Pallant, 2010). It is noted that item 16 showed lower correlations overall when compared to the other items. The Summary Item statistics corroborate this – the correlations for item 16 are lower than the inter-item correlation means.

The Cronbach Alpha for the Compassion subscale is .98, which is satisfactory as it exceeds the critical cut-off value of .70 (Kerlinger & Lee, 2000). Regarding the Item-Total Statistics, one can see that item 16 is an outlier regarding the corrected item-total correlation distribution as well as the squared multiple correlation distribution. Although the Cronbach Alpha will show a slight improvement if item 16 were to be deleted, it would not be a significant improvement. Considering this, no items were deleted from the Compassion subscale.

Table 4.2.

Reliability Analysis Results for the Compassion Subscale

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardised Items	N of Items
.980	.981	17

Item Statistics			
	Mean	Std. Deviation	N
Q14	4.62	1.479	202
Q15	4.97	1.176	202
Q16	4.25	1.623	202
Q17	4.37	1.423	202
Q18	4.54	1.439	202
Q19	4.50	1.450	202
Q20	4.62	1.233	202
Q21	4.73	1.221	202
Q22	4.68	1.278	202
Q23	5.04	1.217	202
Q24	4.49	1.401	202
Q25	4.79	1.269	202
Q26	5.05	1.181	202
Q27	4.67	1.317	202
Q28	4.83	1.384	202
Q29	4.61	1.367	202
Q30	4.67	1.426	202

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
Q14	74.81	352.744	.820	.750	.979
Q15	74.46	361.981	.830	.757	.979
Q16	75.18	352.306	.747	.649	.981
Q17	75.05	350.619	.897	.842	.978
Q18	74.89	352.489	.850	.768	.979
Q19	74.93	352.383	.845	.775	.979
Q20	74.80	356.896	.903	.860	.978
Q21	74.69	356.851	.913	.876	.978
Q22	74.75	356.200	.884	.820	.979
Q23	74.39	359.830	.848	.814	.979
Q24	74.94	357.404	.776	.649	.980
Q25	74.64	354.779	.922	.878	.978
Q26	74.37	360.991	.849	.775	.979
Q27	74.76	354.573	.890	.818	.978
Q28	74.60	351.605	.905	.854	.978
Q29	74.81	354.870	.849	.769	.979
Q30	74.76	351.647	.875	.783	.979

Inter-Item Correlation Matrix

	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
Q14	1.000	.672	.585	.822	.679	.682	.731	.759	.712	.705	.674	.786	.721	.788	.748	.731	.744
Q15	.672	1.000	.596	.726	.724	.695	.754	.795	.749	.828	.643	.773	.750	.755	.774	.729	.733
Q16	.585	.596	1.000	.701	.684	.732	.703	.661	.713	.584	.587	.707	.600	.695	.661	.680	.655
Q17	.822	.726	.701	1.000	.808	.774	.832	.831	.805	.738	.737	.815	.743	.806	.808	.780	.811
Q18	.679	.724	.684	.808	1.000	.742	.785	.825	.763	.729	.658	.769	.738	.785	.792	.701	.750
Q19	.682	.695	.732	.774	.742	1.000	.840	.812	.734	.666	.671	.785	.696	.772	.767	.732	.749
Q20	.731	.754	.703	.832	.785	.840	1.000	.885	.839	.766	.718	.842	.745	.814	.813	.760	.800
Q21	.759	.795	.661	.831	.825	.812	.885	1.000	.812	.787	.743	.859	.766	.836	.844	.748	.818
Q22	.712	.749	.713	.805	.763	.734	.839	.812	1.000	.808	.720	.817	.783	.788	.790	.780	.782
Q23	.705	.828	.584	.738	.729	.666	.766	.787	.808	1.000	.671	.824	.802	.753	.811	.724	.762
Q24	.674	.643	.587	.737	.658	.671	.718	.743	.720	.671	1.000	.730	.702	.657	.698	.624	.719
Q25	.786	.773	.707	.815	.769	.785	.842	.859	.817	.824	.730	1.000	.827	.847	.880	.827	.805
Q26	.721	.750	.600	.743	.738	.696	.745	.766	.783	.802	.702	.827	1.000	.750	.825	.737	.752
Q27	.788	.755	.695	.806	.785	.772	.814	.836	.788	.753	.657	.847	.750	1.000	.823	.801	.789
Q28	.748	.774	.661	.808	.792	.767	.813	.844	.790	.811	.698	.880	.825	.823	1.000	.803	.838
Q29	.731	.729	.680	.780	.701	.732	.760	.748	.780	.724	.624	.827	.737	.801	.803	1.000	.758
Q30	.744	.733	.655	.811	.750	.749	.800	.818	.782	.762	.719	.805	.752	.789	.838	.758	1.000

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	4.672	4.248	5.054	.807	1.190	.048	17
Item Variances	1.826	1.382	2.635	1.253	1.906	.115	17
Inter-Item Correlations	.753	.584	.885	.301	1.515	.004	17

4.3.3. Item Analysis for the Ethical Envisioning Subscale

The means for the Ethical Envisioning subscale shows a similar trend than the Morality and Compassion subscales since it is relatively high (Table 4.3). The items for this scale did not display standard deviations that would set them apart from the typical distribution observed for the rest of the items, which indicates item sensitivity. The Inter-Item Correlation Matrix showed moderate to high, positive correlations that exceeded .30 (Pallant, 2010). Overall, item 41 seems to have lower correlations with other items, which warrants further investigation.

The Cronbach Alpha for the Ethical Envisioning subscale is .976, which is satisfactory as it exceeds the critical cut-off score of .70 (Kerlinger & Lee, 2000). Regarding the Item-Total Statistics, item 41 is an outlier regarding the corrected item-total correlation distribution, and even more so in the squared multiple correlation distribution. However, deleting this item will not significantly improve the internal consistency of the subscale. Altogether, the evidence against item 41 is not compelling enough to warrant deletion. Therefore, no items were deleted from the Ethical Envisioning subscale.

Table 4.3

Reliability Analysis Results for the Ethical Envisioning Subscale

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardised Items	N of Items
.976	.976	17

Item Statistics			
	Mean	Std. Deviation	N
Q31	4.96	1.243	202
Q32	4.40	1.615	202
Q33	4.70	1.440	202
Q34	4.78	1.346	202
Q35	4.50	1.487	202
Q36	4.55	1.526	202
Q37	4.98	1.389	202

Item Statistics			
Q38	4.74	1.437	202
Q39	5.08	1.136	202
Q40	4.71	1.288	202
Q41	4.48	1.401	202
Q42	4.36	1.481	202
Q43	4.90	1.275	202
Q44	4.69	1.366	202
Q45	4.65	1.400	202
Q46	4.62	1.413	202
Q47	4.64	1.457	202

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
Q31	74.79	366.248	.838	.753	.974
Q32	75.35	354.606	.830	.790	.974
Q33	75.04	357.476	.884	.843	.974
Q34	74.96	364.048	.814	.716	.975
Q35	75.24	355.973	.882	.822	.974
Q36	75.19	355.629	.864	.788	.974
Q37	74.76	365.306	.761	.643	.975
Q38	75.00	356.821	.899	.843	.973
Q39	74.66	371.380	.799	.773	.975
Q40	75.03	368.905	.750	.664	.975
Q41	75.26	371.160	.640	.516	.977
Q42	75.38	360.406	.802	.728	.975
Q43	74.85	366.320	.814	.772	.975
Q44	75.05	363.550	.811	.722	.975
Q45	75.09	358.892	.883	.833	.974
Q46	75.12	355.986	.932	.903	.973
Q47	75.10	355.666	.908	.872	.973

Inter-Item Correlation Matrix

	Q31	Q32	Q33	Q34	Q35	Q36	Q37	Q38	Q39	Q40	Q41	Q42	Q43	Q44	Q45	Q46	Q47
Q31	1.000	.715	.813	.696	.768	.713	.659	.804	.714	.632	.481	.668	.678	.701	.754	.806	.804
Q32	.715	1.000	.837	.756	.828	.783	.596	.746	.605	.634	.569	.730	.617	.664	.709	.759	.717
Q33	.813	.837	1.000	.769	.845	.794	.681	.813	.669	.680	.553	.719	.677	.722	.762	.822	.811
Q34	.696	.756	.769	1.000	.766	.744	.596	.755	.659	.581	.483	.691	.697	.640	.717	.765	.759
Q35	.768	.828	.845	.766	1.000	.807	.657	.791	.690	.648	.566	.760	.678	.714	.771	.827	.819
Q36	.713	.783	.794	.744	.807	1.000	.676	.792	.673	.668	.607	.764	.653	.661	.766	.802	.801
Q37	.659	.596	.681	.596	.657	.676	1.000	.730	.694	.561	.460	.603	.709	.684	.684	.744	.709
Q38	.804	.746	.813	.755	.791	.792	.730	1.000	.800	.682	.565	.681	.764	.724	.812	.880	.862
Q39	.714	.605	.669	.659	.690	.673	.694	.800	1.000	.697	.493	.541	.755	.655	.732	.801	.767
Q40	.632	.634	.680	.581	.648	.668	.561	.682	.697	1.000	.628	.660	.606	.626	.647	.678	.655
Q41	.481	.569	.553	.483	.566	.607	.460	.565	.493	.628	1.000	.607	.507	.514	.601	.617	.563
Q42	.668	.730	.719	.691	.760	.764	.603	.681	.541	.660	.607	1.000	.621	.690	.712	.736	.720
Q43	.678	.617	.677	.697	.678	.653	.709	.764	.755	.606	.507	.621	1.000	.776	.796	.809	.791
Q44	.701	.664	.722	.640	.714	.661	.684	.724	.655	.626	.514	.690	.776	1.000	.768	.775	.764
Q45	.754	.709	.762	.717	.771	.766	.684	.812	.732	.647	.601	.712	.796	.768	1.000	.891	.864
Q46	.806	.759	.822	.765	.827	.802	.744	.880	.801	.678	.617	.736	.809	.775	.891	1.000	.903
Q47	.804	.717	.811	.759	.819	.801	.709	.862	.767	.655	.563	.720	.791	.764	.864	.903	1.000

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	4.691	4.361	5.084	.723	1.166	.042	17
Item Variances	1.956	1.291	2.609	1.317	2.020	.099	17
Inter-Item Correlations	.706	.460	.903	.443	1.962	.008	17

4.3.4. Item Analysis Results for the Ethical Empowerment Subscale

The Ethical Empowerment items show no extreme high or low means (See Table 4.4). This is not consistent with the other dimensions, in that means are generally relatively higher. A possible explanation could be that Empowerment is a less sensitive concept compared to Morality and Compassion. Thus, respondents may feel more comfortable giving lower ratings for Empowerment than rating their leaders low on Compassion or Morality (giving low ratings for these dimensions are less socially desirable).

None of the items showed standard deviations that were small enough to set them apart from the rest of the items. This indicates that all the items for the current subscale are sufficiently sensitive. The Inter-Item Correlation Matrix generally shows positive, high correlations that exceeded .30 (Pallant, 2010). However, item 56 shows lower correlations with the other items in this dimension.

The Cronbach Alpha for the Ethical Empowerment subscale is .958, which is satisfactory as it exceeds the critical cut-off level of .70 (Kerlinger & Lee, 2000). Regarding the Item-Total Statistics, item 56 is an outlier regarding the Corrected Item-Total Correlation and Squared Multiple Correlation. However, deleting item 56 will make no difference regarding internal consistency.   Considering this, no items were deleted from this subscale.

Table 4.4.

Reliability Analysis Results for the Ethical Empowerment Subscale

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardised Items	N of Items
.958	.958	9

Item Statistics			
	Mean	Std. Deviation	N
Q48	4.11	1.559	202
Q49	3.83	1.609	202
Q50	3.86	1.600	202
Q51	3.82	1.567	202
Q52	3.95	1.497	202
Q53	4.29	1.608	202
Q54	4.60	1.487	202
Q55	4.25	1.509	202
Q56	4.66	1.356	202

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
Q48	33.26	112.132	.862	.786	.952
Q49	33.54	110.628	.881	.847	.951
Q50	33.51	111.485	.857	.815	.952
Q51	33.55	111.970	.862	.830	.952
Q52	33.43	115.619	.782	.645	.956
Q53	33.08	111.795	.842	.742	.953
Q54	32.77	115.324	.798	.715	.955
Q55	33.12	113.522	.847	.751	.952
Q56	32.71	119.857	.718	.580	.958

Inter-Item Correlation Matrix									
	Q48	Q49	Q50	Q51	Q52	Q53	Q54	Q55	Q56
Q48	1.000	.833	.826	.811	.659	.753	.713	.745	.600
Q49	.833	1.000	.864	.878	.711	.756	.656	.735	.621
Q50	.826	.864	1.000	.861	.709	.705	.662	.701	.583
Q51	.811	.878	.861	1.000	.734	.698	.646	.715	.596
Q52	.659	.711	.709	.734	1.000	.709	.643	.715	.569
Q53	.753	.756	.705	.698	.709	1.000	.762	.772	.690
Q54	.713	.656	.662	.646	.643	.762	1.000	.789	.703
Q55	.745	.735	.701	.715	.715	.772	.789	1.000	.701
Q56	.600	.621	.583	.596	.569	.690	.703	.701	1.000

Summary Item Statistics							
	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	4.152	3.822	4.658	.837	1.219	.104	9
Item Variances	2.354	1.838	2.588	.750	1.408	.059	9
Inter-Item Correlations	.717	.569	.878	.309	1.542	.006	9

4.3.5. Item Analysis Results for the Managing Ethics Subscale

The Managing Ethics items show lower means when compared to the Morality and Compassion subscales (the items were rated on a 6-point scale) (See Table 4.5.). None of the items showed standard deviations that were small enough to set them apart from the rest of the items. This indicates that all the items for the current subscale are sufficiently sensitive. The Inter-Item Correlation Matrix generally shows positive, high correlations that exceeded .30 (Pallant, 2010). It is noted that item 67 showed lower correlations compared to other items. The inter-item correlation mean of .692 is higher than the correlations for item 67. This indicates that the correlations for item 67 are generally lower than the mean correlations for the other items.

The Cronbach Alpha for the Managing Ethics subscale is .974, which is satisfactory as it exceeds the critical cut-off value of .70 (Kerlinger & Lee, 2000). The Item-Total Statistics of item 67 is an outlier regarding the Corrected Item-Total Correlation and the Squared Multiple Correlation. However, deleting this item will not result in any improvement of the internal consistency. Considering this, no items were deleted from this dimension.

Table 4.5.

Reliability Analysis Results for the Managing Ethics Subscale

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardised Items	N of Items
.974	.974	17

Item Statistics			
	Mean	Std. Deviation	N
Q57	4.52	1.568	202
Q58	4.45	1.561	202
Q59	4.24	1.626	202
Q60	4.62	1.532	202
Q61	5.10	1.215	202
Q62	4.54	1.411	202
Q63	4.74	1.336	202
Q64	4.54	1.446	202
Q65	4.35	1.506	202
Q66	4.23	1.541	202
Q67	4.05	1.686	202
Q68	4.27	1.476	202
Q69	4.12	1.660	202
Q70	4.26	1.527	202
Q71	4.53	1.436	202
Q72	4.54	1.565	202
Q73	4.20	1.561	202

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Q57	70.80	409.506	.881	.854	.972
Q58	70.87	411.649	.850	.785	.972
Q59	71.07	406.855	.891	.852	.972
Q60	70.70	411.117	.877	.840	.972
Q61	70.21	428.238	.760	.667	.973
Q62	70.78	415.189	.882	.841	.972
Q63	70.57	427.082	.707	.631	.974
Q64	70.77	416.097	.843	.801	.972
Q65	70.97	415.765	.812	.773	.973
Q66	71.09	412.181	.853	.784	.972
Q67	71.27	417.610	.689	.621	.974
Q68	71.04	416.650	.815	.755	.973
Q69	71.19	411.759	.793	.707	.973
Q70	71.06	418.166	.759	.654	.973
Q71	70.79	417.870	.818	.731	.973
Q72	70.77	408.246	.905	.885	.971
Q73	71.12	413.737	.815	.767	.973

Item-Total Statistics

Inter-Item Correlation Matrix

	Q57	Q58	Q59	Q60	Q61	Q62	Q63	Q64	Q65	Q66	Q67	Q68	Q69	Q70	Q71	Q72	Q73
Q57	1.000	.794	.793	.843	.702	.806	.606	.818	.708	.741	.607	.682	.719	.673	.728	.900	.720
Q58	.794	1.000	.819	.765	.660	.774	.600	.757	.785	.743	.581	.659	.656	.619	.665	.781	.775
Q59	.793	.819	1.000	.853	.677	.856	.638	.782	.735	.804	.635	.712	.691	.672	.701	.830	.755
Q60	.843	.765	.853	1.000	.700	.837	.650	.827	.692	.724	.603	.667	.692	.682	.701	.859	.691
Q61	.702	.660	.677	.700	1.000	.753	.688	.659	.621	.646	.452	.625	.573	.578	.681	.716	.597
Q62	.806	.774	.856	.837	.753	1.000	.697	.814	.723	.748	.570	.701	.647	.646	.745	.822	.742
Q63	.606	.600	.638	.650	.688	.697	1.000	.691	.607	.594	.428	.593	.524	.569	.632	.605	.552
Q64	.818	.757	.782	.827	.659	.814	.691	1.000	.677	.685	.583	.683	.668	.594	.659	.810	.659
Q65	.708	.785	.735	.692	.621	.723	.607	.677	1.000	.737	.504	.639	.719	.586	.691	.708	.825
Q66	.741	.743	.804	.724	.646	.748	.594	.685	.737	1.000	.650	.793	.722	.692	.694	.740	.744
Q67	.607	.581	.635	.603	.452	.570	.428	.583	.504	.650	1.000	.720	.595	.685	.558	.648	.525
Q68	.682	.659	.712	.667	.625	.701	.593	.683	.639	.793	.720	1.000	.705	.706	.704	.724	.661
Q69	.719	.656	.691	.692	.573	.647	.524	.668	.719	.722	.595	.705	1.000	.612	.732	.755	.685
Q70	.673	.619	.672	.682	.578	.646	.569	.594	.586	.692	.685	.706	.612	1.000	.657	.703	.596
Q71	.728	.665	.701	.701	.681	.745	.632	.659	.691	.694	.558	.704	.732	.657	1.000	.783	.710
Q72	.900	.781	.830	.859	.716	.822	.605	.810	.708	.740	.648	.724	.755	.703	.783	1.000	.744
Q73	.720	.775	.755	.691	.597	.742	.552	.659	.825	.744	.525	.661	.685	.596	.710	.744	1.000

Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	4.430	4.050	5.104	1.054	1.260	.067	17
Item Variances	2.290	1.477	2.843	1.367	1.925	.117	17
Inter-Item Correlations	.692	.428	.900	.472	2.104	.007	17

4.3.6. Summary of Item Analysis Results

The purpose of the item analysis was to evaluate whether the items successfully represent the proposed dimensions of ethical leadership. The design intention of the questionnaire was that the dimensions of ethical leadership would essentially function as one-dimensional constructs.   Similarly, the items were meant to function as homogenous stimulus sets — ideally, the items needed to evoke responses that would be relatively uncontaminated expressions of observed ethical leadership.   In examining the quality of these items, item statistics were calculated per dimension. These statistics included the item-total correlations, squared multiple correlations, inter-item correlations and Cronbach alpha coefficients. In evaluating the items, these statistics should be moderately high, and the Cronbach alpha coefficient should exceed .70. However, even if the item statistics meet these expectations, it does not necessarily mean that each subscale is a unidimensional latent variable. Neither does it imply that the target latent variable is measured. These questions will be addressed in later sections.

Although there were items that were possibly deemed problematic, there was not enough evidence to support deletion (these were items 12, 16, 41 and 56). Therefore, no items were deleted from the ELBS.   Interestingly, the items measuring each dimension seemed to show a trend regarding higher means. However, this was not true for the Ethical Empowerment dimension.   In trying to explain this trend, the most likely explanation could be the sensitive nature of the construct of Ethical Leadership. Although the current scale does not detect unethical behaviour or corruption, it is possible that respondents are reluctant to rate their leaders poorly on a scale that assesses ethical behaviour and moral character. This notion is supported by the lower means for Ethical Empowerment, as a respondent may feel safer to rate a leader low on empowerment but may feel obliged to give higher ratings on Morality, as it is not socially acceptable to say that a leader has poor moral values.

This trend may influence the way individuals respond to the items. Therefore, future research on the ELBS may need to consider the potential for social desirability when measuring ethical leadership.

4.4. DIMENSIONALITY ANALYSIS (EFA)

The ELBS was designed so that unidimensional sets of items would reflect variance in five latent dimensions of ethical leadership. Each indicator variable would allow the respondent to rate their leader on each underlying element of ethical leader behaviour. Each first-order ethical leadership dimension is assumed to be unidimensional since it is supposed to represent a single underlying element of ethical leader behaviour. To evaluate this assumption of unidimensionality, principal axis factoring analyses with oblique rotation was performed on each of the five subscales.   This method establishes whether individual and groups of items successfully measure the dimension to which they are associated.   In this method, the extraction of a single factor and high factor loadings on that factor should ensure the accurate reproduction of the observed inter-item correlation matrix.   However, this outcome would not necessarily mean that the dimension was successfully measured according to the design intent. The extraction of the single factor with high factor loadings will mean that the hypothesis that the items in their specific dimensions all successfully measure the latent ethical leadership dimension has survived the opportunity to be falsified.

It is important to note that unidimensionality of dimensions should not be interpreted that the five ethical leadership dimensions are narrow, specific constructs. Each dimension represents a broad element of ethical leadership, represented by a range of ethical leader behaviours. Nonetheless, it is expected that each of these items that make up the five dimensions should load (even if only moderately due to the broad nature of the dimensions) on a single factor.

Should more than one factor be extracted, the response would be to examine the meaningfulness of factor fission. Factor fission refers to the situation where a single expected factor essentially splits into two or more factors. The meaningfulness of factor fission should be considered in such situations – the researcher should consider whether the possible sub-dimension that has emerged makes conceptual sense. Factor analysis for dimensionality analysis is not without its risk. Spangenberg and Theron (2005) note that factor analysis on a correlation covariance matrix may not be the most effective procedure for determining the dimensionality of a subscale, as there is a risk that extracting artefact factors will only reflect differences in item difficulty value, kurtosis or variance. Therefore, one needs to calculate the descriptive statistics

for the items of each subscale to determine the possibility of multiple factors appearing as an artefact of differential item characteristics (e.g. skewness). As a result, descriptive statistics were calculated for the items in dimensions that failed the assumption of unidimensionality.

The Statistical Package for the Social Sciences (SPSS) 25.0, was used to perform an exploratory factor analysis (EFA) on each of the five dimensions of the ELBS. Table 4.6 summarises the overall findings of the factor analyses.

Table 4.6.

Summary of Exploratory Factor Analyses (EFA) Results

Subscale	KMO	Bartlett X^2	% Variance Explained	No of Factors Extracted
Morality				
Compassion	.947	2797.674*	69.991	1
Ethical Envisioning	.972	4363.994*	75.584	1
Ethical	.969	4036.153*	71.139	1
Empowerment	.942	1891.641*	72.021	1
Managing Ethics	.963	3894.470*	69.572	1

*$p < 0.001$

The following discussion gives an overview of the factor analysis process, as well as a detailed description of the results for each dimension.

4.4.1. Evaluating Factor Analysability

In evaluating whether the inter-item correlation matrix is factor analysable, the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test were used. The KMO measure of sampling adequacy is an index that represents the ratio of the sum of the squared inter-item correlations and the squared inter-item correlations, plus the sum of the squared partial inter-item correlation coefficients (Sricharoen & Buchenrieder, 2005). The measure varies between 0 and 1, where values of 1 are more desirable. A value of 1 will result when items reflect one or more common underlying factors so that when these factors are statistically controlled, the partial correlations between items will approach zero. The correlation matrix is considered factor analysable when KMO

approaches unity (or at least > 0.60). In the case of the ELBS, KMO values range between 0.942 and 0.972 (See Table 4.6). As a result, the correlation matrices are factor-analysable.

In testing the null hypothesis stating that the inter-item correlation matrix is an identity matrix, the Bartlett test for sphericity was used. The null hypothesis could be rejected for all the five subscales of the ELBS ($p < 0.001$). This supports the notion that the correlation matrices are factor analysable. The observed inter-item correlation matrix contains various sizable ($r_{ij} > .30$) and significant ($p < .05$) correlations for all five subscales. This also supports the factor analysability of the subscale correlation matrices.

Altogether, the result of the KMO and Bartlett's test implies that factor analysis on all the five inter-item correlation matrices would be meaningful.

4.4.2. Factor Extraction Method

Consequently, each of the five ELBS subscales was factor-analysed using principal axis factor analysis. Several extraction methods have been developed to extract factors from an inter-item correlation matrix. These include (yet are not limited to) unweighted least squares, generalised least squares, maximum likelihood, principal axis factoring, principal component analysis, and image factoring which are all compatible with SPSS software.

In factor extraction, the researcher needs to decide between principal component analysis and factor analysis. Factor analysis seeks the least number of factors that account for the common variance shared by observed variables. This is well-suited to the goal of dimensionality analysis, that aims to evaluate the assumption that a single underlying ethical leadership factor can account for the variance shared by the items in a specific ethical leadership subscale. Contrarily is principal component analysis. This method aims to extract factors that account for total (unique and common) variance in a group of items. Therefore, this method does not differentiate between common and unique variance (Fabrigar, Wegener, MacCallum, & Strahan, 1999). In

comparison, the factor extraction method was deemed to be the most appropriate for this study.

4.4.3. Decision on The Number of Factors to Extract

Another important consideration is the criteria that will be used to decide the number of factors that are to be extracted for each subscale. For this study, as guided by theory, the eigenvalue-greater-than-one criterion (Kaiser, 1960) and the scree test (Cattell, 1966) were used to determine the number of factors to extract.

4.4.3.1. Eigenvalue-Greater-Than-One Criterion

Also known as the Kaiser criterion (Kaiser, 1960), the Eigenvalue or latent root is the amount of variance accounted for by the factor, of the sum of the squared factor loadings of the observed variables in a column, or in simpler terms, the sum of the variances for each variable (Hardy & Bryman, 2009). To determine the number of factors to extract, eigenvalues are computed for the correlation matrix. Eigenvalues greater than 1.00 are retained; however, Taylor (2005) cautions that factors can fall close to this value on either side of the 1.00 cut-off value.

An example of this would be a factor with an eigenvalue of 1.01 that would be retained, but a value of .99 would be rejected. In this example, the difference between these two factors are insignificant, which implies that both would account for almost the same amount of variance but .99 would still be rejected. A way to overcome this shortcoming would be to extract both more and fewer factors than the number of factors suggested by the eigenvalue-greater-than-one rule to assess whether these factors are meaningful when rotated (Hardy & Bryman, 2004).

4.4.3.2. Scree Test

The scree test is the graph of the eigenvalues of the extracted factors plotted against the number of factors extracted. In this, one should look for a 'break' between the factors with large eigenvalues and factors with relatively small eigenvalues (Cattell, 1966). In this context, scree refers to the factors that could be ignored after a substantial drop in eigenvalues. In interpreting the scree test, all the factors that are to the left of the break or elbow, are interpreted as essential and therefore extracted.

However, this method is not without its limitations. Subjectivity or ambiguity may occur (Cattell, 1966), especially in cases with smaller sample sizes and no clear breaks are visible on the scree plot.

4.4.4. Rotation of Extracted Factors

According to Powell and Peng (1989), rotation is the process of re-ordering factors so that they are more interpretable. Researchers have two categories of rotation to consider: orthogonal rotation (i.e. varimax, quartimax and aquamax), or oblique rotation (i.e. direct oblimin, quartimin and promax) (Costello & Osborne, 2005; Tabachnick & Fidell, 2001).

Considering the expectation of the study – that exploratory factor analysis would result in the extraction of one factor per subscale – the rotation of the extracted factor would not be meaningful. Even in the case of factor fission, the extracted factors will most likely be correlated. Therefore, an oblique rotation method was chosen to assist in interpreting and reporting, should factor fission take place.

4.4.5. Dimensionality of the Individual ELBS Scales

As mentioned earlier, principal axis factor analysis with oblique rotation was used to determine unidimensionality for each ELBS subscale.   The eigenvalue-greater-than-one rule, as well as the scree plot test was used to determine the number of factors to be extracted.

The Kaiser-Mayer-Olkin Measure of Sampling adequacy should exceed .60 (Pallant, 2010). The eigenvalue of only one factor should be greater than 1.0 where the total variance is indicated through principal axis factoring (DeVillis, 2003). Additionality, the eigenvalues of the factor matrix should be equal to 1.0 where the proportion of variance (λii^2) explained by the single factor should be .50 or higher (Theron, 2015). The factor loadings of the oblimin rotation found on the correlation matrix should also be greater than .40 (Theron, 2015). The scree plot should clearly show only one factor to the left of the elbow (DeVellis, 2013).

The following section summarises the results obtained for each subscale according to the guideline above.

4.4.5.1. Dimensionality analysis for the Morality Subscale.

It was expected that all the items of the subscale Morality should load on a single factor of Ethical Leadership behaviour. This assumption has been met. The discussion below elaborates.

The Kaiser-Mayer-Olkin Measure of Sampling Adequacy was .947, which exceeds the guideline of .60 (See Table 4.7). Bartlett's test of sphericity was significant ($p < 0.001$). This suggests that the subscale is indeed factor-analysable. One factor was extracted which had an eigenvalue greater than 1, with a value of 9.386. The proportion of variance that was explained by this single factor was 69.991%, which was greater than the minimum guideline of .50. The factor loadings of the unrotated matrix were all substantial (> .40), ranging from .67 to .909. The scree plot shows a single underlying factor to the left of the elbow.

Table 4.7

Dimensionality Analysis Results for the Morality Subscale

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.947
Bartlett's Test of Sphericity	Approx. Chi-Square	2797.674
	df	78
	Sig.	.000

Total Variance Explained						
	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.386	72.202	72.202	9.099	69.991	69.991
2	.804	6.184	78.386			
3	.529	4.066	82.452			
4	.412	3.169	85.621			
5	.362	2.788	88.409			
6	.293	2.251	90.660			
7	.245	1.882	92.542			
8	.207	1.595	94.137			
9	.195	1.500	95.637			

10	.183	1.407	97.044
11	.152	1.166	98.210
12	.138	1.062	99.271
13	.095	.729	100.000

Extraction Method: Principal Axis Factoring.

Scree Plot
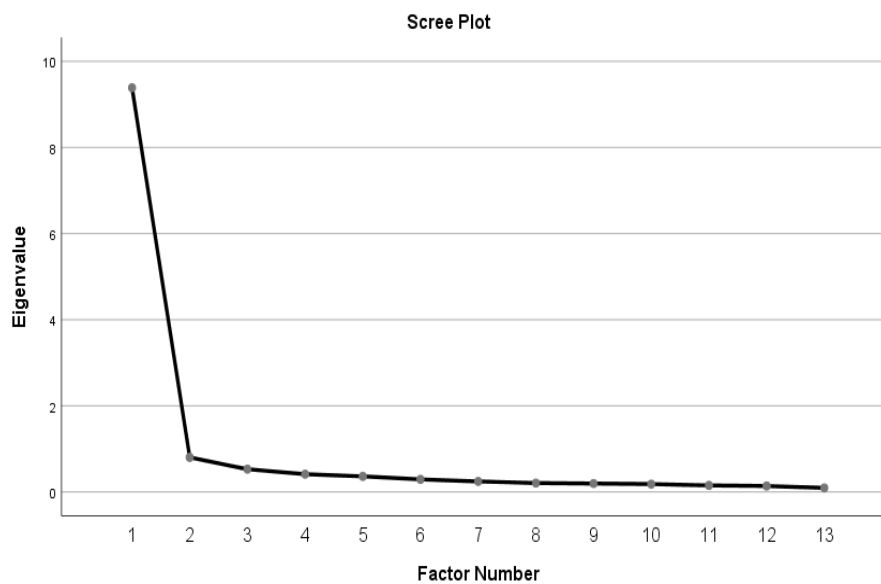
Factor Matrix[a]

	Factor
	1
Q13	.909
Q9	.901
Q5	.886
Q1	.872
Q10	.871
Q3	.857
Q2	.855
Q4	.822
Q7	.814
Q6	.803
Q11	.797
Q8	.790
Q12	.670

Extraction Method:
Principal Axis
Factoring.

a. 1 factors extracted. 4
iterations required.

4.4.5.2. Dimensionality analysis for the Compassion Subscale.

Following the guidelines as set out at the beginning of this section, the subscale of Compassion shows unidimensionality due to the extraction of a single underlying factor. The discussion below elaborates.

The Kaiser-Mayer-Olkin Measure of Sampling Adequacy was .972, which exceeds the guideline of .60 (See Table 4.8). Bartlett's test of sphericity was significant ($p<.001$). This confirms that the Compassion subscale is factor analysable. One factor was extracted which had an eigenvalue greater than 1, with a value of 13.085. The proportion of variance that was explained by this single factor was 75.58% which was greater than the minimum guideline of .50. The factor loadings of the unrotated matrix were all significant ($> .40$), ranging from .75 to .93. The scree plot shows a single underlying factor to the left of the elbow.

Table 4.8

Dimensionality Analysis Results for the Compassion Subscale

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.972
Bartlett's Test of Sphericity	Approx. Chi-Square	4363.994
	df	136
	Sig.	.000

Total Variance Explained						
	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	13.085	76.972	76.972	12.849	75.584	75.584
2	.588	3.456	80.429			
3	.444	2.612	83.041			
4	.410	2.410	85.450			
5	.351	2.065	87.515			
6	.285	1.677	89.192			
7	.269	1.582	90.774			
8	.241	1.415	92.190			
9	.230	1.351	93.541			
10	.209	1.229	94.770			
11	.190	1.116	95.886			
12	.160	.942	96.828			
13	.136	.802	97.630			
14	.116	.682	98.312			
15	.108	.634	98.946			
16	.094	.552	99.498			
17	.085	.502	100.000			

Extraction Method: Principal Axis Factoring.

Scree Plot
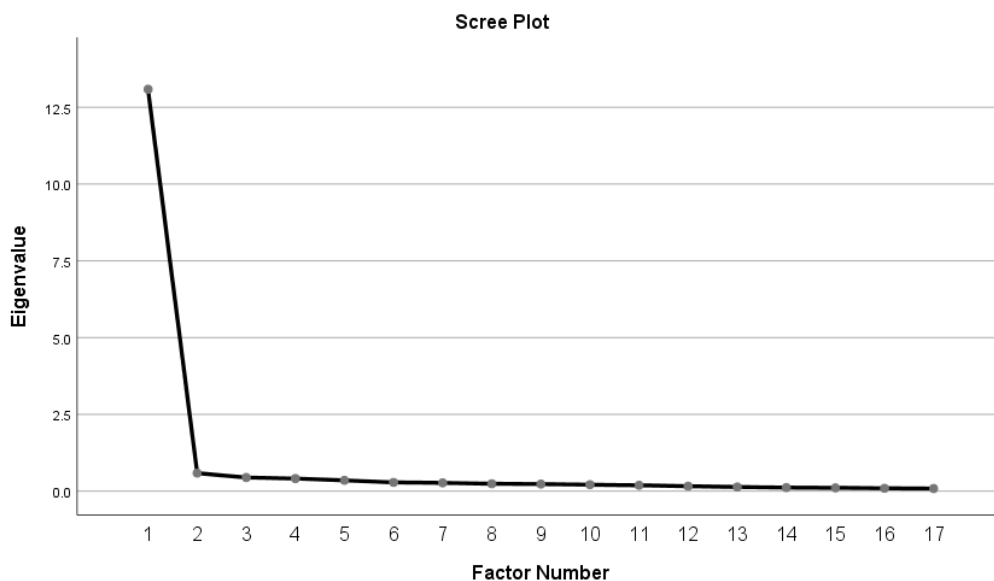
Factor Matrixᵃ	
	Factor
	1
Q25	.932
Q21	.924
Q28	.916
Q20	.912
Q17	.904
Q27	.899
Q22	.893
Q30	.884
Q23	.861
Q26	.859
Q18	.858
Q29	.857
Q19	.851
Q15	.841
Q14	.829
Q24	.784
Q16	.753

Extraction Method:
Principal Axis Factoring.
a. 1 factors extracted. 3
iterations required.

4.4.5.3. Dimensionality analysis for the Ethical Envisioning Subscale

The Ethical Envisioning subscale showed unidimensionality according to the guidelines set out at the beginning of this section. This means that a single underlying factor was extracted. See discussion below.

The Kaiser-Mayer-Olkin Measure of Sampling Adequacy was .969, which exceeds the guideline of .60 (See Table 4.9). Bartlett's test of sphericity was significant (p<.001).

This confirms that the Ethical Envisioning subscale is factor analysable. One factor was extracted which had an eigenvalue greater than 1, with a value of 12.365. The proportion of variance that was explained by this single factor was 71.139%, which was greater than the minimum guideline of .50. The factor loadings of the unrotated matrix were all significant (> .40), ranging from .645 to .946. The scree plot shows a single underlying factor to the left of the elbow.

Table 4.9

Dimensionality Analysis Results for the Ethical Envisioning Subscale

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.969
Bartlett's Test of Sphericity	Approx. Chi-Square	4036.153
	df	136
	Sig.	.000

Total Variance Explained						
	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	12.365	72.734	72.734	12.094	71.139	71.139
2	.797	4.689	77.423			
3	.667	3.923	81.346			
4	.460	2.706	84.051			
5	.388	2.281	86.333			
6	.365	2.147	88.480			
7	.330	1.941	90.421			
8	.283	1.665	92.086			
9	.229	1.348	93.435			
10	.190	1.118	94.553			
11	.173	1.015	95.568			
12	.164	.967	96.535			
13	.150	.882	97.417			
14	.147	.867	98.284			
15	.113	.662	98.946			
16	.100	.591	99.537			
17	.079	.463	100.000			

Extraction Method: Principal Axis Factoring.

Scree Plot
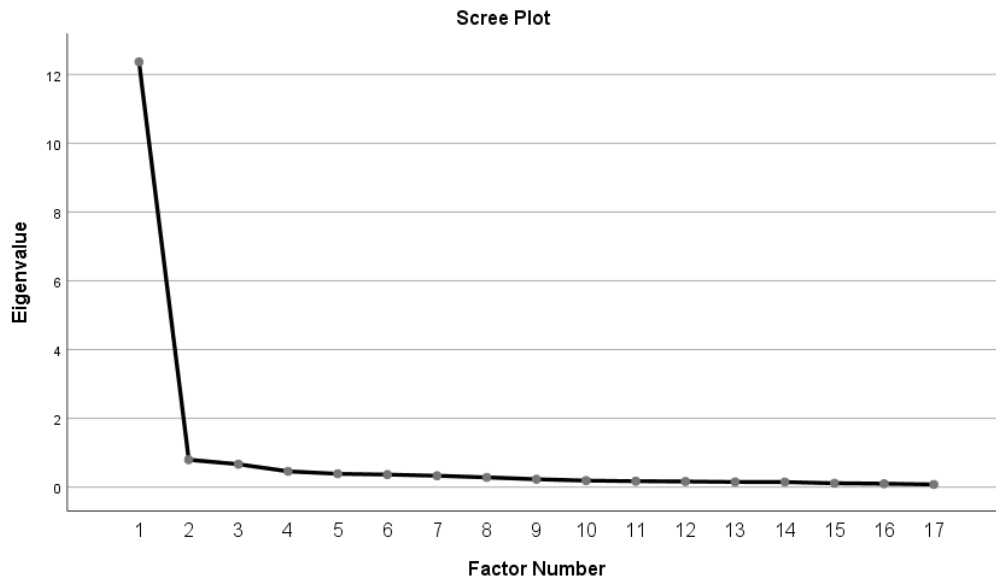
Factor Matrix[a]	
	Factor
	1
Q46	.946
Q47	.922
Q38	.913
Q45	.895
Q33	.894
Q35	.891
Q36	.872
Q31	.851
Q32	.837
Q43	.827
Q34	.824
Q44	.822
Q39	.812
Q42	.807
Q37	.774
Q40	.757
Q41	.645

Extraction Method:
Principal Axis Factoring.

a. 1 factors extracted. 3
iterations required.

4.4.5.4. Dimensionality analysis for the Ethical Empowerment Subscale.

The Ethical Empowerment subscale showed unidimensionality according to the guidelines set out at the beginning of this section. This means that a single underlying factor was extracted. See discussion below.

The Kaiser-Mayer-Olkin Measure of Sampling Adequacy was .942 which exceeds the guideline of .60 (See Table 4.10). Bartlett's test of sphericity was significant (p<.001). This confirms that the Ethical Empowerment subscale is factor analysable. One factor was extracted which had an eigenvalue greater than 1, with a value of 6.753. The proportion of variance that was explained by this single factor was 72.021%, which was greater than the minimum guideline of .50. The factor loadings of the unrotated matrix were all significant (> .40), ranging from .73 to .90. The scree plot shows a single underlying factor to the left of the elbow.

Table 4.10

Dimensionality Analysis Results for the Ethical Empowerment Subscale

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.942
Bartlett's Test of Sphericity	Approx. Chi-Square	1891.641
	df	36
	Sig.	.000

Total Variance Explained						
	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.753	75.032	75.032	6.482	72.021	72.021
2	.684	7.604	82.636			
3	.383	4.258	86.894			
4	.328	3.646	90.540			
5	.242	2.689	93.228			
6	.204	2.268	95.497			
7	.161	1.787	97.284			
8	.136	1.510	98.793			
9	.109	1.207	100.000			

Extraction Method: Principal Axis Factoring.

Scree Plot
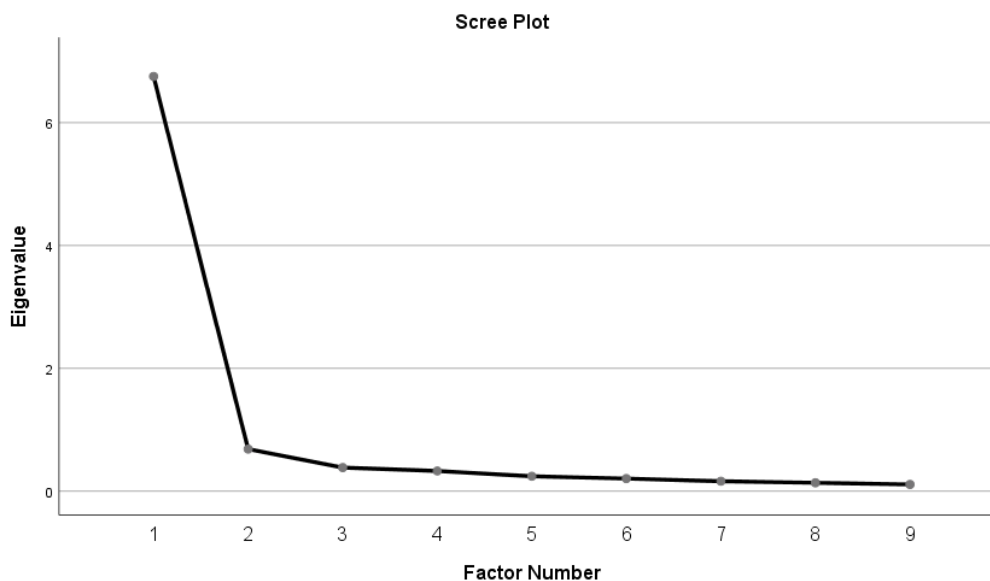
Factor Matrix[a]	
	Factor
	1
Q49	.903
Q51	.884
Q48	.883
Q50	.879
Q55	.866
Q53	.862
Q54	.816
Q52	.799
Q56	.733

Extraction Method:
Principal Axis Factoring.

a. 1 factors extracted. 4
iterations required.

4.4.5.5. Dimensionality analysis for the Managing Ethics Subscale.

The subscale Managing Ethics was analysed. The results suggested that the Managing Ethics subscale showed the extraction of a single factor, which indicates unidimensionality. The results that lead to this conclusion is discussed below.

The Kaiser-Mayer-Olkin Measure of Sampling Adequacy was .963, which exceeds the guideline of .60 (See Table 4.11).   Bartlett's test of sphericity was significant ($p <$ .001). This confirms that the Managing Ethics subscale is factor analysable. One

factor was extracted which had an eigenvalue greater than 1, with a value of 12.117. The proportion of variance that was explained by this single factor was 69.57%, which was greater than the minimum guideline of .50. The factor loadings of the unrotated matrix were all significant (> .40), ranging from .695 to .918. The scree plot shows a single underlying factor to the left of the elbow.

Table 4.11

Dimensionality Analysis Results for the Managing Ethics Subscale

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.963
Bartlett's Test of Sphericity	Approx. Chi-Square	3894.470
	df	136
	Sig.	.000

Total Variance Explained						
	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	12.117	71.277	71.277	11.827	69.572	69.572
2	.833	4.903	76.180			
3	.659	3.875	80.055			
4	.557	3.274	83.328			
5	.439	2.580	85.908			
6	.361	2.121	88.029			
7	.328	1.931	89.960			
8	.269	1.583	91.543			
9	.264	1.552	93.095			
10	.219	1.291	94.386			
11	.189	1.110	95.496			
12	.171	1.004	96.500			
13	.156	.918	97.418			
14	.135	.794	98.212			
15	.122	.716	98.928			
16	.104	.610	99.538			
17	.079	.462	100.000			
Extraction Method: Principal Axis Factoring.						

Scree Plot
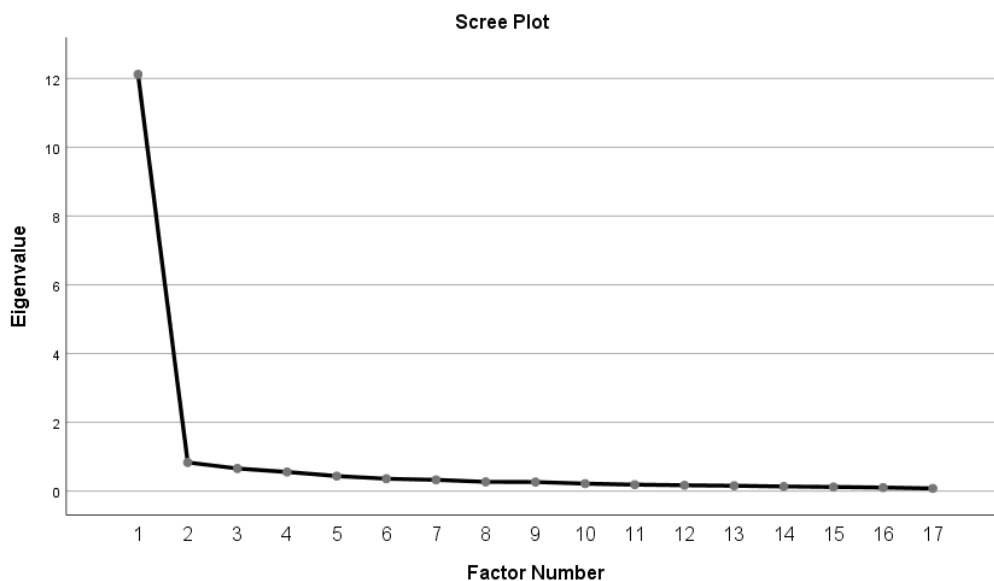
Factor Matrix[a]	
	Factor
	1
Q72	.918
Q59	.904
Q62	.898
Q57	.895
Q60	.891
Q58	.862
Q66	.861
Q64	.857
Q71	.828
Q73	.826
Q65	.823
Q68	.820
Q69	.801
Q61	.773
Q70	.765
Q63	.721
Q67	.695

Extraction Method:
Principal Axis Factoring.
a. 1 factors extracted. 3
iterations required.

4.4.6. Summary of Dimensionality Analyses Results

The ELBS consists of five latent variables designed to reflect one-dimensional groups of items that measure ethical leadership behaviour. The results from the dimensionality analysis prove that the items for each subscale of ethical leadership reflect a single underlying factor.

4.5. CONFIRMATORY FACTOR ANALYSIS (CFA)

Confirmatory Factor Analysis (CFA) was conducted on the 73-item multidimensional ethical leadership scale. This was done to investigate the extent to which the ELBS's operational design has succeeded in delivering a valid measure of ethical leadership. Moreover, the degree to which the ethical leadership model is analysed to determine whether it is consistent with the empirically analysed data.

Before conducting any analyses on the fit of the ethical leadership measurement model, it is necessary to assess several critical assumptions. The assumption of multivariate normality should be assessed. This is done in the following section, following a detailed discussion on the evaluation of the ELBS measurement model fit.

4.5.1. Variable Type

The ELBS was developed by writing items designated to reflect each of the five latent ethical leadership dimensions. Following the discussion of the variable type in Chapter 3 (section 3.9.3.1.), the ELBS model was fitted with individual items and not item parcels. The items were interpreted as continuous variables.

4.5.2. Tests of Univariate and Multivariate Normality

Maximum likelihood estimation is the default procedure used to estimate model parameters when fitting a measurement model for continuous data. This method of estimation assumes that the data follow a multivariate normal distribution. Table 4.12 shows the results of the test of univariate normality before normalisation.

Table 4.12

Test of Univariate Normality Before Normalisation

Test of Univariate Normality for Continuous Variables					
Variable	Skewness		Kurtosis		Skewness & Kurtosis	
	Z-Score	P-Value	Z-Score	P-Value	Chi-Square	P-Value
Q1	-5.828	0.000	2.195	0.028	38.782	0.000
Q2	-6.157	0.000	2.855	0.004	46.058	0.000
Q3	-6.462	0.000	2.800	0.005	49.595	0.000
Q4	-7.016	0.000	4.067	0.000	65.762	0.000
Q5	-6.538	0.000	2.851	0.004	50.870	0.000

Q6	-5.668	0.000	2.119	0.034	36.613	0.000
Q7	-5.301	0.000	1.249	0.212	29.659	0.000
Q8	-4.468	0.000	-0.808	0.419	20.611	0.000
Q9	-5.789	0.000	1.935	0.053	37.257	0.000
Q10	-5.408	0.000	0.490	0.624	29.484	0.000
Q11	-4.294	0.000	-0.033	0.974	18.441	0.000
Q12	-5.516	0.000	1.584	0.113	32.941	0.000
Q13	-5.568	0.000	1.218	0.223	32.489	0.000
Q14	-4.940	0.000	-0.211	0.833	24.451	0.000
Q15	-6.340	0.000	3.020	0.003	49.317	0.000
Q16	-3.860	0.000	-2.629	0.009	21.811	0.000
Q17	-4.370	0.000	-0.275	0.783	19.169	0.000
Q18	-4.412	0.000	-0.671	0.502	19.913	0.000
Q19	-4.526	0.000	-0.164	0.870	20.509	0.000
Q20	-3.809	0.000	-0.678	0.497	14.969	0.001
Q21	-4.893	0.000	0.882	0.378	24.720	0.000
Q22	-4.730	0.000	0.253	0.800	22.440	0.000
Q23	-6.272	0.000	2.437	0.015	45.271	0.000
Q24	-4.509	0.000	0.170	0.865	20.361	0.000
Q25	-5.293	0.000	1.265	0.206	29.614	0.000
Q26	-5.845	0.000	1.765	0.078	37.277	0.000
Q27	-4.951	0.000	0.869	0.385	25.263	0.000
Q28	-5.823	0.000	1.722	0.085	36.876	0.000
Q29	-4.746	0.000	0.328	0.743	22.632	0.000
Q30	-4.967	0.000	0.223	0.824	24.721	0.000
Q31	-5.557	0.000	1.321	0.186	32.630	0.000
Q32	-3.970	0.000	-2.205	0.027	20.628	0.000
Q33	-5.107	0.000	0.211	0.833	26.124	0.000
Q34	-5.572	0.000	1.289	0.198	32.711	0.000
Q35	-3.949	0.000	-1.862	0.063	19.061	0.000
Q36	-4.606	0.000	-0.645	0.519	21.630	0.000
Q37	-6.252	0.000	1.953	0.051	42.903	0.000
Q38	-5.105	0.000	0.122	0.903	26.078	0.000
Q39	-5.951	0.000	2.243	0.025	40.445	0.000
Q40	-4.408	0.000	0.097	0.923	19.440	0.000
Q41	-4.086	0.000	-1.038	0.299	17.772	0.000
Q42	-4.097	0.000	-1.142	0.254	18.085	0.000
Q43	-5.726	0.000	1.516	0.129	35.082	0.000
Q44	-4.919	0.000	0.260	0.795	24.264	0.000
Q45	-4.744	0.000	-0.072	0.943	22.507	0.000
Q46	-4.870	0.000	0.155	0.877	23.738	0.000
Q47	-4.778	0.000	-0.328	0.743	22.933	0.000
Q48	-3.555	0.000	-2.363	0.018	18.219	0.000
Q49	-2.284	0.022	-6.155	0.000	43.108	0.000
Q50	-2.673	0.008	-4.491	0.000	27.317	0.000
Q51	-2.296	0.022	-4.718	0.000	27.526	0.000

Q52	-3.416	0.001	-2.481	0.013	17.829	0.000
Q53	-4.470	0.000	-1.129	0.259	21.259	0.000
Q54	-5.172	0.000	0.383	0.702	26.896	0.000
Q55	-4.174	0.000	-0.922	0.356	18.273	0.000
Q56	-5.523	0.000	1.627	0.104	33.148	0.000
Q57	-4.836	0.000	-0.660	0.509	23.824	0.000
Q58	-4.343	0.000	-1.327	0.184	20.626	0.000
Q59	-3.879	0.000	-2.942	0.003	23.700	0.000
Q60	-5.249	0.000	0.376	0.707	27.694	0.000
Q61	-6.732	0.000	3.108	0.002	54.984	0.000
Q62	-4.196	0.000	-1.002	0.316	18.612	0.000
Q63	-5.087	0.000	0.680	0.497	26.335	0.000
Q64	-4.702	0.000	-0.235	0.814	22.164	0.000
Q65	-3.953	0.000	-1.484	0.138	17.828	0.000
Q66	-3.585	0.000	-2.272	0.023	18.013	0.000
Q67	-2.637	0.008	-6.098	0.000	44.138	0.000
Q68	-3.658	0.000	-1.593	0.111	15.920	0.000
Q69	-2.844	0.004	-5.672	0.000	40.258	0.000
Q70	-3.394	0.001	-2.417	0.016	17.362	0.000
Q71	-4.281	0.000	-0.805	0.421	18.978	0.000
Q72	-4.843	0.000	-0.596	0.551	23.806	0.000
Q73	-3.428	0.001	-2.365	0.018	17.343	0.000

An inappropriate analysis of continuous non-normal variables could result in incorrect standard errors and chi-square estimates. Therefore, PRELIS was used to evaluate the univariate and multivariate normality of the indicator variables (Jöreskog & Sörbom, 1996).

The null hypothesis of univariate normality had to be rejected ($p < 0.001$) for all the indicator variables. The null hypothesis of multivariate normality also had to be rejected ($p < 0.001$). Table 4.13 shows the results of the test of multivariate normality before normalisation.

Table 4.13

Test of Multivariate Normality Before Normalisation

Test of Multivariate Normality for Continuous Variables Before Normalization								
	Skewness			Kurtosis			Skewness & Kurtosis	
Value	Z-Score	P-Value	Value	Z-Score	P-Value	Chi-Square	P-Value
3075.987	84.455	0.000	6416.868	22.279	0.000	7628.946	0.000

As maximum likelihood estimation assumes a normal distribution of indicator variables, PRELIS was further utilised to normalise the obtained data set. As seen in Table 4.14 the null hypothesis for multivariate normality still had to be rejected for the multivariate indicator variable distribution ($p < 0.001$).

Robust Maximum Likelihood (RML) estimation was used to estimate the freed measurement model parameters. The attempt at normalisation significantly improved the deviation of the observed multivariate distribution from the theoretical multivariate normal distribution, as reflected in the chi-square statistics (Table 4.13 and Table 4.14). Consequently, the normalised data were used to fit the measurement model.

Table 4.14

Test of Multivariate Normality After Normalisation

Test of Multivariate Normality for Continuous Variables After Normalization							
Skewness			Kurtosis			Skewness & Kurtosis	
Value	Z-Score	P-Value	Value	Z-Score	P-Value	Chi-Square	P-Value
2544.854	45.532	0.000	5962.649	16.998	0.000	2362.073	0.000

4.5.3. Introducing a Bi-Factor Measurement Model for Ethical Leadership

As mentioned earlier, a confirmatory factor analysis (CFA) was conducted on the first-order ethical leadership measurement model. As seen in Table 4.15, this model showed only reasonable fit (RMSEA = 0.0617, $p < .05$). Thus, the initial CFA achieved an acceptable RMSEA value, yet the measurement model did not show close fit.

Upon further inspection of the results of the CFA, evidence in the path diagram suggested that the model (See Figure 4.1) indicates various statistically significant ($p<.01$) modification index values associated with the off-diagonal theta-delta matrix. This suggested that the items of the ethical leadership scale also reflect a general source of systematic variance that is currently not acknowledged by the model (Reise, 2012).

Table 4.15
Goodness Of Fit Statistics For The Five-Factor ELBS Model

Goodness of Fit Statistics

Degrees of Freedom = 2545
Minimum Fit Function Chi-Square = 5137.362 (P = 0.0)
Normal Theory Weighted Least Squares Chi-Square = 5589.186 (P = 0.0)
Satorra-Bentler Scaled Chi-Square = 4492.344 (P = 0.0)
Estimated Non-centrality Parameter (NCP) = 1947.344
90 Percent Confidence Interval for NCP = (1764.505; 2137.948)

Minimum Fit Function Value = 25.559
Population Discrepancy Function Value (F0) = 9.688
90 Percent Confidence Interval for F0 = (8.779; 10.637)
Root Mean Square Error of Approximation (RMSEA) = 0.0617
90 Percent Confidence Interval for RMSEA = (0.0587; 0.0646)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.000

Expected Cross-Validation Index (ECVI) = 23.902
90 Percent Confidence Interval for ECVI = (22.993; 24.850)
ECVI for Saturated Model = 26.876
ECVI for Independence Model = 1048.988

Chi-Square for Independence Model with 2628 Degrees of Freedom =
210700.644
Independence AIC = 210846.644
Model AIC = 4804.344
Saturated AIC = 5402.000
Independence CAIC = 211161.147
Model CAIC = 5476.433
Saturated CAIC = 17038.631

Normed Fit Index (NFI) = 0.979
Non-Normed Fit Index (NNFI) = 0.990
Parsimony Normed Fit Index (PNFI) = 0.948
Comparative Fit Index (CFI) = 0.991
Incremental Fit Index (IFI) = 0.991
Relative Fit Index (RFI) = 0.978

Critical N (CN) = 122.428

Root Mean Square Residual (RMR) = 0.0993
Standardised RMR = 0.0498
Goodness of Fit Index (GFI) = 0.568
Adjusted Goodness of Fit Index (AGFI) = 0.541
Parsimony Goodness of Fit Index (PGFI) = 0.535
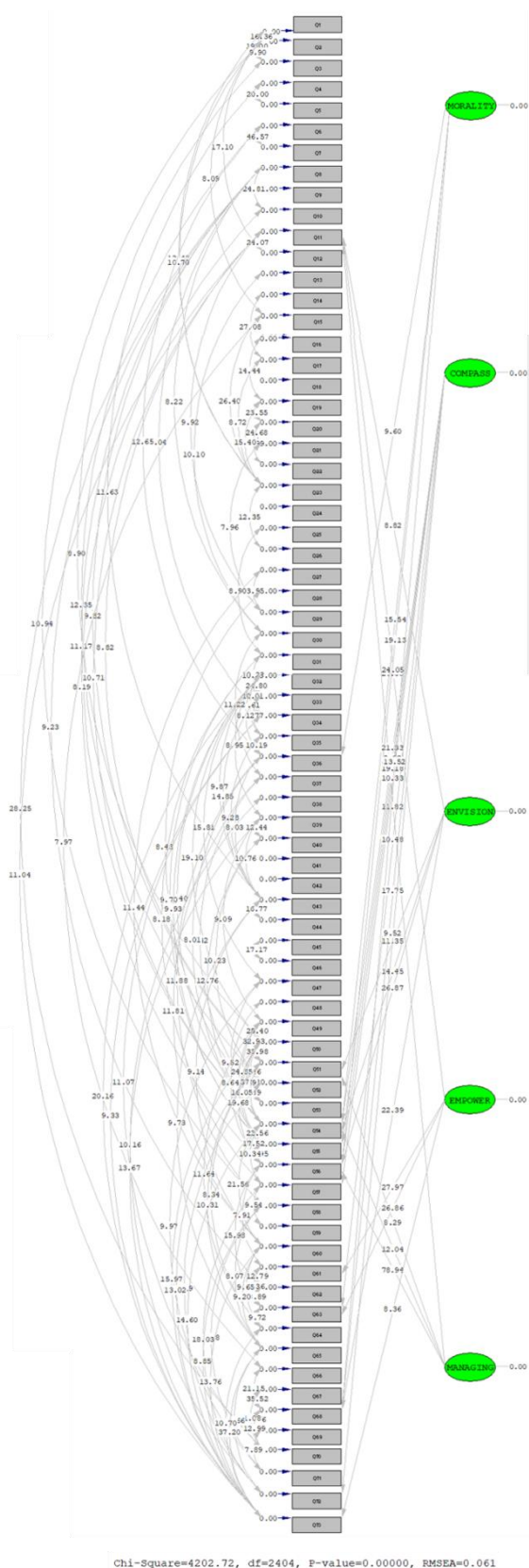
Figure 4.1

Statistically Significant Modification Indices Associated with the Five-Factor Ethical Leadership Measurement Model

In this case, allowing for correlated measurement, error terms would statistically improve the fit of the model. The results of the CFA on the initial measurement model suggest the presence of one or more additional common factors underlying the items of ethical leadership. A bi-factor model of ethical leadership is therefore suggested (Chen, West, & Sousa, 2006; Reise, 2012). In this model, each item would still represent one of the five ethical leadership dimensions, but would also load on a broad, general factor of ethical leadership. This would most probably improve the fit of the measurement model.

Bi-factor models are not new to the scientific community, yet have been gaining popularity recently. Bi-factor models are also known as general-specific models, or nested models and are typically used when (a) there is a broad, general factor (e.g., a broad ethical leadership factor) that is hypothesised to account for the commonality among items; (b) there are multiple domain-specific factors (i.e., the latent ethical leadership dimensions such as morality, compassion, ethical envisioning, ethical empowerment and managing ethics), where each of the factors is hypothesised to account for the unique influence of the specific domain over and above the general factor (e.g., a broad ethical leadership factor); and (c) when researchers are interested in the domain-specific factors (i.e. the latent ethical leadership dimensions) as well as the common factor (e.g. a broad ethical leadership factor) (Chen et al., 2006).

In these models, the relationship between the general factor (e.g. ethical leadership) and domain-specific factors (i.e. the multidimensional subscales) is assumed to be orthogonal (Chen et al., 2006; Reise, 2012). Thus, the general factor and dimensions are considered unrelated, in that the dimensions give contributions to the scale over and above that which the general factor contributes (Chen et al., 2006).

A bi-factor model specifies that the covariance among a set of item responses can be accounted for by a single general factor (e.g. a broad ethical leadership factor) that reflects the common variance among all scale items. This model also provides for specific group factors (i.e. the latent dimensions) that reflect additional common variance among clusters of items, usually with highly similar or related content (Reise, 2012).

Bi-factor models have many advantages. The use of this model allows researchers to study the role of domain-specific factors (or dimensions) independently of the general factor (Chen et al., 2006). Additionally, the strength of the relationship between the domain-specific factors and their associated items (i.e. factor loadings) can directly be examined (Chen et al., 2006). The bi-factor model allows for latent mean differences in the general factor, as well as the domain-specific factors to be compared across different groups, which is significant for multi-group measurement models and studies of measurement invariance.

The ELBS bi-factor model showed acceptable and close fit (RMSEA = .991; p > .05). All the items loaded statistically significantly on the broad, general Ethical Leadership factor. Additionally, the items that were designed to reflect the latent Morality, Compassion, Ethical Empowerment and Managing Ethics dimensions loaded statistically significantly (z ≥ |1.6449|; p < .05) on their designated domain-specific factors. Two items of the Ethical Envisioning subscale, however, did not load statistically significantly on this dimension. These were items 39 and 43. Section 4.6.4. will provide a more detailed discussion of these findings and depicts the fitted bi-factor measurement model.

4.5.4. Evaluating the Results of the Bi-Factor CFA

Following the introduction of the bi-factor measurement model for ethical leadership, a confirmatory factor analysis was conducted. In assessing the fit of the measurement model for the bi-factor ELBS, it assists the researcher in establishing the extent to which the data support the theoretical model for ethical leadership. Thus, the researcher is testing the degree to which the measurement model explains the covariance matrix. This theoretical model is a representation of how the 73 items should load on the respective five underlying dimensions of ethical leadership, with the recent inclusion of a broad, general ethical leadership factor. The bi-factor model was fitted by analysing the covariance matrix calculated from the ELBS data set, with 202 observations. Structural equation modelling (LISREL 8.8) was used for this purpose.

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The fit of the Ethical Leadership Behaviour Scale is assessed and discussed in the following sections. In assessing model fit, the following structure will be followed: (a) firstly, the overall model fit will be evaluated based on the goodness-of-fit indices discussed in Chapter 3; (b) secondly, the standardised residuals will be assessed; (c) thirdly, by examining the modification indices; (d) and lastly, by interpreting the measurement model parameter estimates. The fitted bi-factor Ethical Leadership Behaviour Scale (ELBS) is visually represented in Figure 4.2.

4.5.4.1. Assessing Overall Model Fit Statistics

This section will provide a detailed interpretation of the Goodness-of-Fit-Statistics for the ELBS bi-factor measurement model (Table 4.16). The fitted model is depicted as a path diagram in Figure 4.2.

Chi-Square=3482.321, df=2474, P-value=0.991, RMSEA=0.0732
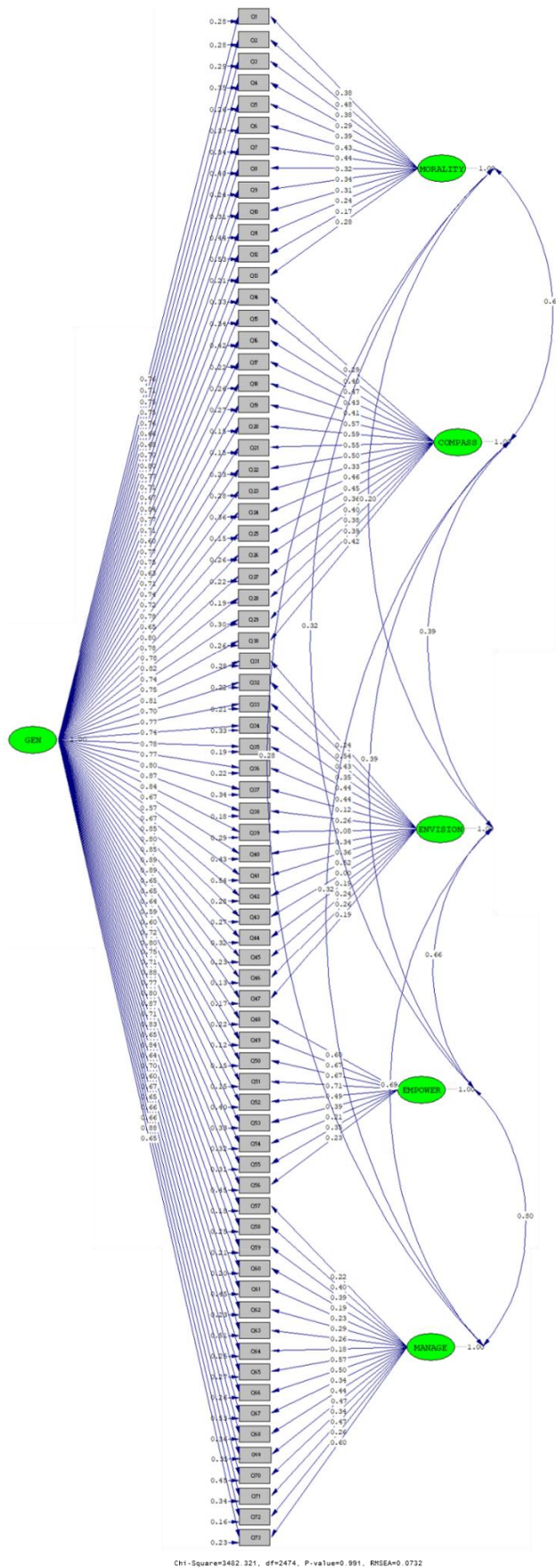
Figure 3.2

Fitted ELBS Bi-factor Measurement Model (Standardised Solution)

Table 4.16

Goodness-of-Fit Statistics for the ELBS Bi-factor Measurement Model

| Goodness of Fit Statistics |
|:---:|
| Degrees of Freedom = 2472 |
| Minimum Fit Function Chi-Square = 4511.865 (P = 0.0) |
| Normal Theory Weighted Least Squares Chi-Square = 4202.339 (P = 0.0) |
| **Satorra-Bentler Scaled Chi-Square = 3482.321 (P = 0.0)** |
| Estimated Non-centrality Parameter (NCP) = 1010.321 |
| 90 Percent Confidence Interval for NCP = (858.358; 1170.264) |
| |
| Minimum Fit Function Value = 22.447 |
| Population Discrepancy Function Value (F0) = 5.026 |
| 90 Percent Confidence Interval for F0 = (4.270; 5.822) |
| **Root Mean Square Error of Approximation (RMSEA) = 0.0451** |
| 90 Percent Confidence Interval for RMSEA = (0.0416; 0.0485) |
| **P-Value for Test of Close Fit (RMSEA < 0.05) = 0.991** |
| |
| Expected Cross-Validation Index (ECVI) = 19.604 |
| 90 Percent Confidence Interval for ECVI = (18.848; 20.399) |
| ECVI for Saturated Model = 26.876 |
| ECVI for Independence Model = 1048.988 |
| |
| Chi-Square for Independence Model with 2628 Degrees of Freedom = 210700.644 |
| Independence AIC = 210846.644 |
| Model AIC = 3940.321 |
| Saturated AIC = 5402.000 |
| Independence CAIC = 211161.147 |
| Model CAIC = 4926.914 |
| Saturated CAIC = 17038.631 |
| |
| Normed Fit Index (NFI) = 0.983 |
| Non-Normed Fit Index (NNFI) = 0.995 |
| Parsimony Normed Fit Index (PNFI) = 0.925 |
| Comparative Fit Index (CFI) = 0.995 |
| Incremental Fit Index (IFI) = 0.995 |
| Relative Fit Index (RFI) = 0.982 |
| |
| Critical N (CN) = 153.295 |
| |
| Root Mean Square Residual (RMR) = 0.0732 |
| Standardised RMR = 0.0366 |
| Goodness of Fit Index (GFI) = 0.636 |
| Adjusted Goodness of Fit Index (AGFI) = 0.602 |
| Parsimony Goodness of Fit Index (PGFI) = 0.582 |

The Satorra-Bentler chi-square ($χ^2$), calculated by using robust maximum likelihood estimation procedure, showed a statistically significant value (**3482.321**; $p < 0.001$) which denotes a significant test statistic. A significant X^2 implies that the model does not show exact fit. The exact fit null hypothesis (H_{01}: RMSEA = 0) is therefore rejected

(p < .05) (Hooper et al., 2008; Vieira, 2011).   This suggests that the ELBS measurement model was not able to reproduce the observed covariance matrix to a degree of accuracy that could be explained only in terms of sampling error. The differences in the two matrices (i.e. the observed covariance matrix and reproduced or fitted matrix) are therefore not due to sampling error only, but due to real differences between the two matrices in the population.   However, considering the chi-square statistic's (X^2) sensitivity to sample size and rather an idealistic stance of the exact fit null hypothesis, it is unlikely that the model would have shown exact fit (Hooper et al., 2008; Vieira, 2011).

Following the sensitivity of the chi-square statistic regarding sample sizes and deviations from multivariate normality, this statistic may be meaningfully interpreted by considering the degrees of freedom (Viera, 2011). Therefore, treating the chi-square statistic as a 'badness-of-fit measure' may be used by expressing the Satorra-Bentler X^2 estimate in terms of the degrees of freedom ($X^2/df=1.409$). According to Kelloway (2001), cut-off ratios between 2 and 5 indicate good fit. An alternative cut-off score would be that of Vieira (2001), where ratios of 2-1 or 3-1 indicate good fit. The ratio for the ELBS (1.409) therefore did not pass the Kelloway (1998) or Vierira (2001) cut-off scores for a measurement model demonstrating good fit.

It is further recommended that the degree of the lack of fit for the model be assessed by considering the non-centrality parameter (Diamantopoulos & Siguaw, 2000). For this assessment, the X^2 test statistic would follow a non-central X^2 distribution with the non-centrality parameter (NCP), λ. The non-centrality parameter, or estimated λ value (calculated as 1010.321) assesses the degree of model fit and shows the estimated discrepancy between the observed covariance and estimated population covariance matrixes. The λ estimate is calculated by subtracting the degrees of freedom (df) from the chi-square statistic (x^2).   It is accepted that the larger the λ, the further apart the real alternative hypothesis is from the null hypothesis. The 90 percent confidence interval for NCP has been calculated as 1010.321–1170.264. The large value obtained for the estimated λ indicated a higher level of discrepancy between the observed covariance (Σ) and the estimated population covariance (Σ(θ)) at a 10% significant level.

The measurement model was fitted by minimising a fit function that compares the observed sample covariance matrix (S) to the reproduced sample covariance matrix (Σ) (Jöreskog & Sörbom, 1993; Spangenberg & Theron, 2005). Model fit was depicted by the extent to which the minimum fit function value (22.447) approached zero. An estimated value of 5.026 was obtained for F0 with a 90 percent confidence interval for F0 (4.270; 5.822). A perfect fit would here be indicated if F0 was equal to zero. This would indicate that the observed population covariance matrix would have been the same as the estimated population covariance matrix ($\Sigma_0 = \Sigma_0$.) (Spangenberg & Theron, 2005).

The Root Mean Square Error of Approximation (RMSEA) indicates the discrepancy between the observed population covariance matrix and the estimated population covariance matrix. In this case, values below .05 indicate good model fit while values above .05 but less than .08 indicate reasonable fit. Further, values greater than .08 but smaller than .1 would suggest mediocre fit, and values greater than .1 indicate poor fit (Browne & Cudeck, 1993; Diamantopoulos & Siguaw, 2000). According to Diamantopoulos and Siguaw (2000), RMSEA is regarded as one of the most informative fit indices. In this case, the RMSEA value of 0.0451 indicates good fit. The 90 percent confidence interval for RMSEA (0.0416; 0.0485) also indicates good fit, as the upper limit of the confidence interval does not exceed the critical cut-off value of .50 (Spangenberg & Theron, 2005). Following this, the close fit null hypothesis cannot be rejected ($p \geq .05$), and the model therefore showed close fit.

While the non-centrality parameter (NCP) and the RMSEA is focused on error resulting from approximation, the expected cross-validation index (ECVI) is focussed on overall error (discrepancy between the reproduced sample covariance matrix and the expected covariance matrix obtained in the independent sample) (Byrne, 1989; Spangenberg & Theron, 2005). ECVI is regarded as a valuable indicator of overall fit (Diamantopoulos & Siguaw, 2000). The ECVI for the current study (19.604) was smaller than the ECVI for the independence model (1048.988) and the ECVI for the saturated model (26.876). These values suggest a positive model fit, indicating that the fitted model would have a better chance of being replicated in a cross-validation sample than in the saturated model or the independence model. This interpretation

follows statements by Kelloway (1998), where smaller values on this index are regarded as a more parsimonious fit.

The Akaike information criterion (AIC) and consistent version of AIC (CAIC) are comparative measures of fit and therefore only meaningful when these statistics are estimated for two different models (Kenny, 2015; Van der Westhuizen, 2015). Generally, these two statistics are used when comparing non-nested or non-hierarchical models estimated on similar data. Moreover, it indicates which of the models is the most parsimonious or stringent (Hooper et al., 2008). The assessment of parsimonious fit recognises that model fit can always be improved by either adding more paths to the model, or by estimating more parameters until the perfect fit is achieved. In assessing the AIC and the CAIC of the measurement model, the model's AIC/CAIC is compared to both the independent and saturated model. The value for the Akaike information criterion (AIC=3940.321) was smaller than both the independent/null model (210846.644) and the saturated model (5402.000). This indicates a more parsimonious model fit (Kelloway, 1998; Spangenberg & Theron, 2005).   Similarly, the values for consistent Akaike information criterion (CAIC=4926.914) indicate a more parsimonious fit, due to smaller values in the independent/null model (211161.147) and the saturated model (17038.631). Moreover, small values suggest a parsimonious fit, although there is no consensus as to how small the values should be.

Several indices of incremental fit will be analysed. These include: (a) the normed fit index (NFI = 0.983), (b) the non-normed fit index (NNFI = 0.995), (c) the incremental fit index (IFI = 0.995); (c) the comparative fit index (CFI = 0.995); and (d) the relative fit Index (RFI = 0.982). These incremental fit indices are all interpreted considering a cut-off score of .95, which represents good model fit (Kelloway, 1998; Spangenberg & Theron, 2005; Vieira, 2011; Hu & Bentler, 1999) and where a value greater than .95 would represent a more ambitious model fit (Hooper et al., 2008). All the indices mentioned exceeded both cut-off scores, which indicates very good comparative fit relative to the independence model.

The critical sample size statistic, also known as Hoelter's critical N (CN), reflects the size of the sample that would have made the obtained minimum fit function chi-square

statistic X^2 just statistically significant at the .05 significance level. The estimated CN value (153.295) fell well below the recommended threshold value of 200 (Diamantopoulos & Siguaw, 2000). This suggests that the model offered enough representation of the data (Hoelter, 1983). However, Spangenberg and Theron (2005) suggest that the proposed threshold should be used with caution.

The root mean square residual (RMR = .0732), as well as the standardised root mean square residual (SRMR = .0366), represent the mean squared difference between the sample covariance matrix and the reproduced covariance matrix (Hooper et al., 2008). Values under .05 for the standardised RMR indicates good model fit (which is the case here). For SRMR, values less than .08 are generally considered a good fit (Hu & Bentler, 1999).

The goodness-of-fit-index (GFI), as well as the adjusted goodness of fit index (AGFI) and the parsimony goodness of fit index (PGFI) all testify to the degree of success with which the reproduced sample covariance matrix represents the observed sample covariance matrix (Diamantopoulos & Siguaw, 2000). The GFI specifically calculates the proportion of variance that is accounted for by the estimated population covariance – it shows how closely the model came to replicate the observed covariance matrix (Diamantopoulos & Siguaw, 2000). Ideally, the GFI and AGFI measures should be between zero and unity (i.e. 1), and good fit is shown by values exceeding .90 (Hooper et al., 2008; Kelloway, 1998). However, in the case where factor loadings and samples sizes are low or small, a cut-off value of .95 is recommended (Hooper et al., 2008). In the case of the ELBS measurement model, these values (GFI = 0.636; AGFI = 0.602) show unsatisfactory fit.

Thus, the integrated results from the array of fit statistics used reflect a measurement model with a reasonably good fit that outperforms the independent model and the saturated model.

In Chapter 3, guidelines for interpreting model-fit statistics were specified under section 3.9.3.4. Table 4.17 serves as a summary of the interpretations for the fitted bi-factor ELBS measurement model, as per the guidelines of Chapter 3.

Table 4.17

Summary of Goodness-of-Fit-Statistics Results

Goodness-Of-Fit-Statistics Results Summary		
Overall fit measures	Fit statistics results	Discussion
Satorra-Bentler Scaled Chi-Square	3482.321 (p < 0.001)	The X^2 statistics indicated a significant test statistic result (p < 0.001). This indicates that the exact fit hypothesis mentioned above (H_{01}: RMSEA = 0), can be rejected. The model, therefore, does not show exact fit.
Chi-square/Degrees of Freedom (X^2/df)	3482.321/2472=1.409	When dividing the X^2 by the degrees of freedom, a value between 2 and 5 suggests good fit. According to this statistic, the fit is unsatisfactory.
Root Mean Square Error of Approximation (RMSEA)	0.0451	Values below .05 indicate good fit, as is the case here. This shows evidence of good fit.
P-Value for Test of Close Fit (RMSEA < 0.05)	0.991	Values greater than .05 would indicate close fit. This model demonstrates close fit, therefore H_{02}: RMSEA ≤ .05 is not rejected.
90% Confidence Interval for RMSEA	0.0416; 0.0485	The model shows reasonable fit as the lower limit was not close to zero, and the upper limit was smaller than .08.
Root Mean Square Residual (RMR)	0.0732	High values (>.08) for this statistic indicate poor fit. In this case, RMR <.08.
Standardised Root Mean Square Residual (SRMR)	0.0366	SRMR values smaller than .05 indicates good fit.
Goodness-of-fit Index (GFI)	0.636	Ideally, the GFI statistic would exceed .90, which is not the case here.
Normed Fit Index (NFI)	0.983	Relative fit indices should exceed .95 to indicate good fit. In this case, all the relative indices were greater than .95.
Non-normed Fit Index (NNFI)	0.995	
Comparative Fit Index (CFI)	0.995	
Incremental Fit Index (IFI)	0.995	
Relative Fit Index (RFI)	0.982	

4.5.4.2. *Examination of Measurement Model Residuals*

The stem and leaf plot below (Figure 4.3.) illustrates the number and distribution of standardised residuals. These values also need to be considered when evaluating the fit of the measurement model. A standardised residual with an absolute value greater than 2.58 was interpreted as large at a 1% significance level (Diamantopoulos & Siguaw, 2000), meaning that these scores are interpreted as large if they exceed +2.58 or –2.58. Following this, large positive residuals are seen to reflect a model that underestimates the covariance terms between specific observed variables (therefore the model can be improved by adding paths). Contrarily, large negative residuals are interpreted to mean that the model over-estimates the covariance between specific observed variables (in this scenario, paths associated with the indicator variables can be removed) (Diamantapoulos & Siguaw, 2000; Kelloway, 1998).

The ELBS measurement model's standardised residuals comprised of 55 negative and 76 positive residuals. Expressed as a percentage, the total number of unique elements in the observed variance-covariance matrix is 4.85% ((131/2701) *100). The small number of large residual correlations indicates good model fit.

```
- 1|7
 - 1|0
 - 0|97776666666555555555
 - 0|4444444444444433333333333333333333332222222222222222222222222222222222111+95
  0|1111111111111111111111111111111111111111111111112222222222222222222222222222+39
  0|5555555555566666777777888999
  1|011233334
  1|579
  2|3
  2|
  3|0
  3|
  4|
  4|
  5|
  5|5
```

Figure 4.3

Stem and Leaf Plot of the Standardised Residuals

4.5.4.3. *Examination of Modification Indices*

Theoretical models often do not provide an adequate fit to data, which leads to the notion of improving model fit in the following ways (Breckler, 1990):

- Changing factor loadings (λ) from fixed to free or vice versa;
- Allowing for or constraining correlations among measurement errors (δ); and
- Allowing for or constraining correlations among the exogenous latent variables (ξ).

However, despite these possible ways to improve the fit of a model, there are also no guarantees that this would lead to the population model. It is also unclear which paths would improve the parsimonious fit of the model. Therefore, the results of the modification model should be interpreted with due caution, and be subjected to cross-validation where possible (Browne & Cudeck, 1993).
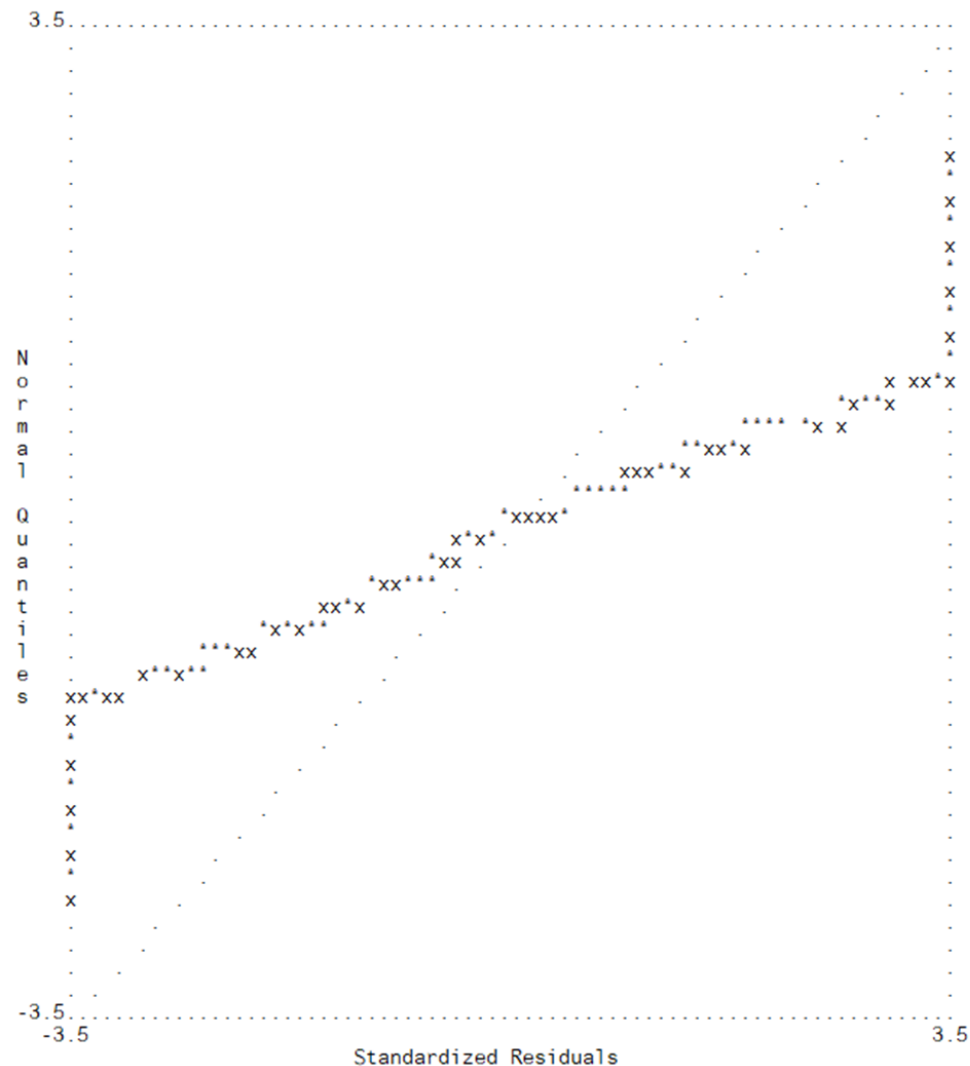
Figure 4.4

Q-Plot of Standardised Residuals

The modification indices of currently fixed parameters in a model were used to determine the impact that more (or less) paths would have on model fit. Therefore, examining modification indices assists the researcher to assess the decrease that would occur in the X^2 statistic, should parameters that are currently fixed, be set free and the model be re-estimated.

In this regard, modification indices with values exceeding 6.64 (Theron, 2017) identify currently fixed parameters that would enhance the fit of a model significantly (p<.01), should they be set free (Diamantopoulos & Siguaw, 2000). Modification indices calculated for the factor loading matrix Λx, identify 17 additional paths that will have a significant positive impact on model fit. Therefore only 17 out of 365 (4.66%) possible

additions to x will result in an improved model fit (p<.01). This small percentage of modification index values is favourable for model fit. Similarly, modification indices calculated for the theta-delta matrix reveal 76 covariance terms that will significantly improve the model's fit. Allowing specifically 76 out of 2427 possible covariance terms to be freed (3.13%), will result in an improved model fit (p<.01). Again, the small percentage of large modification index values reflects positively regarding model fit.

4.5.4.1. *Integrated Verdict on Measurement Model Fit*

In evaluating the fit of the ELBS, the exact fit null hypothesis was rejected, and the close fit hypothesis could not be rejected. The basket of fit statistics derived from LISREL 8.8 also supported reasonably good model fit. This was further corroborated by the number and distribution of the large standardised variance and covariance residuals. The number of the large modification indices calculated for Λ_X and Θ_δ substantiated the conclusion of good model fit. Therefore, the measurement model parameter estimates were considered credible for interpretation.

4.5.5. **Evaluation of the Measurement Model**

The unstandardised factor loading matrix (**X**) reflects the slope of the regression of the unstandardised items X_j on the unstandardised latent ethical leadership dimensions ξ_i. As shown in Table 4.18, the unstandardised factor loading matrix was used to determine the statistical significance of the factor loadings hypothesised by the first-order measurement model. Table 4.18 indicates that all the freed first-order factor loadings are statistically significant ($z \geq |1.6449|$; $p < 0.05$), except for two items, i.e. items 39 and 43. All items (but for items 39 and 43) statistically (p<.05) reflect the ethical leadership dimensions they were designated to measure significantly.   In addition to this, these items explain unique variance over and above that which is explained by the general factor ethical leadership.

As for the two insignificant factor loadings, this would mean that the narrower, more specific latent dimension does not explain unique variance in the item that is not explained by the broader, more general leadership factor. This, however, does not brand these two items as worthless. It is suggested that these items be rewritten in

such a way that allows them to explain unique variance in the latent ethical leadership dimensions they are tasked to reflect (i.e. ethical envisioning).

As seen in Table 4,18, all the items loaded statistically significantly on the general factor (z values ≥ |1.64|, p < .05). This suggests that the general factor explains significant variance in all items.

Table 4.18

Unstandardised Lambda Matrix

	MORALITY	COMPASS	ENVISION	EMPOWER	MANAGE	GEN
			Unstandardised Lambda Matrix			
Q1	0.466*	- -	- -	- -	- -	0.927
	(0.078)					(0.071)
	5.979					13.076
Q2	0.577	- -	- -	- -	- -	0.854
	(0.075)					(0.076)
	7.730					11.254
Q3	0.443	- -	- -	- -	- -	0.862
	(0.081)					(0.069)
	5.448					12.423
Q4	0.304	- -	- -	- -	- -	0.792
	(0.059)					(0.062)
	5.132					12.817
Q5	0.508	- -	- -	- -	- -	0.996
	(0.071)					(0.078)
	7.104					12.826
Q6	0.516	- -	- -	- -	- -	0.799
	(0.070)					(0.071)
	7.403					11.299
Q7	0.504	- -	- -	- -	- -	0.787
	(0.071)					(0.065)
	7.101					12.047
Q8	0.453	- -	- -	- -	- -	0.987
	(0.093)					(0.085)
	4.843					11.657
Q9	0.424	- -	- -	- -	- -	1.009
	(0.066)					(0.063)
	6.462					16.057
Q10	0.475	- -	- -	- -	- -	1.166
	(0.090)					(0.085)
	5.268					13.739
Q11	0.319	- -	- -	- -	- -	0.938
	(0.083)					(0.076)

	3.845					12.258
Q12	0.231	- -	- -	- -	- -	0.900
	(0.085)					(0.085)
	2.718					10.628
Q13	0.396	- -	- -	- -	- -	1.188
	(0.072)					(0.072)
	5.540					16.440
Q14	- -	0.425	- -	- -	- -	1.135
		(0.104)				(0.083)
		4.098				13.603
Q15	- -	0.468	- -	- -	- -	0.829
		(0.068)				(0.073)
		6.923				11.295
Q16	- -	0.764	- -	- -	- -	0.969
		(0.108)				(0.106)
		7.067				9.141
Q17	- -	0.611	- -	- -	- -	1.098
		(0.065)				(0.076)
		9.439				14.444
Q18	- -	0.585	- -	- -	- -	1.086
		(0.065)				(0.079)
		9.059				13.833
Q19	- -	0.833	- -	- -	- -	0.920
		(0.084)				(0.097)
		9.877				9.512
Q20	- -	0.724	- -	- -	- -	0.880
		(0.056)				(0.073)
		13.008				11.986
Q21	- -	0.667	- -	- -	- -	0.909
		(0.059)				(0.073)
		11.257				12.483
Q22	- -	0.638	- -	- -	- -	0.922
		(0.066)				(0.070)
		9.612				13.180
Q23	- -	0.402	- -	- -	- -	0.951
		(0.068)				(0.066)
		5.868				14.388
Q24	- -	0.642	- -	- -	- -	0.917
		(0.095)				(0.089)
		6.740				10.312
Q25	- -	0.575	- -	- -	- -	1.019
		(0.068)				(0.070)
		8.476				14.549
Q26	- -	0.426	- -	- -	- -	0.919
		(0.067)				(0.072)
		6.338				12.797

Q27	- -	0.531	- -	- -	- -	1.034
		(0.081)				(0.076)
		6.536				13.513
Q28	- -	0.522	- -	- -	- -	1.133
		(0.077)				(0.073)
		6.747				15.499
Q29	- -	0.530	- -	- -	- -	1.017
		(0.088)				(0.079)
		5.986				12.937
Q30	- -	0.601	- -	- -	- -	1.068
		(0.083)				(0.082)
		7.264				12.950
Q31	- -	- -	0.303	- -	- -	1.008
			(0.070)			(0.067)
			4.345			15.025
Q32	- -	- -	0.869	- -	- -	1.126
			(0.104)			(0.098)
			8.371			11.438
Q33	- -	- -	0.621	- -	- -	1.114
			(0.086)			(0.081)
			7.244			13.748
Q34	- -	- -	0.466	- -	- -	1.000
			(0.088)			(0.080)
			5.289			12.505
Q35	- -	- -	0.658	- -	- -	1.164
			(0.089)			(0.082)
			7.438			14.147
Q36	- -	- -	0.676	- -	- -	1.169
			(0.109)			(0.091)
			6.190			12.789
Q37	- -	- -	0.167	- -	- -	1.114
			(0.093)			(0.073)
			1.793			15.170
Q38	- -	- -	0.369	- -	- -	1.244
			(0.082)			(0.070)
			4.485			17.836
Q39	- -	- -	0.094	- -	- -	0.950
			(0.064)			(0.065)
			1.476			14.599
Q40	- -	- -	0.435	- -	- -	0.866
			(0.098)			(0.077)
			4.442			11.183
Q41	- -	- -	0.501	- -	- -	0.805
			(0.097)			(0.093)
			5.188			8.703
Q42	- -	- -	0.769	- -	- -	0.994

			(0.122)			(0.100)
			6.301			9.974
Q43	- -	- -	0.005	- -	- -	1.088
			(0.076)			(0.065)
			0.060			16.647
Q44	- -	- -	0.265	- -	- -	1.095
			(0.076)			(0.070)
			3.468			15.655
Q45	- -	- -	0.330	- -	- -	1.187
			(0.090)			(0.070)
			3.672			16.923
Q46	- -	- -	0.366	- -	- -	1.263
			(0.077)			(0.067)
			4.777			18.826
Q47	- -	- -	0.275	- -	- -	1.299
			(0.079)			(0.069)
			3.482			18.749
Q48	- -	- -	- -	0.934	- -	1.015
				(0.080)		(0.095)
				11.623		10.648
Q49	- -	- -	- -	1.080	- -	1.051
				(0.073)		(0.098)
				14.795		10.734
Q50	- -	- -	- -	1.065	- -	1.023
				(0.077)		(0.096)
				13.864		10.611
Q51	- -	- -	- -	1.108	- -	0.924
				(0.075)		(0.099)
				14.729		9.303
Q52	- -	- -	- -	0.735	- -	0.893
				(0.109)		(0.099)
				6.742		9.001
Q53	- -	- -	- -	0.623	- -	1.157
				(0.092)		(0.090)
				6.786		12.797
Q54	- -	- -	- -	0.307	- -	1.190
				(0.085)		(0.077)
				3.619		15.390
Q55	- -	- -	- -	0.523	- -	1.138
				(0.097)		(0.084)
				5.366		13.528
Q56	- -	- -	- -	0.306	- -	0.957
				(0.094)		(0.077)
				3.255		12.389
Q57	- -	- -	- -	- -	0.341	1.381
					(0.073)	(0.072)

					4.667	19.231
Q58	- -	- -	- -	- -	0.625	1.204
					(0.109)	(0.092)
					5.719	13.122
Q59	- -	- -	- -	- -	0.632	1.297
					(0.088)	(0.080)
					7.188	16.229
Q60	- -	- -	- -	- -	0.296	1.336
					(0.086)	(0.071)
					3.451	18.897
Q61	- -	- -	- -	- -	0.281	0.859
					(0.077)	(0.080)
					3.636	10.743
Q62	- -	- -	- -	- -	0.414	1.167
					(0.080)	(0.075)
					5.199	15.479
Q63	- -	- -	- -	- -	0.342	0.871
					(0.099)	(0.089)
					3.472	9.764
Q64	- -	- -	- -	- -	0.259	1.221
					(0.085)	(0.073)
					3.029	16.792
Q65	- -	- -	- -	- -	0.853	0.969
					(0.096)	(0.102)
					8.913	9.492
Q66	- -	- -	- -	- -	0.777	1.073
					(0.084)	(0.092)
					9.283	11.664
Q67	- -	- -	- -	- -	0.577	1.006
					(0.125)	(0.110)
					4.608	9.145
Q68	- -	- -	- -	- -	0.652	0.990
					(0.091)	(0.093)
					7.125	10.601
Q69	- -	- -	- -	- -	0.787	1.076
					(0.122)	(0.108)
					6.428	9.986
Q70	- -	- -	- -	- -	0.526	1.002
					(0.106)	(0.094)
					4.984	10.651
Q71	- -	- -	- -	- -	0.670	0.952
					(0.096)	(0.100)
					7.003	9.550
Q72	- -	- -	- -	- -	0.405	1.380
					(0.080)	(0.074)
					5.056	18.735

					0.932	1.010
Q73	- -	- -	- -	- -	(0.096)	(0.103)
					9.721	9.809

Note: The top value represents the unstandardised λ_{ij} estimate, the second value in brackets the standard error of λ_{ij} and the third value the test statistic z. MORALITY refers to Morality, COMPASS refers to Compassion, ENVISION refers to Ethical Envisioning, EMPOWER refers to Ethical Empowerment, MANAGE refers to Managing Ethics, and GEN refers to the General Ethical Leadership Factor.

The completely standardised factor loading matrix (Λ_x) is also considered (Table 4.19). This matrix reflects the slope of the regression of the standardised items X_j on the standardised latent ethical leadership dimensions ξ_i.

Table 4.19

Completely Standardised Lambda Matrix

	MORALITY	COMPASS	ENVISION	EMPOWER	MANAGE	GEN
			Completely Standardised Lambda Matrix			
Q1	0.382	- -	- -	- -	- -	0.760
Q2	0.477	- -	- -	- -	- -	0.705
Q3	0.384	- -	- -	- -	- -	0.749
Q4	0.290	- -	- -	- -	- -	0.754
Q5	0.390	- -	- -	- -	- -	0.765
Q6	0.430	- -	- -	- -	- -	0.664
Q7	0.439	- -	- -	- -	- -	0.685
Q8	0.322	- -	- -	- -	- -	0.701
Q9	0.338	- -	- -	- -	- -	0.805
Q10	0.313	- -	- -	- -	- -	0.769
Q11	0.241	- -	- -	- -	- -	0.709
Q12	0.171	- -	- -	- -	- -	0.666
Q13	0.281	- -	- -	- -	- -	0.843
Q14	- -	0.287	- -	- -	- -	0.768
Q15	- -	0.398	- -	- -	- -	0.705
Q16	- -	0.471	- -	- -	- -	0.597
Q17	- -	0.429	- -	- -	- -	0.772
Q18	- -	0.407	- -	- -	- -	0.755
Q19	- -	0.575	- -	- -	- -	0.634
Q20	- -	0.587	- -	- -	- -	0.714
Q21	- -	0.546	- -	- -	- -	0.744
Q22	- -	0.500	- -	- -	- -	0.722
Q23	- -	0.330	- -	- -	- -	0.781
Q24	- -	0.458	- -	- -	- -	0.654
Q25	- -	0.453	- -	- -	- -	0.803
Q26	- -	0.361	- -	- -	- -	0.778
Q27	- -	0.403	- -	- -	- -	0.785
Q28	- -	0.377	- -	- -	- -	0.819

Q29	- -	0.387	- -	- -	- -	0.744
Q30	- -	0.421	- -	- -	- -	0.749
Q31	- -	- -	0.244	- -	- -	0.811
Q32	- -	- -	0.538	- -	- -	0.697
Q33	- -	- -	0.432	- -	- -	0.774
Q34	- -	- -	0.346	- -	- -	0.743
Q35	- -	- -	0.443	- -	- -	0.783
Q36	- -	- -	0.443	- -	- -	0.766
Q37	- -	- -	0.120	- -	- -	0.802
Q38	- -	- -	0.257	- -	- -	0.866
Q39	- -	- -	0.083	- -	- -	0.836
Q40	- -	- -	0.338	- -	- -	0.672
Q41	- -	- -	0.358	- -	- -	0.575
Q42	- -	- -	0.519	- -	- -	0.671
Q43	- -	- -	0.004	- -	- -	0.853
Q44	- -	- -	0.194	- -	- -	0.801
Q45	- -	- -	0.236	- -	- -	0.848
Q46	- -	- -	0.259	- -	- -	0.894
Q47	- -	- -	0.189	- -	- -	0.892
Q48	- -	- -	- -	0.599	- -	0.651
Q49	- -	- -	- -	0.671	- -	0.653
Q50	- -	- -	- -	0.666	- -	0.639
Q51	- -	- -	- -	0.707	- -	0.589
Q52	- -	- -	- -	0.491	- -	0.596
Q53	- -	- -	- -	0.388	- -	0.719
Q54	- -	- -	- -	0.206	- -	0.800
Q55	- -	- -	- -	0.346	- -	0.754
Q56	- -	- -	- -	0.226	- -	0.706
Q57	- -	- -	- -	- -	0.218	0.881
Q58	- -	- -	- -	- -	0.400	0.771
Q59	- -	- -	- -	- -	0.389	0.798
Q60	- -	- -	- -	- -	0.193	0.872
Q61	- -	- -	- -	- -	0.231	0.707
Q62	- -	- -	- -	- -	0.293	0.827
Q63	- -	- -	- -	- -	0.256	0.652
Q64	- -	- -	- -	- -	0.179	0.845
Q65	- -	- -	- -	- -	0.566	0.643
Q66	- -	- -	- -	- -	0.504	0.696
Q67	- -	- -	- -	- -	0.342	0.597
Q68	- -	- -	- -	- -	0.441	0.671
Q69	- -	- -	- -	- -	0.474	0.648
Q70	- -	- -	- -	- -	0.345	0.656
Q71	- -	- -	- -	- -	0.466	0.663
Q72	- -	- -	- -	- -	0.259	0.882
Q73	- -	- -	- -	- -	0.597	0.647

Note: MORALITY refers to Morality, COMPASS refers to Compassion, ENVISION refers to Ethical Envisioning, EMPOWER refers to Ethical Empowerment, MANAGE refers to Managing Ethics, and GEN refers to the General Ethical Leadership Factor.

In the case of the bi-factor measurement model, each item is expected to load significantly on both the general and narrow latent dimension and that is the sum of the squared completely standardised factor loadings greater than .50 (i.e. the sum of the full standard factor loadings for each item would essentially be exceeding the critical value of .71). When interpreting the completely standardised factor loading matrix, it seems that the broad, general factor explains more variance in the items. The R² values for the sum of the full factor loading for each item are shown in Table 4.20.

Table 4.20
Sum of Squared Multiple Correlations for Items

Sum of Squared Multiple Correlations for Items											
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
0.724	0.725	0.708	0.653	0.737	0.626	0.662	0.595	0.762	0.689	0.561	0.472
Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24
0.790	0.672	0.656	0.578	0.780	0.735	0.733	0.855	0.852	0.771	0.719	0.638
Q25	Q26	Q27	Q28	Q29	Q30	Q31	Q32	Q33	Q34	Q35	Q36
0.850	0.735	0.779	0.813	0.703	0.738	0.717	0.776	0.785	0.671	0.808	0.783
Q37	Q38	Q39	Q40	Q41	Q42	Q43	Q44	Q45	Q46	Q47	Q48
0.657	0.816	0.705	0.566	0.458	0.720	0.728	0.680	0.774	0.866	0.831	0.783
Q49	Q50	Q51	Q52	Q53	Q54	Q55	Q56	Q57	Q58	Q59	Q60
0.877	0.852	0.848	0.597	0.667	0.683	0.688	0.549	0.823	0.755	0.788	0.798
Q61	Q62	Q63	Q64	Q65	Q66	Q67	Q68	Q69	Q70	Q71	Q72
0.553	0.770	0.491	0.746	0.734	0.739	0.473	0.645	0.645	0.549	0.657	0.845
Q73											
0.774											

The critical factor loading (.71 or higher) used earlier in this section, implies a critical R^2 value of .50 (Hair et al., 2006). In this case, all the 73 items aside from items 12, 41, 63 and 67, exceed the critical factor loading. However, these values only marginally miss the critical cut-off value, with the lowest value being .46. Therefore, only four of the items explain less than 50% of the variance in the items.

The unstandardised measurement error variances for the ELBS items are shown in Table 4.21, together with the completely standardised measurement error variances in Table 4.22. The unstandardised theta-delta matrix postulates that indicators are

statistically significantly affected by measurement error when the indicators show absolute z-values greater than 1.6449. In the case of the ELBS measurement model, all the indicators were interpreted as significantly affected by measurement error. Therefore, all the theta-delta variance null hypotheses were rejected.

Table 4.21

Unstandardised Measurement Error Variances

Unstandardised Measurement Error Variances									
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
0.410*	0.404	0.387	0.383	0.446	0.541	0.447	0.802	0.375	0.715
(0.041)	(0.043)	(0.038)	(0.034)	(0.049)	(0.050)	(0.045)	(0.080)	(0.039)	(0.071)
9.937	9.334	10.238	11.358	9.075	10.774	9.831	10.062	9.715	10.018
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
0.768	0.965	0.417	0.718	0.476	1.113	0.447	0.548	0.562	0.221
(0.091)	(0.177)	(0.050)	(0.070)	(0.055)	(0.158)	(0.043)	(0.057)	(0.077)	(0.027)
8.459	5.438	8.386	10.221	8.608	7.059	10.435	9.639	7.263	8.202
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
0.220	0.374	0.416	0.710	0.242	0.369	0.384	0.358	0.555	0.532
(0.027)	(0.056)	(0.045)	(0.125)	(0.024)	(0.066)	(0.038)	(0.042)	(0.067)	(0.056)
8.041	6.732	9.279	5.666	9.881	5.614	10.144	8.587	8.342	9.494
Q31	Q32	Q33	Q34	Q35	Q36	Q37	Q38	Q39	Q40
0.437	0.584	0.445	0.596	0.424	0.505	0.662	0.381	0.381	0.720
(0.062)	(0.108)	(0.057)	(0.076)	(0.052)	(0.058)	(0.109)	(0.052)	(0.069)	(0.096)
7.052	5.398	7.750	7.839	8.134	8.712	6.093	7.253	5.513	7.465
Q41	Q42	Q43	Q44	Q45	Q46	Q47	Q48	Q49	Q50
1.063	0.613	0.443	0.597	0.443	0.267	0.359	0.527	0.318	0.379
(0.143)	(0.114)	(0.058)	(0.096)	(0.058)	(0.028)	(0.040)	(0.070)	(0.054)	(0.091)
7.458	5.360	7.638	6.200	7.637	9.410	8.872	7.552	5.868	4.184
Q51	Q52	Q53	Q54	Q55	Q56	Q57	Q58	Q59	Q60
0.374	0.903	0.860	0.701	0.709	0.829	0.436	0.598	0.561	0.473
(0.084)	(0.142)	(0.114)	(0.083)	(0.079)	(0.111)	(0.044)	(0.081)	(0.075)	(0.055)
4.476	6.370	7.554	8.469	8.975	7.476	9.952	7.375	7.461	8.604
Q61	Q62	Q63	Q64	Q65	Q66	Q67	Q68	Q69	Q70
0.659	0.459	0.908	0.531	0.602	0.620	1.498	0.774	0.978	1.051
(0.070)	(0.056)	(0.109)	(0.075)	(0.072)	(0.076)	(0.164)	(0.103)	(0.137)	(0.122)
9.395	8.143	8.291	7.039	8.372	8.146	9.113	7.528	7.128	8.630
Q71	Q72	Q73							
0.706	0.380	0.551							
(0.082)	(0.042)	(0.074)							
8.651	9.107	7.429							

Note: The top value represents the unstandardised $\Theta_{\delta j}$ estimate, the second value in brackets the standard error of $\Theta_{\delta j}$ and the third value the test statistic z.

Regarding the completely standardised measurement error variances, these values are all sufficiently small. As seen in this matrix, measurement error variance accounts for between 12.3% and 54.2% of the variance in the items. However, in the case of 58 of the 73 items (79.5%), measurement error accounts for less than 35% of the item variance (See Table 4.22).

Table 4.22

Completely Standardised Measurement Error Variances

Completely Standardised Measurement Error Variances									
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
0.276	0.275	0.292	0.347	0.263	0.374	0.338	0.405	0.238	0.311
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
0.439	0.528	0.210	0.328	0.344	0.422	0.220	0.265	0.267	0.145
Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
0.148	0.229	0.281	0.362	0.150	0.265	0.221	0.187	0.297	0.262
Q31	Q32	Q33	Q34	Q35	Q36	Q37	Q38	Q39	Q40
0.283	0.224	0.215	0.329	0.192	0.217	0.343	0.184	0.295	0.434
Q41	Q42	Q43	Q44	Q45	Q46	Q47	Q48	Q49	Q50
0.542	0.280	0.272	0.320	0.226	0.134	0.169	0.217	0.123	0.148
Q51	Q52	Q53	Q54	Q55	Q56	Q57	Q58	Q59	Q60
0.152	0.403	0.333	0.317	0.312	0.451	0.177	0.245	0.212	0.202
Q61	Q62	Q63	Q64	Q65	Q66	Q67	Q68	Q69	Q70
0.447	0.230	0.509	0.254	0.266	0.261	0.527	0.355	0.355	0.451
Q71	Q72	Q73							
0.343	0.155	0.226							

The latent ethical leadership dimensions are expected to correlate, but not excessively high. The latent variable inter-correlations are shown in the phi matrix (Table 4.23). All the inter-latent variables are statistically significant (p<.05), except for the correlation between ethical envisioning and morality. This indicates that these two dimensions essentially function independently, instead of showing a significant correlation with each other. Considering the definitions of these dimensions, this finding makes conceptual sense.

Correlations are considered excessively high in this study if they exceed a value of .90. Judged by this criterion, none of the correlations in the phi matrix are excessively high, as the highest correlation was .80.

Table 4.23

Unstandardised Phi Matrix

			Phi Matrix			
	MORALITY	COMPASS	ENVISION	EMPOWER	MANAGE	GEN
MORALITY	1.000					
COMPASS	0.620*	1.000				
	(0.073)					
	8.494					
ENVISION	0.195	0.394	1.000			
	(0.136)	(0.097)				
	1.434	4.075				
EMPOWER	0.319	0.388	0.662	1.000		
	(0.096)	(0.088)	(0.062)			
	3.329	4.391	10.633			
MANAGE	0.283	0.318	0.693	0.799	1.000	
	(0.100)	(0.102)	(0.067)	(0.037)		
	2.844	3.108	10.309	21.875		
GEN	- -	- -	- -	- -	- -	1.000

Note: The top value represents the unstandardised φ_{ij} estimate, the second value in brackets the standard error of φ_{ij}, and the third value the test statistic z. MORALITY refers to Morality, COMPASS refers to Compassion, ENVISION refers to Ethical Envisioning, EMPOWER refers to Ethical Empowerment, MANAGE refers to Managing Ethics, and GEN refers to the General Ethical Leadership Factor.

4.5.6. Discriminant Validity

In evaluating the discriminant validity for the ELBS, the five latent variables were designed to be conceptually distinct, yet related. It is therefore expected that the ethical leadership dimensions will not show excessive correlations with one another. Correlations are regarded as high if they exceed a critical cut-off value of .90 (Theron, 2015). None of the correlations, as seen in Table 4.24 exceeded this critical cut-off value.

The possibility that latent variables correlate to the degree of unity in the population, while correlating less than unity due to sampling error only, should also be investigated. The 95% confidence interval for φ_{ij} was calculated by using an Excel

Maco developed by Scientific Software International (Mels, 2010) in all cases where the sample estimate of φ_{ij} exceeded .80. Ideally, the interval should not include unity as this would threaten discriminant validity. As seen in Table 4.24, none of the intervals included unity. This indicates discriminant validity of the ELBS dimensions.

Table 4.24

95% Confidence Interval for the ELBS Phi Estimates

	95 % Confidence Interval Estimate		
Estimate	Standard Error Estimate	Lower Limit Of 95% Confidence Interval	Upper Limit Of 95% Confidence Interval
0,620	0,073	0,456	0,743
0,195	0,136	-0,079	0,442
0,319	0,096	0,120	0,493
0,283	0,100	0,078	0,465
0,394	0,097	0,189	0,566
0,388	0,088	0,204	0,546
0,318	0,102	0,107	0,502
0,662	0,062	0,523	0,767
0,693	0,067	0,538	0,803
0,799	0,037	0,714	0,861

4.5.7. Power Assessment

As seen earlier in this Chapter, the null hypothesis for close fit was not rejected. Therefore, the proposed model closely reflects reality. The question that the power assessment aims to answer is whether a decrease in sample size would affect the decision to not reject H_0, as a decrease in sample size typically lowers the statistical power of the analysis. Therefore, statistical power reflects the probability of rejecting an incorrect model.

In conducting the chi-square test, Type I errors should be considered. Subsequently, the power analysis was conducted to account for the probability of Type II errors (Diamantopoulos & Siguaw, 2000). The difference between these two errors in structural equation modelling is as follows:

> When we test a model's fit by, say, the chi-square test, we emphasize the probability of making a Type I error, i.e. rejecting a correct model; this probability is captured by the significance level ά, which is usually set at 0.05. A significant chi-square result indicates that if the null hypothesis is true (i.e. the model is correct in the population), then the probability of incorrectly rejecting it is low (i.e. less than five times out of 100

if $\acute{\alpha}$ = 0.05). However, another error that can occur is not to reject an incorrect model. This type of error is known as Type II error and the probability associated with it is denoted as β. The probability of avoiding a Type II error is, therefore, 1-β and it is the probability that indicates the power of our test; thus the power of the test tells us how likely it is that a false null hypothesis (i.e. incorrect model) will be rejected. (p.93)

The power associated with the test of close fit was evaluated. The following elements were specified: (a) Level of significance .05; (b) Sample size 202; (c) Degrees of freedom 2472; (d) RMSEA was set to .0451 for H_0; and (e) RMSEA was set to .991 under H_a. The probability of rejection H_0: RMSEA = .05| H_a: RMSEA = .08 was 1, which is regarded as a value of unity (see Appendix C).

This serves as evidence that the analysis was sufficiently powerful (≥ .80) (Diamantopolous & Siguaw, 2000) and confirms that no error was made in not rejecting an incorrect model if the model did not fit reasonably.

Software developed by Preacher and Coffman (2006) in R was used to determine the statistical power of the test of close fit.

4.5.8. Summary

The original ELBS scale consisted of five dimensions represented by 73 items. The questionnaire was distributed electronically and was completed online by 202 research participants. The original ELBS was subjected to psychometric evaluation, which included reliability analysis, dimensionality analysis, and Confirmatory Factor Analysis (CFA).

The item analysis showed that each latent dimension of the ELBS showed acceptable reliability. None of the items were deleted during these analyses. Consequently, all 73 items were subjected to Exploratory Factor Analysis (EFA). All five dimensions met the assumption of unidimensionality.

A confirmatory factor analysis on the original ELBS did not show an exact nor close fit. The five-factor model was therefore extended into a bi-factor model by allowing all the items to load onto a broad, general ethical leadership factor in addition to one of

the five specific factors (or dimensions). The bi-factor model showed close fit, which was supported by several fit statistics.

In addition to the analyses mentioned above, discriminant validity was established for each subscale of the ELBS. To conclude, the power associated with the test of close fit was evaluated, and the analysis was deemed to be sufficiently powerful.

The next Chapter will summarise the findings of Chapter 4. From this summary, practical implications and recommendations for future research will be given. Chapter 5 will also include a discussion of the limitations of the study and provide concluding remarks.

CHAPTER 5
RECOMMENDATIONS AND CONCLUSIONS

5.1. INTRODUCTION

Stories of fraud and corruption dominate the South African news. Widespread unethical behaviour puts thousands of jobs at risk and brands South Africa as a country with no moral compass. One possible strategy to combat this issue would be to raise ethical leaders in South African organisations. Leaders are crucial to the functioning of any organisation as they set the ethical tone of the organisation by acting as a role model for desired behaviour to employees. Ultimately, South Africa needs steadfast moral leadership. This study aimed to address the need for ethical leaders by developing a valid and reliable measure that would be relevant to the South African context.

The research methodology of the study was discussed in Chapter 3 of the study, followed by the discussion of the results obtained during the data analysis in Chapter 4. Subsequently, Chapter 5 will provide a summary of the research findings, explain the practical implications thereof, and identify some limitations and suggestions for future research.

5.2. SUMMARY OF RESEARCH FINDINGS

Firstly, the researcher had to establish whether the ELBS could be considered internally reliable and valid. For this purpose, item analysis and dimensionality analysis were done via SPSS. Subsequently, LISREL8.8 was used to test the fit of the measurement model by using CFA.

5.2.1. Summary of Item Analysis and Dimensionality Analysis

During item analysis, it was established that all the subscales obtained Cronbach alphas varying from .96 to .98, and which clearly surpassed the critical cut-off value for research purposes (>.70) (Nunnally, 1978). All the subscales had item-total correlations, which exceeded the criterion of .30 (Pallant, 2010). Interestingly, the means of the items showed a trend to be slightly higher than expected. This can be explained by the sensitive nature of the construct being measured. Participants

tended to give their leader a more favourable rating on ethical leadership, perhaps because it is more socially desirable to do so. None of the items of the ELBS was deleted during the item analyses.

The dimensionality analysis, or EFA, aimed to establish whether each one of the five latent ethical leadership dimensions had a single underlying factor. This was established by using principal-axis factor analysis with oblique rotation. The assumption of unidimensionality was met for each one of the five dimensions.

5.2.2. Summary of Confirmatory Factor Analysis

After defining the ethical leadership construct and developing the ELBS, the measurement model was fitted to the data. The overall fit of the model was evaluated by using various fit indices. The initial model did not show exact fit nor close fit. There were, however, signs of the presence of a broad, general ethical leadership factor. Subsequently, a bi-factor model of ethical leadership was proposed and fitted to the data. The bi-factor model showed close fit and therefore provided a close estimation of how the ethical leadership construct is expressed. This finding was corroborated with various fit indices (See Table 4.16).

In summary, the following was established: (a) The measurement model could closely reproduce the covariances that were observed between the items compromising each of the sub-scales; (b) The factor loadings for most of the ELBS items in each of their latent ethical leadership dimensions were significant (p<.05) and large (λ_{ij}>.50); (c) The factor loadings for all the ELBS items loaded significantly (p<.05) and substantially (λ_{ij}>.50) on the general factor of ethical leadership; (d The measurement error variance that was associated with each item was sufficiently small; (e) The latent ethical leadership dimensions explained large proportions of the variance in their representative items; and (f) The latent ethical leadership dimensions showed low to moderate correlations with one another, therefore providing evidence of discriminant validity.

It can be concluded from the bi-factor CFA results that the measurement model of the ELBS fitted the data reasonably well (e.g. RMSEA = .0451; p > .05; Standardised RMR

= .0366). These results provided evidence of the construct validity of the ELBS, which supported the substantive research hypothesis.

5.2.3. Comparison of The Results of the Study with Existing Measures of Ethical Leadership

Chapter 2 gave a detailed overview of the existing scales of ethical leadership. To establish whether the ELBS adds value to the current literature of ethical leadership, a comparison is drawn between the dimensions of the ELBS and related dimensions of existing ethical leadership scales (See Table 5.1).   The ELBS sufficiently incorporates the subscales of existing multi-dimensional measures of ethical leadership. Furthermore, the ELBS makes a contribution to current research through the development of new items measuring ethical leadership.

Considering this comparison, it may be concluded that the ELBS is a unique measure of ethical leadership and probably one of the most comprehensive scales available today.

Table 5.1

Comparison of the dimensions of the ELBS with related dimensions of existing Ethical Leadership scales

ELBS Dimension	Related dimension	Source
Morality	Concern for Morality and Fairness	Preliminary ELW of De Hoogh and Den Hartog (2008)
	Fairness	ELW of Kalshoven, Den Hartog and De Hoogh (2011); Measure of CEO Leadership of Eisenbeiss, Van Knippenberg and Fahrbach (2015)
	Leading with courage, integrity and sensitivity; Creating and sharing ethical vision; Stimulating across boundaries; Encouraging ethical behaviour	ELI of Spangenberg and Theron (2005)

	Integrity	ELW of Kalshoven, Den Hartog and De Hoogh (2011); Eisenbeiss, Van Knippenberg and Fahrbach (2015)
Compassion	People Orientation	ELW of Kalshoven, Den Hartog and De Hoogh (2011); Measure of CEO Leadership of Eisenbeiss, Van Knippenberg and Fahrbach (2015)
	Moderation	Measure of CEO Leadership of Eisenbeiss, Van Knippenberg and Fahrbach (2015)
	Concern for morality and fairness; Leading with courage, integrity and sensitivity	ELI of Spangenberg and Theron (2005)
Ethical envisioning	Creating and Sharing Ethical Vision; Stimulating across boundaries; Enabling the leader and the unit to implement the ethical vision	ELI of Spangenberg and Theron (2005)
	Concern for sustainability	ELW of Kalshoven, Den Hartog and De Hoogh (2011)
	Responsibility	Measure of CEO Leadership of Eisenbeiss, Van Knippenberg and Fahrbach (2015)
Ethical Empowerment	Power sharing	Preliminary ELW of De Hoogh and Den Hartog (2008); ELW of Kalshoven, Den Hartog and De Hoogh (2011)
	Encouraging ethical behaviour; Enabling the leader and the unit to implement the ethical vision	ELI of Spangenberg and Theron (2005)
	Fairness	Measure of CEO Leadership of Eisenbeiss, Van Knippenberg and Fahrbach (2015); ELW of

		Kalshoven, Den Hartog and De Hoogh (2011)
Managing Ethics	Enabling the leader and the unit to implement the ethical vision; Leading ethical initiatives and rewarding ethical contributions; Encouraging ethical behaviour	Spangenberg & Theron, 2005)
	Role Clarification	Preliminary ELW of De Hoogh and Den Hartog (2008); ELW of Kalshoven, Den Hartog and De Hoogh (2011)
	Ethical guidance	ELW of Kalshoven, Den Hartog and De Hoogh (2011)
	Fairness	ELW of Kalshoven, Den Hartog and De Hoogh (2011); Eisenbeiss, Van Knippenberg and Fahrbach (2015)

5.3. PRACTICAL IMPLICATIONS

This study has established the urgent need for ethical leaders in South African organisations. Although it was revealed that the ELBS is a reliable and potential valid measure of ethical leadership, it is still in its infancy compared to other well-established leadership questionnaires. Therefore, it is suggested that the ELBS should first be used as a developmental tool within organisations. Practically, leaders could complete the ELBS as a pre- and post-test when undergoing leadership coaching and ethics training.

Having specific knowledge available regarding their ethical behaviour would be hugely beneficial to leaders in improving self-awareness of their ethical strengths and developmental areas. As the ELBS is a multidimensional measure, leaders would also be able to identify specific areas within the ethical leadership style that they need to develop, which facilitates a targeted approach to learning and development.

Enabling leaders to assess and develop their ethical behaviour would indirectly influence the behaviour of their followers. In the long term, this would likely result in a strong ethical organisational culture.

5.4. LIMITATIONS

This study was successful regarding its primary goal of developing a valid and reliable measure of ethical leadership. However, no research is without its limitations. The first significant limitation relates to the sample of the study, which was not considered representative of the South African population. Essentially this means that the findings of the study cannot be generalised to the South African population. South Africans are also significantly diverse, yet the questionnaire was only available in English.

Another limitation of the study is that the ELBS is only available in 'other-rater' format, which made this a single-source study. Although leadership is in the eye of the beholder, it would be beneficial to compare other-ratings with the leader's perceptions of his/her standing on ethical leadership. This knowledge would help the leader to identify developmental areas that were not known to himself/herself. A self-rating scale would thus enable a 360-degree evaluation that would increase development opportunities and make the ELBS more useful in the selection of ethical leaders.

Although the ELBS did not aim to explain leadership in general, this could be considered a limitation of the study. The ELBS currently assumes that the leader being rated already possesses general leadership competencies. However, this is not always the case in the corporate world. It is therefore strongly suggested that the ELBS should be used in conjunction with an assessment of general leadership behaviour and capability.

5.5. SUGGESTIONS FOR FUTURE RESEARCH

Drawing from the discussion of the limitations of the ELBS it is suggested that future studies examine cultural differences in the way the ethical leadership construct manifests. In this regard, it would be necessary to investigate measurement bias using multi-group SEM. As the ELBS is destined explicitly for use in a diverse South African

context, it is imperative that the instrument should not demonstrate a bias towards any cultural group of the South African population.

A social desirability scale needs to be included in the ELBS. The research results suggested that participants may tend to overrate their leaders on ethical leadership. If this is true, it would be beneficial to include a social desirability 'check' for interpretation of the ELBS scores, to ensure accurate results.

Another suggestion for future research would be to standardise the ELBS for use as a selection tool. This would also mean that the instrument needs to be adapted to a self-assessment.

It is suggested that the ELBS should be further validated through an ethical leadership structural model. There is a growing research trend in examining the antecedents and consequences of ethical leadership in organisations. Examples include the relationship between ethical leadership and pro-organisational behaviour (Miao, Newman, Yu, J & Xu, 2013); job performance (Bello, 2012); promotability (Rubin, Dierdorff & Brown, 2010); innovation and creativity (Chen & Hou, 2016).

5.6. CONCLUSION

This chapter provided a summary of the research findings, explained the practical implications thereof, and identified suggestions for future research on ethical leadership. Overall, it seems that the study has reached the objectives it set out to achieve and will hopefully add value to South African organisations. Moreover, strong ethical leaders may be present in organisations, but their impact will be limited if employees continually tolerate corruption and ethical scandals by employers. It is time for ethical leaders to stand up for organisational change towards justice. It is time for employees to stop tolerating leaders who lie and deceive. It is time for South Africa to unite against unethical practices. It is time that we defeat darkness with light.

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APPENDIX A

DIMENSION CONCEPTUALISATION

The following document illustrates the process followed by the researcher in identifying dimensions of the Ethical Leadership Behavioural Scale (ELBS). Note that this document was compiled before the integration of the Quasi-Delphi feedback, therefore there will be differences between this document and the suggested dimensions (and their definitions) shown in Chapter 3.

DIMENSION	ADAPTED FROM		(KEYWORDS)	DEFINITION OF NEW DIMENSION
	EXISTING DIMENSION	RELEVANT ELEMENTS OF DEFINITION		
1. Ethical envisioning	*Creating and Sharing Ethical Vision* (Spangenberg & Theron, 2005)	Understanding the ethical dynamics in the external and internal environments. Diagnoses ethical dynamics in the external and internal environments to develop an ethical vision. 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 of people.	• Creating an inspirational ethical vision. • Employee commitment to the ethical vision. • Strategies to achieve the ethical vision. • Communicating ethical vision organisation wide. • Builds an ethical culture in the organisation. • Builds the ethical image and reputation of the	The crafting of an ethical organisational vision that inspires organisation-wide values and principles, thereby setting a high standard of honourable conduct. Communicating the vision with confidence so that it is willingly adopted by employees. Developing a workable, sustainable strategy: making individual and collective roles clear in the execution and implementation of the ethical

DIMENSION	ADAPTED FROM		(KEYWORDS)	DEFINITION OF NEW DIMENSION
	EXISTING DIMENSION	RELEVANT ELEMENTS OF DEFINITION		
		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 to the vision. Conceptualizing ethical strategy. Defines strategic ethical issues clearly. Builds strategies and plans based on thorough problem analysis and broad-based-fact-finding.	organisation to external stakeholders. • Environmental conservation. • Concerned about community. • Responsible leadership.	vision; and ensuring sustainability through environmental conservation, social responsibility, and responsible leadership. Building a recognisable ethical organisational brand and fostering a sound ethical culture within the organisation.
	Stimulating across boundaries (Spangenberg & Theron, 2005)	Helps people to see the ethical big picture. Maintains productive relationships with external stakeholders and builds the ethical image of the organisation.		

DIMENSION	ADAPTED FROM		(KEYWORDS)	DEFINITION OF NEW DIMENSION
	EXISTING DIMENSION	RELEVANT ELEMENTS OF DEFINITION		
	Concern for sustainability (Kalshoven, Den Hartog & De Hoogh, 2001)	Whether the leader cares for the environment and stimulates acts to conserve it, such as recycling.		
	Responsibility (Eisenbeiss, Van Knippenberg & Fahrbach, 2015)	Having a long-term focus on organisational success, valuing sustainable relationships with business partners, being concerned about the community, and protecting the environment.		
	Enabling the leader and the unit to implement the ethical vision (Spangenberg & Theron, 2005)	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.		

DIMENSION	ADAPTED FROM		(KEYWORDS)	DEFINITION OF NEW DIMENSION
	EXISTING DIMENSION	RELEVANT ELEMENTS OF DEFINITION		
2. Morality	*Concern for morality and fairness* (De Hoogh & Den Hartog, 2008)	Includes ethical leadership behaviours such as honesty, trustworthiness, and fairness.	• Acting with integrity/honesty. • Fairness. • Ethical role modelling. • Show courage in ethical behaviour. • Trustworthinesss	Demonstrating unquestionable moral character and preserving a virtuous reputation. Consistently showing one's personal conviction of sound principles such as honesty, integrity, fairness, and inclusivity through alignment of personal behaviour. Being perceived as trustworthy and keeping the promises one has made. Being perceived as someone with uncompromising character, and showing courage in making tough, principled decisions. Considering the ethical implications of actions and intentionally acting as a role model for ethical behaviour

| DIMENSION | ADAPTED FROM | | *(KEYWORDS)* | DEFINITION OF NEW DIMENSION |
	EXISTING DIMENSION	RELEVANT ELEMENTS OF DEFINITION		
	Fairness (Kalshoven, Den Hartog, & De Hoogh, 2011)	Treating others in a way that is right and equal, making principled and fair choices and not to practise favouritism.		
	Fairness (Eisenbeiss, Van Knippenberg, & Fahrbach, 2015)	Principled decision-making, no practice of favouritism or discrimination.		
	Leading with courage, integrity and sensitivity (Spangenberg & Theron, 2005)	Acting honestly and with integrity. Honestly manages the organisational unit and consistently lives out the values embedded in the vision. Considers ethical implications of decisions, assures agreed upon values are adhered to and deals honestly with all stakeholders.		

DIMENSION	ADAPTED FROM		(KEYWORDS)	DEFINITION OF NEW DIMENSION
	EXISTING DIMENSION	RELEVANT ELEMENTS OF DEFINITION		
		Decisiveness and hardiness Acts decisively and makes tough ethical decisions.		
	Integrity (Eisenbeiss, Van Knippenberg & Fahrbach, 2015)	Leader word-deed alignment, trustworthiness and the ability to determine and engage in morally right behaviour.		
	Integrity (Kalshoven, Den Hartog & De Hoogh, 2011)	Consistency of words and deeds. Following through with the promises that one has made.		
	Creating and sharing ethical vision (Spangenberg & Theron, 2005)	Building trust in the leader and the unit. The leader creates trust in him/herself and builds confidence in the unit.		

DIMENSION	ADAPTED FROM		(KEYWORDS)	DEFINITION OF NEW DIMENSION
	EXISTING DIMENSION	RELEVANT ELEMENTS OF DEFINITION		
	Stimulating across boundaries (Spangenberg & Theron, 2005)	Recognises his/her duty to serve as an ethical role model.		
	Encouraging ethical behaviour (Spangenberg & Theron, 2005)	Challenges current thinking about ethics.		
3. Compassion	*People Orientation* (Kalshoven, Den Hartog, De Hoogh, 2011)	Caring about, and respecting and supporting followers.	• Empathy. • Consideration. • Benevolence/caring. • Show respect to others. • Altruism. • Show humility (Moderation).	Creating and maintaining productive interpersonal relationships without moral compromise. Respects and values others through consistent care, benevolence, empathy and altruism. Avoids harm to others and protects their rights and

DIMENSION	ADAPTED FROM		(KEYWORDS)	DEFINITION OF NEW DIMENSION
	EXISTING DIMENSION	RELEVANT ELEMENTS OF DEFINITION		
				dignity. Carefully considering others' needs, being temperate and humble in making decisions that affect others (e.g. Ubuntu).
	People orientation (Eisenbeiss, Van Knippenberg & Fahrbach, 2015)	Treating other people with respect, compassion, altruism, supporting and not harming others or violating their rights.		
	Moderation (Eisenbeiss, Van Knippenber & Fahrbach, 2015)	Being temperate and considerate, not always occupying the focus of attention, and finding a balance between extreme ideas, behaviours, decisions and goals.		
	Concern for morality and fairness	Whether the leader cares for followers.		

DIMENSION	ADAPTED FROM		(KEYWORDS)	DEFINITION OF NEW DIMENSION
	EXISTING DIMENSION	RELEVANT ELEMENTS OF DEFINITION		
	Concern for morality and fairness			
	Concern for morality and fairness (Spangenberg & Theron, 2005)	Demonstrating interpersonal sensitivity. Considers the needs, feelings and dignity of others. Works toward maintaining productive interpersonal relations.		
4. Ethical empowerment	*Power sharing* (De Hoogh & Den Hartog, 2008)	Providing followers with voice.	• Allow participation in decision making. • Active listening to stakeholders • Is committed to ethical self-development. • Encouraging continuous ethical learning/training.	Equips employees to deal with ethical dilemmas through continuous learning and training. Promotes ownership and shared responsibility by giving employees decision-making power, providing them with voice, and access to information. Actively listens and considers

DIMENSION	ADAPTED FROM		(KEYWORDS)	DEFINITION OF NEW DIMENSION
	EXISTING DIMENSION	RELEVANT ELEMENTS OF DEFINITION		
				employees' ideas and concerns about ethical practices, and discusses ethics with followers. Is committed to ethical self-development and growth.
	Power sharing (Kalshoven, Den Hartog, & De Hoogh, 2011)	Allowing followers a say in decision making and listening to their ideas and concerns.		
	Encouraging ethical behaviour (Spangenberg & Theron, 2005)	Promotes continuous ethical learning. Inspiring people towards ethical behaviour. Raises the aspirations of followers and builds confidence in them to perform effectively and ethically.		
	Enabling the leader and the unit to	Enabling the leader Identifies challenging opportunities for self-development and is		

DIMENSION	ADAPTED FROM		(KEYWORDS)	DEFINITION OF NEW DIMENSION
	EXISTING DIMENSION	RELEVANT ELEMENTS OF DEFINITION		
	implement the ethical vision (Spangenberg & Theron, 2005)	committed to continuous learning. Appreciates feedback and has good insight into his/her own ethical identity, capabilities and behaviour. Is committed to continuous learning. Empowering followers Encourages followers to accept responsibility for their own ethical learning and growth. Creates conditions which allow them the opportunity to make meaningful decisions.		
	Fairness (Eisenbeiss et al. 2015)	Equal access to information.		
5. Managing ethics	*Enabling the leader and the unit to implement the ethical vision*	Formulating and implementing ethical structures and systems Adapts structures, processes and procedures to support	• Implementing ethical strategies/structures/systems (e.g. code of ethics) • Ethical decision making	Continuously monitors and evaluates business practices and decisions against organisational ethical vision, values and principles. Monitors and

DIMENSION	ADAPTED FROM		(KEYWORDS)	DEFINITION OF NEW DIMENSION
	EXISTING DIMENSION	RELEVANT ELEMENTS OF DEFINITION		
	(Spangenberg & Theron, 2005)	implementation of ethical strategy in a changing environment. Implements ethical structures and systems, for example a code of ethics, an ombudsman, ethics committee, and ethics training programme.	• Encourages/inspires/rewards ethical behaviour • Rewarding ethical behaviour through performance management • Discipline unethical behaviour • Facilitates the solving of ethical dilemmas • Encourage follower commitment to ethical vision • Coaching/mentoring/training ethics • Discussing ethical issues and norms with followers • Managing cultural diversity	evaluates the effectiveness of ethical structures and systems (e.g. ethics code and ethics hotline). Reinforces ethical behaviour through recognition and rewards. Disciplines unethical conduct fairly and consistently. Facilitates the solving of tough ethical dilemmas and is always available as an ethics coach and/or mentor. Actively manages cultural diversity and promotes equity in the workplace.
	Leading ethical initiatives and rewarding	Planning and implementing ethical initiatives Ensures that ethical expectations of the unit and its members are		

DIMENSION	ADAPTED FROM		(KEYWORDS)	DEFINITION OF NEW DIMENSION
	EXISTING DIMENSION	RELEVANT ELEMENTS OF DEFINITION		
	ethical contributions (Spangenberg & Theron, 2005)	clarified, and that ethical initiatives are designed and aligned with ethical and business strategies. Reviewing ethical initiatives and behaviour. Reviews the outcomes of unit, team, and employee ethical initiatives. Provides specific feedback to followers in order to help them assess their own contribution to these initiatives. Rewarding ethical contributions and behaviours Gives recognition for accomplishing ethical initiatives as well as for exemplary work-related attitudes and behaviour; celebrates ethical success.		
	Role Clarification	The degree to which the ethical leader promotes and rewards		

DIMENSION	ADAPTED FROM		(KEYWORDS)	DEFINITION OF NEW DIMENSION
	EXISTING DIMENSION	RELEVANT ELEMENTS OF DEFINITION		
	(De Hoogh and Den Hartog, 2008)	ethical conduct, and their degree of transparency in the workplace		
	Role clarification (Kalshoven, Den Hartog, & De Hoogh, 2011)	Clarification of responsibilities, expectations and performance goals.		
	Ethical guidance (Kalshoven, Den Hartog, & De Hoogh, 2011)	Communication about ethics, explaining ethical rules, promoting and rewarding ethical conduct.		
	Encouraging ethical behaviour	Reconsiders and improves current practices on an ethical basis.		

DIMENSION	ADAPTED FROM		(KEYWORDS)	DEFINITION OF NEW DIMENSION
	EXISTING DIMENSION	RELEVANT ELEMENTS OF DEFINITION		
	(Spangenberg & Theron, 2005)			

APPENDIX B

QUASI-DELPHI RATING FORM

The following document was distributed to the Quasi-Delphi respondents to give feedback on both the suggested dimensions, their definitions, as well as the items of the ELBS.

Introduction

Dear participant, you have been approached to give inputs regarding the development of the Ethical Leadership Behaviour Scale (ELBS) as you are regarded a knowledgeable professional in the field of ethics and leadership. Our aim with this questionnaire is to be able to identity whether a leader operates with an ethical leadership style. In this sense, it is important to understand that this

scale is not designed to assess general leadership behaviours (e.g. delegation, communication) rather it assesses leadership behaviours specific to an ethical leader.

Instructions

You are asked to critically evaluate the contents of this preliminary questionnaire and provide any feedback that will improve the Ethical Leadership Behaviour Scale (ELBS). We would appreciate feedback that is **constructive, critical, clear, and specific.**

Note the following:

- You are free to alter the document in any way for feedback purposes (e.g. highlight, change font colours, strikethroughs, underlining, track changes, or comments).
- Dimensions and items may be rewritten in the 'Comments' section provided in each section.
- Kindly familiarise yourself with the rating scale used throughout the document, as explained below. NB: if an item or dimension is rated as 1 or 2, please **motivate** in the space provided for 'Comments'.

Rating	Description	Meaning
1	Irrelevant	The item/dimension is not related to Ethical Leadership in any way. It is not appropriate for use in the questionnaire and should be deleted.
2	Useful, but not essential	This item/dimension represents some part of Ethical Leadership, but it would not be missed if excluded from the questionnaire. There might be items/dimensions that are more relevant, appropriate or critical than this item/dimension.
3	Essential, must be included	This is a critically important item/dimension. Without it, the questionnaire would not accurately represent the construct of Ethical Leadership. This item/dimension should be included in the final questionnaire.

This questionnaire is made up of two sections: Section One relates to the proposed dimensions of ethical leadership; Section Two deals with the proposed items to measure ethical leadership. Each section has its own unique instructions in addition to these general instructions. We have also provided space for any general feedback or suggestions at the end of this document.

Section One: Dimensions

The following dimensions are proposed to represent the construct of Ethical Leadership. Use the rating scale below to rate each dimension (please mark with X). Below is a graphic illustration of all the suggested dimensions for inclusion in the Ethical Leadership Behaviour Scale.

Scale Dimensions

1. Morality
2. Compassion
3. Ethical Envisioning
4. Ethical Empowerment
5. Managing Ethics

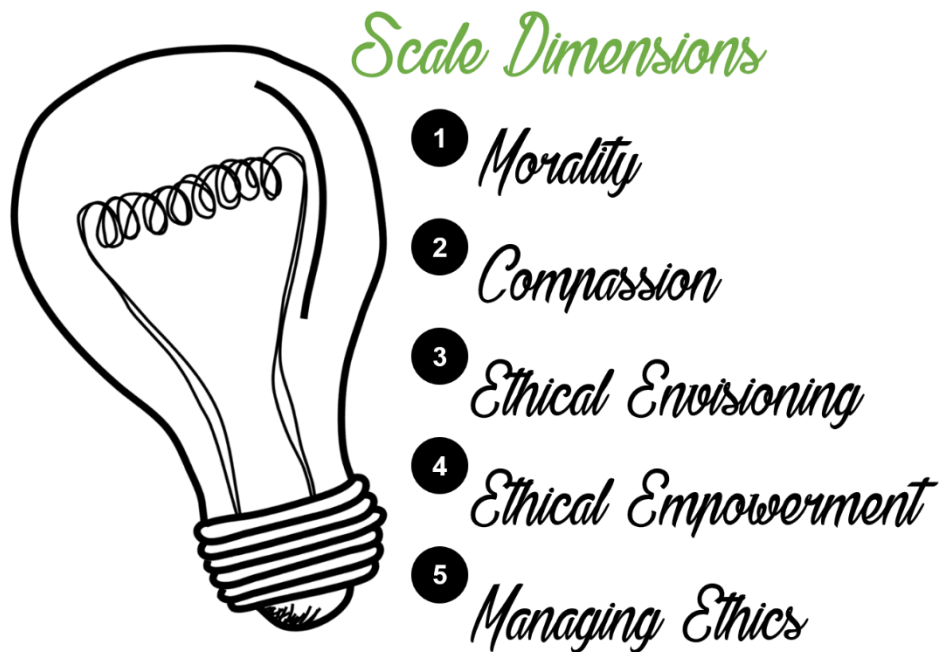| Rating	Description	Meaning
1	Irrelevant	The item/dimension is not related to Ethical Leadership in any way. It is not appropriate for use in the questionnaire and should be deleted.
2	Useful, but not essential	This item/dimension represents some part of Ethical Leadership, but it would not be missed if excluded from the questionnaire. There might be items/dimension that are more relevant, appropriate or critical than this item/dimension.
3	Essential, must be included	This is an essential item/dimension. Without it, the questionnaire would not accurately represent the construct of Ethical Leadership. This item/dimension should be included in the final questionnaire.

Dimension	Definition	Rating			Comments
		Irrelevant	Useful	Essential	
Morality	Demonstrating unquestionable moral character and preserving a virtuous reputation. Consistently showing one's personal conviction of sound principles such as honesty, integrity and fairness. Being perceived as trustworthy and keeping the promises one has made. Being perceived as someone with uncompromising character, and showing courage in making tough, principled decisions. Considering the ethical implications of actions and intentionally acting as a role model for ethical behaviour.	1	2	3	
Compassion	Respects and values others through consistent care, benevolence, empathy and altruism. Avoids harm to others and protects their rights and dignity. Carefully considering others' needs, being temperate and humble in making decisions that affect others (e.g. Ubuntu).	1	2	3	

Ethical Envisioning	The crafting of an ethical organisational vision that inspires organisation-wide values and principles, thereby setting a high standard of honourable conduct. Communicating the vision with confidence so that it is willingly adopted by employees. Developing a workable, sustainable strategy: making individual and collective roles clear in the execution and implementation of the ethical vision; and ensuring sustainability through environmental conservation, social responsibility, and responsible leadership. Building a recognisable ethical organisational brand and fostering an ethical culture within the organisation.	1	2	3	
Ethical Empowerment	Equips employees to deal with ethical dilemmas through continuous learning and training. Promotes ownership and shared responsibility by giving employees decision-making power, providing them with voice, and access to information. Is committed to ethical development and growth.	1	2	3	

Managing Ethics	Continuously monitors and evaluates business practices and decisions against organisational ethical vision, values and principles. Monitors and evaluates the effectiveness of ethical structures and systems (e.g. ethics code and ethics hotline). Reinforces ethical behaviour through recognition and rewards. Disciplines unethical conduct fairly and consistently. Facilitates the solving of tough ethical dilemmas and is always available as an ethics coach and/or mentor. Actively manages cultural diversity and promotes equity in the workplace.	1	2	3	

Additional Questions

Are there any elements or dimensions of ethical leadership that are **absent** in our conceptualisation, and that needs to be included?

Answer here.

Are there any elements or dimensions of ethical leadership that are **excessive** in our conceptualisation, and that needs to be excluded?

Answer here.

Do you have any additional comments?

Answer here.

Section Two: Items

The following items are proposed to measure each dimension of Ethical Leadership. Use the rating scale below to rate each item.

Consider the following criteria for evaluating each item and use the 'Comments' section to make notes.

- Does the item 'fit in' with the behaviour described in the definition of the dimension? Should the item be moved to another dimension?
- Is the item clear and unambiguous?
- Is the language of the item clear enough for someone with a Grade 12 level English to understand?
- Can the behaviour assessed by the items be observed by others?
- Can each item be rated on a 6-point Likert scale (0=Never; 1=Very Seldom; 2=Seldom; 3=Occasionally; 4=Often; 5=Always)
- Does each item assess only one construct?
- Does each item assess a unique construct which is not measured by any other listed for a specific dimension? If there is duplication, which is the stronger item?

Dimension: Morality

Demonstrating unquestionable moral character and preserving a virtuous reputation.   Consistently showing one's personal conviction of sound principles such as honesty, integrity and fairness. Being perceived as trustworthy and keeping the promises one has made. Being perceived as someone with uncompromising character, and showing courage in making tough, principled decisions. Considering the ethical implications of actions and intentionally acting as a role model for ethical behaviour.

Items	Irrelevant	Useful but not essential	Essential, must be included	Comments
1. My supervisor/manager practices the moral values (e.g. integrity, honesty, fairness) that he/she preaches.	1	2	3	
2. Employees will remember my supervisor/manager as a leader of ethics.	1	2	3	
3. My supervisor/manager does the right thing.	1	2	3	
4. My supervisor/manager acts as an honourable (moral) person.	1	2	3	
5. My supervisor/manager acts as someone with an ethical reputation.	1	2	3	
6. My supervisor/manager treats employees fairly.	1	2	3	
7. My supervisor/manager shows a strong concern for ethical and moral values.	1	2	3	
8. My supervisor/manager demonstrates honesty and integrity as important personal values.	1	2	3	
9. My supervisor/manager conducts his/her work life in an ethical manner.	1	2	3	

10. My supervisor/manager acts honestly and with integrity.	1	2	3	
11. My supervisor/manager can be trusted to tell the truth.	1	2	3	
12. My supervisor/manager can be trusted.	1	2	3	
13. My supervisor/manager keeps his/her promises.	1	2	3	
14. My supervisor/manager can be trusted to do the things he/she says.	1	2	3	
15. My supervisor/manager can be relied on to honour his/her commitments.	1	2	3	
16. My supervisor/manager has the courage to change a deeply held opinion when he/she recognises that he/she is wrong.	1	2	3	
17. My supervisor/manager is not afraid to address unethical behaviour.	1	2	3	
18. My supervisor/manager places service to others above power (authority) and self-enrichment.	1	2	3	
19. My supervisor/manager would not compromise his/her integrity.	1	2	3	
20. My supervisor/manager is firm in maintaining his/her ethical principles.	1	2	3	
21. My supervisor/manager has the courage to do the right thing.	1	2	3	
22. My supervisor/manager's decisions are in line with ethical values (e.g. integrity, fairness).	1	2	3	

23. My supervisor/manager insists on doing what is fair and ethical even when it is not easy.	1	2	3
24. My supervisor/manager acknowledges mistakes and takes responsibility for them.	1	2	3
25. When making decisions, my supervisor/manager asks "what is the right thing to do?"	1	2	3
26. My supervisor/manager acts decisively and makes tough ethical decisions.	1	2	3
27. My supervisor/manager does not allow others to pressure them into acting unethically.	1	2	3
28. My supervisor/manager will do the right thing, even if it makes him/her unpopular.	1	2	3
29. My supervisor/manager upholds his/her ethics in a respectful way.	1	2	3
30. My supervisor/manager is the ideal example (role model) of ethical behaviour.	1	2	3
31. Concerning ethics, my supervisor/manager is a good role model.	1	2	3
32. Employees admire my supervisor/manager as an ethical person.	1	2	3
33. My supervisor/manager sets an example of ethical behaviour in his/her decisions and actions.	1	2	3

34. My supervisor/manager keeps his/her actions consistent with his/her stated ethical values (e.g. honesty, integrity).	1	2	3	
35. My supervisor/manager demonstrates good insight into his/her own ethical behaviour.	1	2	3	

Dimension: Compassion

Respects and values others through consistent care, benevolence, empathy and altruism. Avoids harm to others and protects their rights and dignity. Carefully considering others' needs, being temperate and humble in making decisions that affect others (e.g. Ubuntu).

Items	Irrelevant	Useful but not essential	Essential, must be included	Comments
1. My supervisor/manager treats employees kindly.	1	2	3	
2. My supervisor/manager is understanding of employees' situations.	1	2	3	
3. I would feel comfortable to share my personal challenges/problems with my supervisor/manager.	1	2	3	
4. My supervisor/manager puts the needs of others above his/her own self-interest.	1	2	3	
5. My supervisor/manager is interested in how his/her employees feel and how they are doing.	1	2	3	
6. My supervisor/manager takes time for personal contact with employees.	1	2	3	

	1	2	3	
7. My supervisor/manager pays attention to my personal needs.	1	2	3	
8. My supervisor/manager is genuinely concerned about employees' personal development.	1	2	3	
9. My supervisor/manager sympathises with me when I have problems.	1	2	3	
10. My supervisor/manager demonstrates interpersonal sensitivity (empathy).	1	2	3	
11. My supervisor/manager shows that he/she cares about employees.	1	2	3	
12. My supervisor/manager helps and supports others.	1	2	3	
13. My supervisor/manager allows employees to share in the team's success.	1	2	3	
14. My supervisor/manager treats employees with dignity and respect.	1	2	3	
15. My supervisor/manager is a team player.	1	2	3	
16. My supervisor/manager invests in the development of the community.	1	2	3	
17. My supervisor/manager acts selflessly.	1	2	3	
18. My supervisor/manager helps people in need.	1	2	3	
19. My supervisor/manager is concerned about the wellbeing of others.	1	2	3	

	1	2	3	
20. My supervisor/manager does not exploit or manipulate employees.	1	2	3	
21. My supervisor/manager does not take advantage of employees.	1	2	3	
22. My supervisor/manager does not insult employees.	1	2	3	
23. My supervisor/manager would not do anything to intentionally harm anyone else.	1	2	3	
24. My supervisor/manager respects the human rights of employees.	1	2	3	
25. My supervisor/manager acts with the best interests of employees in mind.	1	2	3	
26. My supervisor/manager considers the needs, feelings and dignity of employees.	1	2	3	
27. My supervisor/manager stands up for employees.	1	2	3	
28. My supervisor/manager does not let his/her self-interest influence decision making.	1	2	3	
29. My supervisor/manager gives credit to employees who contributed to successful outputs.	1	2	3	
30. My supervisor/manager thinks that he/she is an ordinary (humble) person who is no better than others.	1	2	3	
31. My supervisor/manager would not want people to treat him/her as though he/she were superior to them.	1	2	3	

32. My supervisor/manager makes principled and objective decisions.	1	2	3	

Dimension: Ethical Envisioning

The crafting of an ethical organisational vision that inspires organisation-wide values and principles, thereby setting a high standard of honourable conduct. Communicating the vision with confidence so that it is willingly adopted by employees. Developing a workable, sustainable strategy: making individual and collective roles clear in the execution and implementation of the ethical vision; and ensuring sustainability through environmental conservation, social responsibility, and responsible leadership. Building a recognisable ethical organisational brand and fostering an ethical culture within the organisation.

Items	Irrelevant	Useful but not essential	Essential, must be included	Comments
Items	1	2	3	
1. My supervisor/manager ensures that the organisational vision is morally sound.	1	2	3	
2. The vision of my supervisor/manager inspires employees to be responsible and reliable members of the organisation.	1	2	3	
3. My supervisor/manager emphasises the ethical elements of our organisation's vision.	1	2	3	
4. My supervisor/manager ensures that our organisational strategy has an ethical basis.	1	2	3	
5. My supervisor/manager understands ethical issues in the external and internal environments of the organisation.	1	2	3	

6. My supervisor/manager helps to develop a collective ethical vision for our organisation.	1	2	3	
7. My supervisor/manager's vision builds trust in our organisation.	1	2	3	
8. My supervisor/manager is enthusiastic about the organisation's ethical vision.	1	2	3	
9. My supervisor/manager shows confidence in the ethical vision of the organisation.	1	2	3	
10. My supervisor/manager publicly promotes the organisation's values, standards and vision.	1	2	3	
11. My supervisor/manager communicates clear ethical standards for the organisation.	1	2	3	
12. My supervisor/manager opposes the use of unethical practices (e.g. corruption, dishonesty) to increase organisational performance.	1	2	3	
13. My supervisor/manager creates trust in the organisation.	1	2	3	
14. My supervisor/manager inspires confidence and commitment to the ethical values of the organisation.	1	2	3	
15. My supervisor/manager ensures that the organisation is sustainably profitable.	1	2	3	
16. My supervisor/manager promotes the organisation's green (ecological) behaviour (e.g. save water, electricity, recycling).	1	2	3	

17. My supervisor/manager supports local communities and non-profit organisations.	1	2	3	
18. My supervisor/manager makes employees' role clear in executing the organisation's ethical strategy.	1	2	3	
19. My supervisor/manager ensures that the organisation operates in good faith when dealing with clients.	1	2	3	
20. My supervisor/manager considers ethical standards when dealing with clients.	1	2	3	
21. My supervisor/manager shows responsibility for the society.	1	2	3	
22. My supervisor/manager builds long-term relationships with business partners.	1	2	3	
23. My supervisor/manager shows a long-term orientation of organisational success.	1	2	3	
24. My supervisor/manager protects the welfare of future generations.	1	2	3	
25. My supervisor/manager ensures that the organisation is socially responsible.	1	2	3	
26. My supervisor/manager creates the opportunity for employees for social engagement (community outreaches).	1	2	3	
27. My supervisor/manager enforces sustainable organisational success against short-term wins.	1	2	3	

28. My supervisor/manager realises the responsibility of the organisation to serve the society.	1	2	3	
29. My supervisor/manager measures success not only by the results obtained, but also whether the process followed was responsible and ethically sound.	1	2	3	
30. My supervisor/manager works in an environmentally friendly manner.	1	2	3	
31. My supervisor/manager shows concern for sustainability issues.	1	2	3	
32. My supervisor/manager clearly communicates the organisation's ethical vision and strategy.	1	2	3	
33. My supervisor/manager deals honestly with all stakeholders.	1	2	3	
34. My supervisor/manager helps employees to see the ethical big picture.	1	2	3	
35. My supervisor/manager influences stakeholders to ensure that things are done the right way.	1	2	3	
36. My supervisor/manager maintains sound relationships with external stakeholders and builds the ethical image of the organisation.	1	2	3	
37. My supervisor/manager plans and implements organisation-wide ethical initiatives.	1	2	3	

38. My supervisor/manager embodies the ethical vision of our organisation.	1	2	3	
39. Thanks to my supervisor/manager, our organisation is seen as ethical.	1	2	3	
40. My supervisor/manager is a noble representative of our organisation.	1	2	3	
41. My supervisor/manager builds an ethical culture and climate.	1	2	3	

Dimension: Ethical Empowerment

Equips employees to deal with ethical dilemmas through continuous learning and training. Promotes ownership and shared responsibility by giving employees decision-making power, providing them with voice, and access to information. Is committed to ethical development and growth.

Items	Irrelevant	Useful but not essential	Essential, must be included	Comments
Items	1	2	3	
1. My supervisor/manager has ethics-related discussions to facilitate learning.	1	2	3	
2. My supervisor/manager shares his/her ethical learning experiences with employees.	1	2	3	
3. My supervisor/manager challenges employees' perception of ethics to facilitate learning.	1	2	3	

	1	2	3	
4. My supervisor/manager promotes continuous ethical learning.	1	2	3	
5. My supervisor/manager gives employees the opportunity to solve tough ethical dilemmas.	1	2	3	
6. My supervisor/manager gives employees access to the information they need to do the right thing.	1	2	3	
7. My supervisor/manager is eager to listen to the ethical concerns of others.	1	2	3	
8. My supervisor/manager allows employees to participate in ethical decision making.	1	2	3	
9. My supervisor/manager encourages employees to accept responsibility for their own ethical learning and growth.	1	2	3	
10. My supervisor/manager builds confidence in employees to perform effectively and ethically.	1	2	3	
11. My supervisor/manager is open to new learning experiences in the field of ethics.	1	2	3	

Dimension: Managing Ethics

Continuously monitors and evaluates business practices and decisions against organisational ethical vision, values and principles. Monitors and evaluates the effectiveness of ethical structures and systems (e.g. ethics code and ethics hotline). Reinforces ethical behaviour through recognition and rewards. Disciplines unethical conduct fairly and consistently. Facilitates the solving of tough ethical dilemmas and is always available as an ethics coach and/or mentor. Actively manages cultural diversity and promotes equity in the workplace.

Items	Irrelevant	Useful but not essential	Essential, must be included	Comments
1. My supervisor/manager considers the ethical consequences of his/her decisions.	1	2	3	
2. My supervisor/manager expects a high standard of ethical behaviour from employees.	1	2	3	
3. My supervisor/manager ensures that ethical initiatives are designed and aligned with ethical business strategies.	1	2	3	
4. My supervisor/manager evaluates our business practices to ensure a high standard of ethics.	1	2	3	
5. My supervisor/manager ensures that the work team "walks the ethical talk."	1	2	3	
6. My supervisor/manager holds employees accountable for using ethical practices in their work.	1	2	3	
7. My supervisor/manager makes consistent decisions that are based on ethical standards.	1	2	3	
8. My supervisor/manager rewards employee performance in a fair manner.	1	2	3	

	1	2	3	
9. My supervisor/manager holds employees accountable for ethical problems over which they have control.	1	2	3	
10. My supervisor/manager reviews ethical initiatives and behaviour of employees.	1	2	3	
11. My supervisor/manager clarifies the likely negative consequences of possible unethical behaviour by employees.	1	2	3	
12. My supervisor/manager ensures that ethics codes are up-to-date and accessible to everyone.	1	2	3	
13. My supervisor/manager maintains safe reporting mechanisms (e.g. whistleblowing).	1	2	3	
14. My supervisor/manager clearly explains integrity related codes of conduct.	1	2	3	
15. My supervisor/manager clarifies integrity guidelines and rules.	1	2	3	
16. My supervisor/manager monitors that employees follow codes of ethics.	1	2	3	
17. My supervisor/manager formulates and implements ethical structures and systems.	1	2	3	
18. My supervisor/manager adapts structures, processes and procedures to support implementation of ethical strategy in a changing environment.	1	2	3	

19. My supervisor/manager implements ethical structures and systems (e.g. a code of ethics, an ombudsman, ethics committee, and ethics training programmes).	1	2	3	
20. My supervisor/manager is fair and objective when evaluating employee performance and providing rewards.	1	2	3	
21. My supervisor/manager gives recognition and compliments to employees who behave according to the ethical guidelines.	1	2	3	
22. My supervisor/manager celebrates when employees achieve ethical successes.	1	2	3	
23. My supervisor/manager disciplines unethical employees' conduct appropriately.	1	2	3	
24. My supervisor/manager gives equal treatment to any employee who acts unethically.	1	2	3	
25. My supervisor/manager does not exploit/abuse employees who act unethically.	1	2	3	
26. My supervisor/manager coaches employees in dealing with ethical dilemmas.	1	2	3	
27. My supervisor/manager inspires employees to make the right choice.	1	2	3	
28. My supervisor/manager explains what is expected from employees in terms of behaving with integrity.	1	2	3	

29. My supervisor/manager ensures that employees have an equitable (fair) workplace.	1	2	3	
30. My supervisor/manager ensures that our management processes and procedures do not discriminate unfairly.	1	2	3	
31. My supervisor/manager is fair and unbiased when assigning tasks to employees.	1	2	3	
32. My supervisor/manager manages cultural diversity effectively in the workplace.	1	2	3	
33. My supervisor/manager treats employees as valuable to the organisation.	1	2	3	
34. My supervisor/manager does not discriminate unfairly (e.g. does not practise favouritism).	1	2	3	
35. My supervisor/manager advocates inclusivity of employees from different cultural backgrounds.	1	2	3	
36. My supervisor/manager considers the impact of his/her decisions on all stakeholders.	1	2	3	
37. My supervisor/manager inspires employees to do the right thing.	1	2	3	
38. My supervisor/manager inspires employees towards ethical behaviour.	1	2	3	
39. My supervisor/manager has fair expectations from employees.	1	2	3	

40. My supervisor/manager listens carefully to what employees have to say.	1	2	3	
41. My supervisor/manager discusses business ethics or values with employees.	1	2	3	
42. My supervisor/manager clearly explains ethical issues to employees.	1	2	3	

Additional Questions

Do the current items sufficiently measure each element or dimension of ethical leadership? If not, please specify. *(If you have suggested new dimensions, please provide us with examples of items that could measure your suggested dimension.)*

Answer here.

Overall Feedback

Is there any general feedback that you would like to give regarding our new measure of ethical leadership? Are there any suggestions or comments that you would like to make?

Answer here.

Thank you!

Thank you for taking the time to complete this questionnaire,

we hope that it was a stimulating and enjoyable experience.

APPENDIX C
POWER ASSESSMENT OUTPUT

Compute Power for RMSEA

Alpha	0.05
Degrees of Freedom	2472
Sample Size	202
Null RMSEA	0.05
Alt. RMSEA	0.08

Generate R Code

```
#Power analysis for CSM

alpha <- 0.05 #alpha level
d <- 2472 #degrees of freedom
n <- 202 #sample size
rmsea0 <- 0.05 #null hypothesized RMSEA
rmseaa <- 0.08 #alternative hypothesized RMSEA
```

Submit above to Rweb	Erase R code

```
R version 3.0.2 (2013-09-25) -- "Frisbee Sailing"
Copyright (C) 2013 The R Foundation for Statistical Computing
Platform: x86_64-pc-linux-gnu (64-bit)

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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.

Rweb:> png(file= "/tmp/Rout.8303.%03d.png")
Rweb:>
Rweb:> #Power analysis for CSM
Rweb:>
Rweb:> alpha <- 0.05 #alpha level
Rweb:> d <- 2472 #degrees of freedom
Rweb:> n <- 202 #sample size
Rweb:> rmsea0 <- 0.05 #null hypothesized RMSEA
Rweb:> rmseaa <- 0.08 #alternative hypothesized RMSEA
Rweb:>
Rweb:> #Code below this point need not be changed by user
Rweb:> ncp0 <- (n-1)*d*rmsea0^2
Rweb:> ncpa <- (n-1)*d*rmseaa^2
Rweb:>
Rweb:> #Compute power
Rweb:> if(rmsea0<-="" qchisq(alpha,d,ncp="ncp0,lower.tail=F)" pow=""
pchisq(cval,d,ncp="ncpa,lower.tail=F)" }="" rweb:=""> if(rmsea0>rmseaa) {
+     cval <- qchisq(1-alpha,d,ncp=ncp0,lower.tail=F)
+     pow <- 1-pchisq(cval,d,ncp=ncpa,lower.tail=F)
+ }
Rweb:> print(pow)
[1] 1
Rweb:>
Rweb:>
```