

**DEVELOPMENT OF THE LEADERSHIP BEHAVIOURAL SCALE**



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## ABSTRACT

In South Africa, the concept of effective leadership is constantly highlighted. South African organisations depend on good leadership to ensure that the overall performance and outcomes lead to optimal effectiveness of the organisation. Several leadership scales exist, measuring relationship-, task-, change-, and value-based-orientated behaviours. However, while each of these leadership scales measures an aspect of leadership behaviour, none of these scales measures the holistic concept of leadership behaviour. In addition, most of these measures have been developed outside of South Africa, which created an opportunity for the development of leadership measures within the South African culture.

The primary focus of this study was to develop a new leadership scale, the Leadership Behaviour Scale (LBS), which would be a holistic measure of leadership behaviour within the South African context. The development of this scale was based on a thorough analysis that was done on leadership behaviours inherent to relationship-, task-, change-, value-based-, team- and strategic-orientated leadership. These concepts were used to identify the most critical leadership behaviours. Dimensions which measured leadership behaviour were formulated and identified, as well as items whereby the leadership behaviour could be measured. The LBS's dimensions and items were depicted in a conceptual measurement model.

The second focus of the study was to contextualise the concept of leadership behaviour within a nomological network of antecedents and outcomes. For the overall concept of leadership behaviour to be valid and effective, it was important to explore the positive effect that it might have on the working environment. Thus, the effect of organisational leadership on trust in the leader, and leader effectiveness was explored. Based on the literature study, a structural model was developed, which illustrated the relationship between these constructs, and various hypotheses were formulated.

The data used in this quantitative study was collected through an electronic questionnaire, and 210 completed questionnaires were returned. The final questionnaire to collect the data consisted of three scales: Leadership Behaviour Scale (LBS), Leader Trust Scale (LTS) and Leader Effectiveness Questionnaire (LEQ).

Empirical testing of the theorised models and hypotheses was conducted in two phases by using different statistical methods. First, the reliability of the LBS was tested where after an exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were utilised to test the construct validity of the measurement model. After the analysis of the model, it was identified that the reliability of the LBS dimensions was very high. The CFA revealed that reasonable good fit was obtained for the overall measurement model of the LBS.

Structural equation modelling (SEM) was used to determine the overall fit of the structural model, which included the variables of organisational leadership, trust in the leader, and leader effectiveness. The results indicated acceptable fit of the overall data, as well as that organisational leadership behaviour had a positive effect on leader effectiveness and trust in the leader. The latter again, had a positive effect on leader effectiveness.

The study contributes towards the literature, because of the new leadership scale that was developed within a South African context. In addition, the study showed acceptable results when focusing on the initial reliability and validity. The study also provided some insight into the effect of organisational leadership on trust in the leader and leader effectiveness. These insights can therefore be used within South Africa to select leaders and to improve leader behaviour within organisations. The limitations and recommendations of the study provide useful guidelines for future research.

## OPSOMMING

In Suid-Afrika word voortdurend klem gelê op effektiewe leierskap. Suid-Afrikaanse organisasies is baie afhanklik van goeie leierskap vir organisatoriese sukses en optimale prestasie. Verskeie meetinstrumente vir leierskap bestaan wat gerig is om verhouding-, taak-, verandering-, en waarde-gebaseerde leierskapsgedrag te meet. Alhoewel elkeen van die meetinstrumente 'n aspek van leierskap meet, ontbreek 'n meetinstrument wat leiergedrag as 'n holistiese konsep meet. Omdat meeste van hierdie meetinstrumente buite Suid-Afrika ontwikkel is, het dit 'n geleentheid geskep vir die ontwikkeling van meetinstrumente vir leiergedrag binne die Suid-Afrikaanse kultuur.

Die primêre fokus van hierdie studie was dus om 'n holistiese meetinstrument, die *Leadership Behaviour Scale* (LBS), binne die Suid-Afrikaanse konteks te ontwikkel. Die ontwikkeling van hierdie meetinstrument is gegrond op 'n deeglike analise van leiergedrag wat inherent deel is van verhouding-, taak-, verandering-, etie-s, span- en strategies-georiënteerde leierskap. Hierdie konsepte is gebruik om die belangrikste leiergedrag te identifiseer. Dimensies wat leiergedrag meet is ontwikkel, sowel as 'n verskeidenheid van items wat die onderliggende gedrag van elke dimensie meet. Die dimensies en items is in 'n konseptuele metingsmodel uitgebeeld.

Die tweede doel van die studie was om die determinante en gevolge van leiergedrag binne die nomologiese netwerk van leierskap te toets. Om die waarde en effektiwiteit van leiergedrag te bepaal moes die positiewe effek daarvan op die werksomgewing ondersoek word. Binne dié konteks is die effek wat organisatoriese leierskapsgedrag op die vertroue in die leier en leierdoeltreffendheid het, ondersoek. Deur middel van literatuurstudie is 'n teoretiese strukturele model ontwikkel wat die verwantskappe tussen hierdie konstruksie illustreer. Verskeie hipoteses is ook geformuleer om die geldigheid van die veronderstelde verbande te bepaal en te toets.

Die data wat in hierdie kwantitatiewe studie gebruik is, is deur middel van 'n elektroniese vraelys ingesamel, waarvan 210 voltooide vraelyste ontvang is. Die finale vraelys wat gebruik is om die data in te samel, het bestaan uit drie skale: die *Leadership Behaviour Scale* (LBS), die *Leader Trust Scale* (LTS) en die *Leader Effectiveness Questionnaire* (LEQ).

Die teoretiese modelle en hipoteses is empiries deur middel van statistiese metodes getoets. Eerstens is die betroubaarheid van die LBS getoets, waarna 'n eksploratiewe faktorontleding en bevestigende faktorontleding gebruik is om die konstrugeldigheid van die metingsmodel te toets. Na die analyses van die model uitgevoer is, is vasgestel dat die betroubaarheid van die LBS dimensies baie hoog was. Die bevestigende faktorontleding het aan die lig gebring dat redelike goeie passing vir die algehele metingsmodel van die LBS verkry is, wat dus die konstrugeldigheid van die LBS bevestig het.

Strukturele vergelykingsmodellering is gebruik om die struktuur van die strukturele model te toets wat organisatoriese leierskapsgedrag, vertroue in die leier en leier effektiwiteit as veranderlikes insluit. Die resultate het 'n aanvaarbare passing van die data in geheel aangedui en bevind dat organisatoriese leierskapsgedrag 'n positiewe effek het op vertroue in die leier en leierdoeltreffendheid, en dat vertroue in die leier 'n positiewe effek op leierdoeltreffendheid het.

Hierdie studie dra by tot die literatuur met die nuwe leierskapskaal wat binne die Suid-Afrikaanse konteks ontwikkel is. Daarbenewens het die studie aanvaarbare resultate getoon toe die fokus op voorlopige betroubaarheid en geldigheid was. Die studie het ook bygedra tot beter insig aangaande die effek van organisatoriese leierskapsgedrag op vertroue in die leier asook leierdoeltreffendheid. Hierdie insigte kan dus in Suid-Afrika gebruik word om leiers te keur en om leiergedrag binne organisasies te verbeter. Die leemtes en aanbevelings van die studie verskaf nuttige riglyne vir toekomstige navorsing.

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## CHAPTER 1

### INTRODUCTION, RESEARCH-INITIATING QUESTION AND OBJECTIVES

#### 1.1 INTRODUCTION

Organisations are a man-made phenomenon that exists to turn scarce factors of production into products and services of economic utility (De Goede & Theron, 2010). The importance of human capital within an organisational context, indicates the importance of behaviour that a working man displays and uses to manage labour. As a result, labour and the leadership within an organisation determine how effective the organisational activities will be performed and executed.

Within any organisation, it is crucial that the people responsible for producing effective and efficient services and products, must be guided in order to be successful. This is an indication of the crucial link that must be established between an organisation and the people managing its overall success. Consequently, developing people and being open for relationships are part of being an effective leader. When reflecting on research regarding effective leaders within the South African workplace, it is the natural inclination of the researcher to focus on elements which contribute towards this aspect. Various aspects of leadership within South African organisations come into play when the leadership standards are being questioned.

Leaders in organisations must be acknowledged regularly for the responsibilities they have. As a result, it is important that leaders display observable behaviours that suit the situation as well as the people within an organisation best. (Van Tassel & Poe-Howfield, 2010). These observable behaviours can contribute towards increasing the success and competitiveness of the organisation. Leadership is an integral part of any organisation, thus it is important to have a clear understanding of the most appropriate leadership behaviours. It can be argued that leadership is a process in which a leader attempts to influence his or her followers to establish and accomplish the organisation's goals (Yukl, 2013).

Leaders are seen as dynamic individuals that are responsible for advising, helping and shaping the organisation's structure. The quality of leadership relates to the way in which the psychosocial environment of a workplace created by the leader, influences individuals. This places the focus not just on the leader's own well-being, but most importantly on the well-

being of their subordinates, and how this affects the general health within the working environment (Lornudd, Tafvelin, Schwarz, & Bergman, 2015).

Leaders have certain responsibilities and duties that need to be accomplished. One of the most important aspects concerning the latter is, that they have to place their focus on determining and achieving the goals of the organisation together with their people. In this regard, leaders must focus on changes that might take place within the organisation and they must ensure that they are still prepared to be effective and productive under difficult or changing circumstances. Jooste (2004) writes that being an effective leader is to:

“enable ordinary people to produce extraordinary things in the face of challenge and change and to constantly turn in superior performance to the long-term benefit of all concerned” (p. 217).

The importance of diverse leadership in South Africa cannot be neglected at any cost, because of all the contributing factors such as diversity, lack of higher level leadership, corrupt leadership, lack of skills and knowledge, and other social factors which all contribute not only to the organisation’s effectiveness, but also to the organisational leaders’ effectiveness. Most of these aspects result in an organisation’s overall success, especially the leader’s effectiveness of executing certain behaviours that contribute towards an environment that remain competitive, agile and innovative.

Thus, the effectiveness of the organisation can be attributed to the overall effectiveness of its leaders. One could argue that having good leaders who display acceptable organisational behaviours, who can influence employees, establish trust amongst employees who will have a competitive advantage over other organisations that lack such a high level of leadership. Behaviours demonstrated by an organisational leader or the employees of an organisation, are systematically imbedded in a nomological network of latent variables. It is therefore important to understand that the behaviour of a leader plays a crucial role in the behaviour of the followers or employees (Rossouw cited in Spangenberg & Theron, 2005; Yukl, 2013).

Behaviours that contribute towards positive organisational outcomes such as effectiveness, communication, trust and commitment, could most definitely enhance the organisational effectiveness (Den Hartog & De Hoogh 2009). This could ultimately lead to the long-term stability and profitability of the organisation (Rossouw cited in Den Hartog & De Hoogh, 2009).

Ultimately, an organisation should invest in leaders who have the ability to influence their followers so that they could also demonstrate the desired behaviours within an organisation.

According to Kanungo and Mendonca (1996) “true leadership involves moving subordinates toward the realisation of the vision that the leader has formulated to fulfil the organisation’s mission” (p. 2). Leaders become successful because the vision they have for the organisation, the organisation’s own vision, and the articulation of the organisation’s goals and objectives are all aligned. Hence, it is important that leaders’ behaviour must align with the organisation’s vision, culture and norms.

According to Kanungo and Mendonca (1996):

“The quality of life and the very survival of a human society depend on the moral calibre of its members. However, people in leadership positions largely determine the moral calibre of members. The manner in which leader’s function in these positions of influence can directly contribute to the strengthening or the deterioration of the moral fibre of society” (p. 6).

This statement is an indication of the importance of leadership, and the way in which leaders lead an organisation, could have different outcomes. Any leader must ensure that an organisation is managed in a way that ensures that the overall process followed within the organisation, is ethically and morally correct.

Thus, leaders must strive towards being determined and dedicated to their employees’ success. When leaders succeed in being effective, it will lead to various outcomes such as commitment and compliance of the employees. Naturally, leadership in terms of developing commitment and increasing compliance specifically focussing on people behaviour and task behaviour, have a wide range of implications (Kickul & Neuman, 2000). A large number of studies on leadership have used the opportunity to identify various leadership behaviours that can contribute to the performance and effectiveness of a leader (Yukl, Gordon, & Taber, 2002). Consequently, it is important to ensure that the most appropriate leadership behaviours are present and that they form an integral part of a leader’s performance. Leadership behaviours are seen as correlating positively with subordinates’ perceptions of a leader’s effectiveness (Kickul & Neuman, 2000).

It is important to establish which behaviours are most important to recruit, retain and develop leaders within an organisation – that can increase the overall effectiveness and success of the organisation (Rossouw, 2014). In the last few years extensive research has been done on leadership, especially on the most important characteristics of effective leaders. However, Rossouw (2014) argued that the characteristics researched in the last decade are situational, which means that they cannot be generalised for all cultures, therefore they are a limitation for South African leaders and organisations. Literature have not been able to establish exactly which organisational leadership behaviours constitute for an effective leader, which creates an opportunity to identify the behaviours that would contribute towards overall organisational and leadership effectiveness.

It is inevitable that a selection process plays a vital role within an organisation, especially when promoting or appointing leaders that have the ability to display organisational leadership behaviours that enhances the organisation's effectiveness. One could therefore argue that a selection process should make use of methods so that accurate inferences could be made, specifically about the inherent personality and behaviour of an individual. Most of the leadership behavioural tests that are used for this purpose are based on leadership theories. For the purpose of this study the leadership theories that address organisational leadership behaviour are, relationship, task and change-orientated leadership together with value-based, team and strategic leadership (Dulewics & Higgs, 2005; Herhold, Fedor, Caldwell & Liu 2008; Larsson & Vinberg 2010; Rodriguez, 2012; Theron & Spangenberg, 2011; Van Dierendonck & Nuijten, 2011; Yukl, 2013).

All these theories provide valuable insight into the behaviour of an organisational leader. The question is, which one of the theories and the underlying scales best describe organisational leadership behaviour. In this study the researcher argues that one should attempt to use a holistic approach. It would be beneficial to integrate various behavioural dimensions to measure organisational leadership behaviour, since the use of such a behavioural measure will then be more practical and economical. For this reason, the researcher proposed to develop a new measurement scale for the South African context, which contains the most important organisational behaviours that were identified in the various leadership theories. This scale will provide a holistic view of organisational leadership, which will be classified under the term 'organisational leadership behaviour'.

This study and the development of this scale also aim to use the research for the development of leaders within organisations. According to Hendrikz (2017) the use of behavioural tests can provide organisations with powerful insights into someone's behaviour. The fact that this study aims to develop an 'other-rating' scale, contributes towards the development of leaders, because they have the opportunity to reflect on the insights provided by their followers.

Leadership within an organisation is seen as one of the most critical elements when establishing and maintaining an ethical organisation. To establish a culture within an ethical organisation, it is important to have leaders within an organisation that has integrity, builds trust, and can influence followers in a positive way through their behaviour (Lloyd & May, 2010). As cited in Wolmarans (2014) "leaders play a pivotal role in setting the climate, whether ethical or unethical" (p. 3). This reiterates the fact that the way in which followers perceive their leaders' behaviour, plays a big part in the organisational effectiveness.

It is therefore important to establish which critical behaviours of a leader could lead to increased leadership effectiveness. Effective organisational leadership behaviours could also assist organisations to optimise their long-term sustainability and overall effectiveness.

## **1.2 THE RESEARCH-INITIATING QUESTION**

The discussion in Section 1.1 assisted the researcher to come to the research initiating-question that will be explored in this study:

What constitutes organisational leadership behaviour, and how can this behaviour be measured, so that leaders with high potential for leadership, can successfully be identified during the selection process as well as developed within organisations?

## **1.3 THE RESEARCH OBJECTIVES**

The primary objectives for the research is the development of a reliable and valid leadership scale for organisational leadership behaviour within a South African context. The concept of organisational leadership behaviour cannot be isolated, since it operates in a bigger nomological network of interacting latent variables. The relationship between organisational leadership behaviour and other latent variables within this network, will be studied.

The specific objectives of this study include:

- Determining the specific organisational behaviours that would be acceptable and relevant for an effective leader.
- Using the information retrieved from literature to define the concept of organisational leadership behaviour, with the different underlying dimensions.
- Developing a reliable and valid Leadership Behavioural Scale (LBS) that can be used to measure effective leadership behaviour within a multi-cultural South African context.
- Testing the absolute and relative fit of the measurement and structural models.
- Determining if the pathways hypothesised in the structural model are significant.
- Providing recommendations for future research as well as managerial implications that could be used within organisations.

#### **1.4 SCALE DEVELOPMENT – GENERIC STEPS**

Figure 1.1 gives an overview of the generic steps used for the scale development process, which will also be used as a guideline for this study.

#### **1.5 OUTLINE OF THE STUDY**

Chapter 1 provides a contextual background for investigating the importance of leadership within organisations; the reason behaviours of leaders within organisations can be seen as important; and the value that a new leadership behavioural scale will bring to the development of leaders in organisations. This chapter also gives an outline of the research-initiating question and objectives of this study.

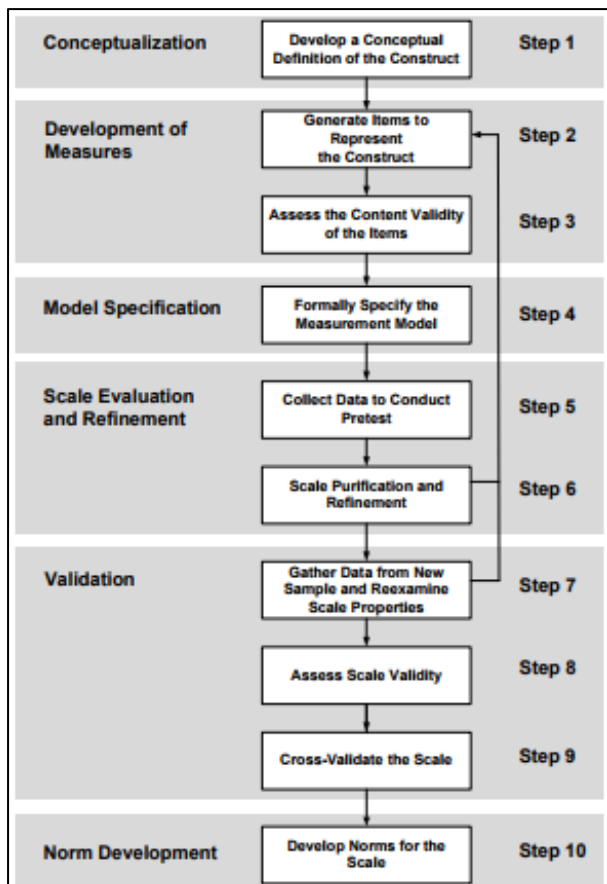
Chapter 2 presents a comprehensive review of literature, focussing on the main concepts of the study that will be discussed in detail. This literature review focusses on determining the most important behaviours of relationship, task and change-orientated leadership, but it also explores value-based leadership and strategic leadership. This chapter also proceeds to unpack the dimensions of behaviour that is exhibited by a leader and it concludes with the construction of a proposed leadership behavioural scale on the basis of the literature presented within this chapter. This chapter furthermore includes the assumption drawn that

the concept of organisational leadership behaviour is part of a more complex nomological network of latent variables, which can be used in the hypotheses of a structural model.

Chapter 3 outlines the research methodology, which consists of a comprehensive description of the research design, the hypotheses, the sample and the data collection procedure. The measurement model for the LBS is given and the statistical analyses for the analyses of the data are discussed, as well as the relationships between the variables in the structural model.

Chapter 4 presents a discussion of the results of the statistical analysis described in the previous chapter.

Chapter 5, the final chapter, concludes with the practical implications of the results that were discussed in-depth earlier, and it will highlight some limitations that were found in this study.



**Figure 1.1:** Generic Steps for Scale Development (Mackenzie, Podsakoff & Podsakoff, 2011, p.297)



## **CHAPTER 2**

### **LITERATURE STUDY**

#### **2.1 INTRODUCTION**

In reviewing the existing research done on leadership behaviour, it became apparent that the body of literature on this subject is quite extensive. According to Larsson and Vinberg (2010), a leader's behaviour plays a critical role in creating a successful organisation. Leadership research focussing on the behavioural perspective specifically, has flourished (Burke, Stagl, Klein, Goodwin, Salas & Halpin, 2006). Thus, it is important to identify which orientations or behaviours in existing literature contribute towards developing a new leadership measure.

This chapter aims to provide the reader with an overview of some of the previous research done on various leadership taxonomies and leadership behaviours, in the form of a literature study. This chapter comprises of the conceptualisation of organisational leadership, different definitions that are currently available on various leadership behaviour, and a critical review of different measurement instruments used by previous authors. This includes a broad overview of leadership studies that was done previously, in-depth information about the psychometric properties of each measuring instrument, definitions of dimensions of leadership behaviour, and examples of items used to measure the various leadership behaviours. It is therefore important to establish which dimensions of leadership behaviour in existing theories can ultimately contribute towards effective leadership.

The goal of this study is to develop a measurement instrument of leadership behaviour that is valid and relevant to the South African business context. In this chapter, a number of leadership dimensions are identified, for the ultimate development of the new instrument.

#### **2.2 CONCEPTUALISING LEADERSHIP BEHAVIOUR**

In the attempt to conceptualise leadership behaviour, a synopsis reflecting the observed motions regarding this construct, is made. Thus, this section will contain the theoretical underpinning of organisational leadership, which has been documented by some prominent researchers.

Leadership behaviour plays a critical role within organisations and it is closely linked to the success of an organisation (Larsson & Vinberg, 2010). Leadership behaviour according to Rossouw (2014) is an important tool when it comes to aspects such as shaping the organisation's culture, which involves the process of developing the employees to ensure their conduct and behaviour contributes positively towards the organisational objectives. It is inevitable that leaders within the 21<sup>st</sup> century are faced with an increased number of responsibilities, and with the high pace of transformation taking place within organisations.

As a result, it is important that leaders display observable behaviours that best suits the situation and the people within an organisation (Van Tassel & Poe-Howfield, 2010). These observable behaviours can contribute towards increasing the success and competence of the organisation. Leadership is an integral part of any organisation, thus it is important to have a clear understanding of most of the appropriate leadership behaviours. Leadership behaviours correlate positively with the subordinates' perceptions of a leader's effectiveness (Kickul & Neuman, 2000).

Traditionally the leadership behaviour theory has only included two dimensions, namely relations and task-orientated behaviours (Larsson & Vinberg, 2010). These dimensions relate to different organisational outcomes in different situations, which have been documented by a number of researchers over the past decades. A third dimension, change-orientation, was introduced in the 1990s as increased change within organisations became evident. More recently the focus in the leadership domain has moved to value-based leadership (Engelbrecht, Heine, & Mahembe, 2014; Yukl, 2013) and strategic leadership (Serfontein, 2010) as new trends in leadership behavioural theories.

Leadership behaviour should be unambiguous and visible, in order to succeed and to be effective (Kunzle, Kilbe & Grote, 2010). However, when referring to leadership behaviour as being unambiguous and visible, it can only be limited to the three orientations as documented in literature. Leadership is a multidimensional concept, which makes it more important to distinguish theoretically between distinct behavioural dimensions, which can be identified within the literature regarding the taxonomies of leadership.

## 2.3 TAXONOMIES OF LEADERSHIP

According to Yukl (2013) “a mayor problem in research on the content of leadership behaviour has been the identification of behaviour categories that are relevant and meaningful to all leaders” (p. 62). Because of the extensive research that was done by so many researchers in the last half century, quite a number of different behaviours for leaders have been identified.

### 2.3.1 Task and Relationship Orientated Leadership Behaviours

In today’s competitive business environment, it becomes more and more important for organisations to establish who the effective leaders within the organisation are and what type of leader will fit in the best regarding their strategic objectives, plans and capabilities. Thus, behaviours or competencies of a leader are becoming increasingly important, as this will help the organisation to achieve success. Researchers began to focus on the various qualities that separate leaders from their subordinates and this ultimately lead to theories of leadership (Bass & Stogdill, 1990). According to Bass and Stogdill (1990), various researchers like Kohs and Irle, Bernard, Bingman and Kilbourne all explained leadership in terms of traits of personality (p. 38). Nevertheless, the moment when some researchers began to question what the behaviours are that differentiated leaders from their subordinates, a mayor shift from trait theories to behavioural theories was made (Brown, 2003). According to Bass and Stogdill (1990), researchers wanted to describe behaviours of individuals, while they function as leaders of groups or organisations (p.511).

It was found that it is important to shift from leader traits to behaviours and rather consider how a leader can be effective by exerting the appropriate types of behaviours. The importance of consistency in leadership behaviour over a long-term period was emphasised by Rossouw (2014). According to Derue, Nahrgang, Wellman and Humphrey (2011) “this led to research on initiating structure and consideration, and established the behaviour paradigm of leadership research” (p. 8).

In terms of describing behaviour of leaders, the following two factors emerged from successive factor studies (Judge & Piccolo, 2004): Consideration is the degree of concern (respect) a leader shows for subordinates. Whereas initiation of structure is the extent to which a leader is involved in the initiation of activities in the group, while defining the way

the work must be done (Bass & Stogdill, 1990). As mentioned in Chapter 1, it is very difficult to separate these two categories, because an effective leader cannot be an extraordinary leader when only focussing on either people or tasks. Judge, Piccolo and Ilies (2004) asserted that the relative importance of specific forms of consideration and initiating structure, varies from one situation to the other (p. 37).

According to Burke et al. (2006), his colleagues noted that a common theme within the different classification systems, was a trend that certain behaviours could be separated into one of two orientations, namely task-focused and person-focused.

These constructs were used in literature to emphasise the concern a leader should have for people but also the concern for effective production (Yukl, Gordon & Taber, 2002). Task-orientated behaviours are those behaviours that facilitate the process of understanding task requirements, operating procedures and acquiring task information. Whereas, relationship-orientated behaviours are those behaviours that are used to facilitate behavioural interactions, relationships and cognitive structures (Burke et al, 2006).

Both these behavioural orientations are a crucial part of being a successful and effective leader. However, each situation within an organisation is unique which makes it so important to be able to display both these behaviours, depending on the situation. Both categories, although they differ in terms of behaviours and basic principles, are focussed on being an effective leader and enhancing organisational success, by increasing subordinate performance.

Relationship-orientated leadership can be associated with labels such as building camaraderie, trust, respect and as the relationship that forms between leaders and their subordinates (Northouse, 2011).

According to Brown (2003):

“This dimension appears to emphasize a deeper concern for group members’ needs and includes such behaviours as allowing subordinates more participation in decision making and encouraging more two-way communication” (p. 10).

Thus, one can argue that when leaders are perceived to be considerate, they tend to be more orientated toward relationships, trust and interpersonal communication with subordinates.

It was found that participation and the maintenance of the leader's group, would accompany such support (Bass, 1990).

Task-orientated leadership includes various behaviours in which leaders define group activities and the relation they have with the group. Thus, these leaders will be clear regarding the role of each member, in order for them to have a clear understanding of their assigned tasks, plans and the way in which production should take place (Brown, 2003). This concept is focussed on achieving the organisation's overall goals. It can be argued that an individual that is focussed on the initiation of structures within an organisation, are more orientated towards the tasks of the company.

#### 2.3.1.1 Dimensions of Relationship-orientated Leadership

Leaders that are classified as relations-orientated are those individuals that have a strong concern for people and relationships. Relations-orientated leadership definitions range in simplicity and complexity. To illustrate the wide range of definitions for relations-orientated leadership, a few definitions were selected from existing literature:

- Relations-orientated leadership as cited by Bass and Stogdill (1990) is "concerned for group maintenance, concerned for people, people centred, interaction facilitative and supportive, interaction orientated, employee emphasising, and in need of affiliation" (p. 473).
- Relations-orientated leadership behaviours as defined by Amabile, Schatzel, Moneta, and Kramer (2004) are "behaviours that focus on the socio-emotional: showing consideration for subordinates' feelings, acting friendly and personally supportive to them, and being concerned for their welfare" (p. 7).
- Relations-orientated leadership is found in an individual that has a certain amount of concern for morale and relationships among his/her subordinates. These types of leaders nurture genial relationships between the individuals that are working for them (Andreescu & Vito, 2010).
- "Relationship-orientated leadership as cited by Tabernerero, Chambel, Curral and Arana (2009) "expresses the degree to which a leader shows concern and respect for their

subordinates, looks out for their welfare, and expresses appreciation and support” (p. 1394).

Concerning relationship-orientated leadership, researchers attempted to identify the various types of behaviours that fit into this category. Important is the fact that leaders’ behaviours are positively associated with the perceptions or ideas their subordinates have about their effectiveness. It is very difficult to identify and integrate various results from studies that identified leaders’ behaviours, because there are already a large number of taxonomies on leadership behaviour in literature (Yukl, et al. 2002).

Many a time different definitions and terms have been used for exactly the same type of behaviours. It is important to acknowledge the need for integration by addressing the potential overlap that currently exists in literature between the different identified behaviours. A need to address the lack of consistency in terms of these leadership behaviours, exists. Thus, within this literature study various behaviours are identified and combined to minimize the number of existing behaviours.

Within this section, the literature of previously identified taxonomies and behaviours is used to select a set of behaviours for a relations-orientated leader. As mentioned earlier, relations-orientated behaviour is associated with strong commitment to subordinates supported by a high level of trust and commitment within the working unit. It is therefore important to identify the existing behaviours of leaders previously described by different researchers and studies.

### **Yukl, Gordon, and Taber (2002)**

In 2002, Yukl et al. investigated the different behaviours that are important for an effective leader. The study used specific criteria for selecting behaviour components to include in their hierarchical taxonomy. The criteria were as follow: (1) all behaviours must be observable, (2) behaviours must be applicable to all leadership types that can be present in an organisation, (3) the behaviours must have a primary relevance of one meta category, and (4) the behaviour must be grounded in previously used research. The proposed behaviours for the hierarchical taxonomy identified by Yukl, Gordon and Taber are shown in Table 2.1.

The authors proposed a set of five behaviours for a relations-orientated leader and these include: (1) supporting, (2) developing, (3) recognising, (4) consulting and (5) empowering. Each one of these relations-oriented behaviours was used in earlier measures, but usually they were called something different or they had a different meaning. For the purpose of this study these behaviours will be discussed briefly to get a clear understanding of each behaviour.

**Table 2.1**  
***Hierarchical Taxonomy of Leader Behaviour***

Taxonomy	Leadership Behaviour
<b>Task Behaviour</b>	<ul style="list-style-type: none"> <li>• Plan short-term activities</li> <li>• Clarify task objectives and role expectations</li> <li>• Monitor operations and performance</li> </ul>
<b>Relations Behaviour</b>	<ul style="list-style-type: none"> <li>• Provide support and encouragement</li> <li>• Provide recognition for achievements and contributions</li> <li>• Develop member skill and confidence</li> <li>• Consult with members when making decisions</li> <li>• Empower members to take initiative in problem-solving</li> </ul>
<b>Change Behaviour</b>	<ul style="list-style-type: none"> <li>• Monitor the external environment</li> <li>• Propose an innovative strategy or new vision</li> <li>• Encourage innovative thinking</li> <li>• Take risks to promote necessary changes</li> </ul>

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(Yukl, Gordon, & Taber, 2002)

**Supporting:** Yukl et al. (2002) defined supporting as “showing consideration, acceptance and concern for the needs and feelings of other people” (p. 20). One can argue that support is a central or integral part of consideration. Once again, the importance of consideration is identified in this study. Being a supportive leader can contribute to interpersonal relationships that are effective and trustworthy.

**Developing:** According to Yukl et al. (2002), one can see coaching as one of the core elements of developing. Developing refers to any activity or opportunity that is provided by the leader

to increase the subordinate's skills and knowledge. According to Yukl et al. (2002) "developing was identified as distinct and meaningful leadership behaviour" (p. 21).

**Recognising:** Recognising is any action that is performed by a leader that involves giving praise and showing appreciation to others. According to Yukl et al. (2002), this is usually done for "effective performance, significant achievements and important contributions to the organisation" (p. 21). According to previous literature, the combination of rewards and recognition has been defined as "contingent reward behaviour" and "positive reward behaviour".

**Consulting:** The most important aspect that is part of consulting, is including subordinates in the decisions made by the leader. According to Yukl et al. (2002) "the potential benefits of consultation include better decisions and greater acceptance of decisions by people who will implement them or be affected by them" (p. 21). One must also take into consideration that consultation will be more effective if it fits the particular situation.

**Empowering:** Yukl et al. (2002) explained empowering as "delegating and providing more autonomy and discretion to subordinates" (p. 21). One can argue that when empowering subordinates, it can lead to more commitment, that will also lead to more trust and respect between the leader and the subordinates. Another in-depth definition of empowerment according to Yukl et al. (2002), is that empowerment gives a certain amount of responsibility and discretion to individuals in terms of work activities.

According to Yukl et al., (2002) study, this taxonomy identified the behaviours that might be relevant for an effective leader.

#### **Amabile, Schatzel, Moneta and Kramer (2004)**

An exploratory study was done by Amabile, Schatzel, Moneta and Kramer (2004) that investigated behaviours of leaders that relate to perceived leader support, encompassing both instrumental and socio-emotional support. They adopted a 'middle range' leader behaviour taxonomy, namely the Managerial Practices Survey (MPS) of Yukl, Wall, Lepsinger, Clark & Clark (1990). According to Amabile et al. (2004) "this taxonomy proposes categories of behaviour that are considerably more specific than the two broad factors but still broad enough to contain a number of related behaviour" (p. 8).



The MPS consists of a 14-category of leader behaviours. They used the MPS because it was found to be the most comprehensive and rigorous measure developed for leader behaviours. For the purpose of this, a selection was made from the 14 different behaviours that are found in the existing MPS of Yukl, Wall and Lepsinger (1990). A selection of eight behaviours were made to decide which behaviours are most suitable for a relations-orientated leader.

In Table 2.2, the definitions of the behaviours are given as defined in the original MPS.

**Table 2.2**  
***Definitions of managerial behaviours in the Managerial Practices Survey (MPS)***

MPS category	Definition
<b>Supporting</b>	Being an individual who can be described as friendly, and considers other people's feelings, values and interests. Giving support and showing sympathy when needed.
<b>Consulting</b>	Before making any changes, it is important to check with people to determine how it will affect them. It's important is to make suggestions that encourage subordinates, to consider their decisions before implementing change.
<b>Delegating</b>	Allowing subordinates to have substantial responsibility and discretion in carrying out work, activities, handling problems and making important decisions.
<b>Developing and Mentoring</b>	Providing coaching and helpful career advice, and doing things to facilitate a person's skill acquisition, professional development, and career advancement.
<b>Managing Conflict and Team building</b>	Resolve conflict in an effective and constructive manner. Encourage people's cooperation in terms of teamwork and help them to identify themselves in the working unit.
<b>Recognising</b>	Providing praise and recognition for effective performance, significant achievements, and special efforts.

<b>Rewarding</b>	Providing or recommending tangible rewards such as a pay increase or promotion for effective performance, significant achievements, and demonstrated competence.
<b>Informing</b>	Disseminating relevant information to people who need it to do their work, providing written materials and documents, and answering requests for technical information.
<b>Planning and Organising</b>	This involves the long-term objectives and strategies, allocation of resources and determining how to use personnel and resources effectively.
<b>Clarifying Roles and Objectives</b>	Leaders are responsible for giving tasks to individuals and guiding them in how to do the work. Communication should be clear and understandable so that individuals know what their responsibilities, tasks, deadlines and expectations from managers are.
<b>Monitoring</b>	Gathering information about work activities and external conditions affecting the work, checking on the progress and quality of the work, evaluating the performance of individuals and the organizational unit, analysing trends, and forecasting external events.
<b>Problem-solving</b>	Being able to identify work-related problems and having the ability to analyse problems in a timely but systematic manner to identify causes and find solutions.
<b>Motivating and Inspiring</b>	Using influence techniques that appeal to emotion or logic to generate enthusiasm for the work, commitment to task objectives, and compliance with requests for cooperation, assistance, support, or resources, and setting an example of appropriate behaviour.
<b>Networking</b>	Socializing informally, developing contacts with people who are a source of information and support, and maintaining contacts through periodic interaction, including visits, telephone calls, correspondence, and attendance at meetings and social events.

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(Adapted from Amabile, Schatzel, Moneta & Kramer, 2004)

It is clear that some of the behaviours present in the MPS of Amabile et al. (2004) are also present in the Hierarchical Taxonomy of Yukl et al. (2002). It is important to take note of the behaviours that were repeated in the various studies as these are seen as crucial for a relations-orientated leader.

### **Fleishman, Mumford, Zaccaro, Levin, Korotkin and Hein (1992)**

Fleishman, Mumford, Zaccaro, Levin, Korotkin and Hein (1992) attempted to formulate a general taxonomy that is capable of describing the behaviours that are required for an effective organisational leader. They used 65 different classification systems that were developed between 1940 and 1986.

According to Fleishman et al. (1992) “organisational leadership behaviour constitutes a functional phenomenon by virtue of its focus definition and attainment” (p. 257). They also argued that a leader’s behaviour is very complex and that it involves many cognitive capacities in the processes of generating, selecting and implementing of ideas. Fleishman et al. (1992) identified core or superordinate dimensions that describe leadership and they analyse the relationships among the dimensions. They referred to the lower order dimensions as Leader Behaviour Dimensions (LBD’s). Definitions of the dimensions or leadership behaviours are described in Table 2.3 as found in the study of Fleishman et al. (1992).

**Table 2.3**

#### ***Definitions of the Leadership Behaviour Dimensions (LBD’s)***

Behaviour Dimension	Definition and description
<b>Feedback and Control</b>	Determining if guidance, directions and actions were understood and implemented correctly on all levels. Establishing the outcomes of the leader’s guidance.
<b>Identifying Needs and Requirements</b>	The reflection of having an idea for a specific problem rather than implementing a specific solution. It has to do with the ability to identify significant factors that influence the nature of a problem or the specific requirements for the solution to the problem.

<b>Planning and Coordinating</b>	Specification of timing and nature of a specific attempt within organisational context. Concerned with ways and means that a specific job will be done or accomplished by using available resources.
<b>Communicating Information</b>	Communication has to do with the way in which information is transmitted, passed on, or exchanged. Any form of communication can be used to convey information such as messaging, speaking, writing or automatic data processing.
<b>Obtaining and Allocating Personnel Resources</b>	This dimension attempts to enhance subsystem performance. It also has to do with the classification and assigning of personnel in accordance with needs, qualifications and abilities.
<b>Designing Personnel Resources</b>	Actions that is focussed on developing personnel resources by making use of coaching, mentoring, training and providing feedback. All of these are focussed to enhance performance of subordinates with respect to goal attainment.
<b>Motivating Personnel Resources</b>	Various actions that are focussed on increasing cohesiveness, building commitment, providing resources, managing resources and demonstrating a concern and confidence in people.

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(Fleishman et al. 1992)

**Mahsud, Yukl and Prussia (2010)**

The leader-member exchange (LMX) theory stipulates that a leader is someone who will develop and exchange relationships with their subordinates over time. It is important to acknowledge the fact that the relationship a leader has with subordinates, definitely has an important impact on the effectiveness of the leadership. As cited by Mahsud, Yukl and Prussia (2010), the LMX is associated more with a relations-orientated leader than any other

leadership style. Within this study, existing behaviours were identified that best suited the behaviours of a relations-orientated leader.

Behaviours that were identified by the authors which related strongly to a relations-orientated leader was “providing psychological support, recognising subordinate contributions, developing subordinate skills, consulting with subordinates to learn about their ideas and concerns and delegating more authority and responsibility to subordinates” (p. 562).

Thus, these behaviours can be categorised in five basic dimensions that describe a relations-orientated leader’s behaviour, namely (1) support (2) recognising (3) develop (4) consult and (5) delegating. It is evident that these behaviours when simplified, relate back to the behaviours discussed in previous sections of this study.

### **Rossouw (2014)**

The study done by Rossouw in 2014 attempted to uncover which leadership behaviours are most useful and effective for an organisation. The objective of the study done by Rossouw was to increase the depth of effective leadership behaviour and the understanding thereof within the emerging South African economy.

The repertory grid interview technique was utilised within this qualitative study to uncover the perspectives of leaders within South Africa. This technique was scientifically proven to be a useful tool to investigate personal constructs of individuals. The data analysis process was based on the interpretation that the respondents had given about effective leadership behaviours within organisations (Rossouw, 2014). Rossouw followed a seven-stage interview process in which the participants were asked a series of questions and cases to unlock the potential leadership behaviours within their organisations. The themes that emerged from the repertory grid and the interview process by Rossouw (2014) were consolidated from the first-order themes to 11 second-order themes. The 11 second-order themes that emerged from the interviews are listed below:

1. Leading by example
2. Cultivating an empowering culture, characterised by participation, socialised power approach, and collective efforts

3. Showing courage to make difficult decisions, to take responsibility, and to accept accountability for your actions
4. Attaining and maintaining credibility, based on integrity and competence
5. Ethical, values-based leadership
6. Strong team leadership
7. Open communication
8. Strategic decision-making and execution
9. Maintaining a long-term approach toward sustainable development
10. Attempting to understand the people and the organisation
11. Creating and maintaining a shared vision and a shared goal.

These behaviours are an attempt to understand leadership behaviour better and at the same time to educate organisations in how to manage different behaviours effectively (Rossouw, 2014).

#### **Larsson and Vinberg (2010)**

The comparative study done by Larsson and Vinberg (2010) managed to evaluate common leadership and organisational behaviours. The behaviours identified by them was the most critical behaviours that should be practiced within organisations. They have identified nine common groups of behaviours, which were analysed in relation to the three-dimensional leadership behaviours namely change, structure and relations-orientated (Larsson & Vinberg, 2010). In the study done by them it was evident that relations-orientated leadership behaviour is one of the strongest dimensions of leadership and is seen as a key success factor for any leader within an organisation. The common groups of behaviours identified in the study is captured in Table 2.4 below.

**Table 2.4*****Common Elements of Successful Leadership***

Common Groups of Behaviour	Description
<b>Strategic and visionary leader role</b>	The leaders maintain a holistic view and give their subordinates the opportunity to see their own contributions for the organisation. The leader is clear about the organisational vision and strategies which is communicated clearly to the organization.
<b>Communication and information</b>	The organisation has a communication structure that increases the success of the overall performance. The leaders communicate and try to get the employees to see the importance of continuous communication and information sharing.
<b>Authority and responsibility</b>	The leaders practise both authority and responsibility, and do not control details. Trust plays a key factor within the organisation and regarding the relationship with the subordinates.
<b>Learning culture</b>	When projects and tasks are completed, the leaders give constructive feedback, both positive and negative. The leader gives employees the opportunity to learn from their own mistakes by giving them time and space to improve.
<b>Worker conversations</b>	Cross-functional discussions and dialogues are held where the leaders seriously listen to and focus on worker ideas, wishes, and points of view. The leader ensures that regular coaching sessions are held to discuss goals of the organisation and the individual.

<b>Plainness and simplicity</b>	The leaders encourage the subordinates to make decisions on their own which create quick decision-making without time-consuming meetings. The leader gives each individual a certain level of responsibility and authority within the organisation.
<b>Humanity and trust</b>	Communication and trust are keywords; there is a mutual confidence between leaders and subordinates. Everybody relies on one another.
<b>Walking around</b>	The leaders frequently walk around in the organisation and talk to all employees (so-called management by walking around), not just about the work, but also about how they are feeling. The leader believes that increasing his/her network within the organisation is a crucial aspect that contributes towards success.
<b>Reflective personal leadership</b>	The leaders reflect about own leadership practices, to personally have a positive attitude and to try to foster a positive culture in the workplace.

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(Adapted from Larsson & Vinberg, 2010)

#### 2.3.1.2 Dimensions of Task-orientated Leadership

Leaders that are classified as task-orientated can be seen as those individuals that feel strongly about structure and accomplishing tasks within the organisation. The definitions of task-orientated leaders are more restricted than relationship-orientated leadership. To illustrate the definitions of task-orientated leadership, a few definitions were selected from existing literature.

- Task- orientated leadership behaviours as defined by Yukl (2013) can be seen as “assigning tasks to subordinates, maintaining definite standards of performance, asking subordinates to follow standard procedures, emphasizing the importance of



meeting deadlines, criticizing poor work, and coordinating the activities of different subordinates” (p. 64).

- Task-orientated leadership behaviours according to Burke, Stagl, Klein, Goodwin, Salas and Halpin (2006) “are those that facilitate understanding task requirements, operating procedures and acquiring task information” (p. 291).
- Task-orientated leadership was defined by Cohen, Solomon, Maxfield, Pyszczynski and Greenberg (2004) “as leaders that set high, yet achievable goals and effectively achieving those goals by efficiently allocating resources and delegating responsibilities” (p. 846).

Various researchers attempted to identify the various types of behaviours that would be suitable for a task-orientated leader. Within this section an in-depth analysis was done of existing literature and taxonomies to identify specifically task-orientated leadership behaviours.

#### **Yukl, Gordon, and Taber (2002)**

Yukl et al. (2002) did a study that identified different behaviours that are important for an effective leader. Specifically, focussing on task-orientated behaviour the proposed behaviours for the hierarchical taxonomy identified by Yukl et al. (2002) included: (1) short term planning, (2) clarifying responsibilities and (3) monitoring operations and performance. These behaviours are discussed briefly to ensure a clear understanding of these specific behaviours.

***Short term planning:*** Yukl et al. (2002) defined this concept as “deciding what to do, how to do it, who will do it, and when it will be done” (p. 18). In general, it is difficult to observe planning, but according to Yukl et al. (2002) there are some observable aspects of planning that can be identified such as writing plans, developing schedules and planning how to accomplish tasks.

***Clarifying responsibilities and performance objectives:*** According to Yukl et al. (2002) the concept of clarifying is “the communication of plans, policies and role expectations” (p. 19). This type of behaviour that should be identifiable within a leader, should be used to guide and coordinate the work that people need to do.

**Monitoring operations and performance:** The concept of monitoring was described as “gathering information about the operations of the manager’s organisational unit, including the progress of the work, the performance of individual subordinates, the quality of products or services, and the success of projects or programs” (Yukl et al. 2002, p. 19). Monitoring facilitates the effective use of other behaviours, such as clarifying and recognising, since they place focus on various aspects of performance.

#### **Fleishman, Mumford, Zaccaro, Levin, Korotkin and Hein (1992)**

The study done by Fleishman *et al.* (1992) has been analysed in detail in Section 2.3.1.1, but it was found that some of the identified behaviours within this study are more relevant to a task-orientated leader. The following task-oriented dimensions could be identified: (1) Planning and Coordinating and (2) Obtaining and Allocating Material Resources.

Fleishman et al. (1992) identified task-orientated dimensions, which is a strong indication of trends identified within previous literature.

#### **Amabile, Schatzel, Moneta and Kramer (2004)**

The study done by Amabile et al. (2004) as discussed in Section 2.3.1.1 developed a leadership behavioural taxonomy namely Managerial Practices Survey (MPS). In Table 2.2 the definitions of the different behaviours are given as defined by Amabile et al. (2004).

The following task-oriented dimensions could be identified; (1) Planning and Organising; (2) Clarifying Roles and Objectives and (3) Monitoring

Most of these behaviours that were used in the study of Amabile et al. (2004) are present within the study of Yukl et al. (2002) which again is an indication that these behaviours repeat themselves within different taxonomies. Thus, as argued earlier in the study, it is important to take note of the behaviours that are used during different studies, because they are an indication of an important aspect of task-orientated leadership.

#### **Horner – Long and Schoenberg (2002)**

In the study done by Horner and Schoenberg in 2002, it was argued that effective leaders share a set of common attributes. It is believed that leaders should be a match regarding their environment as well as their organisational setting. They argued that a “different situational

context of e-business will dictate a distinctive set of leadership characteristics” (p. 611). This gives a foundation for the argument that within the ‘technological driven’ world of work within the 21<sup>st</sup> century, it is crucial for leaders to be able to apply their skills in a technology driven environment. Task-oriented leaders are focussed on reaching goals, planning, clarifying tasks for employees and managing individuals in an effective manner. Thus, being able to do this in an organisation while utilising the ‘e-business’ environment that they are surrounded with, will lead to great successes.

Within the study conducted by Horner and Schoenberg (2002) a set of 15 behaviours was identified. From these behaviours it is evident which behaviours as set out in Table 2.5 relate strongly to task-oriented behaviours. The following task-orientated behaviours were identified: (1) Set Clear Expectations, (2) Exploit Technology, (3) Prioritise Activities, (4) Network Extensively, (5) Share Knowledge, and (6) Establish Strategic Controls.

**Table 2.5**  
**Leadership Behaviours**

Leadership Behaviour	t- Statistics
Motivate People	-0,124
Anticipate Opportunities	0,040
Inspire a vision	1,85
Set Clear Expectations	1,551
Live the Values	3,392
Foster Teamwork	-0,192
Exploit Technology	-0,933
Partnerships	-0,634
Solicit new ideas	-1,268
Reward and Recognising	-0,307
Prioritise activities	-2,416
Encourage Challenge	0.406
Network Extensively	-2,705
Share Knowledge	0,072
Establish Strategic Controls	1,012

(Adapted from Horner-Long and Schoenberg, 2002)

### 2.3.1.3 Measurement of Task and Relationship-orientated Leadership

In this section, the following measurement instruments of task and relationship-orientated leadership will be discussed: Leadership Behaviour Description Questionnaire (LBDQ) and the Managerial Practices Survey (MPS).

#### **Leader Behaviour Description Questionnaire**

The LBDQ is one of the most widely used leadership measurement instruments (Rodriguez, 2012). This instrument is a very old instrument and has been around for more than 50 years. This can be seen as an indication of how the behaviours of leaders have influenced research.

When the LBDQ was developed it was done in a time where leadership research was scarce and not much was known about the topic or aspect of leadership. This instrument provides group members with techniques whereby they can describe the behaviour of a designated leader in a formal organisation.

The LBDQ-XII is the latest version of the instrument that consists of 100 Likert-type scaled items, which are assigned to 12 factors. (Rodriguez, 2012). The reliability coefficients of the 12 subscales were determined by using a modified Kuder-Richardson equation. The coefficients when tested for community leaders varied from 0.58 to 0.86 (Stogdill, 1963).

Rodriguez (2012) emphasised “consideration and initiating of structure became the sole factors in describing leadership behaviour, thus researches began to argue for additional criteria that could help further describe leadership behaviour” (p. 99).

Rodriguez (2012) indicated an overall correlation of 0.34 for consideration was found, and 0.29 was found for initiating of structure. According to Rodriguez (2012) “the present instrument seems to satisfy the criteria for content validity, rate reliability and overall reliability” (p. 102).

As mentioned above, the LBDQ consists of 12 factors and for the purpose of this study these factors will be considered for inclusion in the development of the LBS. In Table 2.6 a description is given of each selected dimension.

**Table 2.6**  
***Selected Dimensions from LBDQ***

Behaviour Dimension	Definition	Number of Items per Dimension
<b>Representation</b>	Speaks and acts as the representative of the group.	5 items
<b>Demand Reconciliation</b>	Reconciles conflicting demands and reduces disorders to the system.	5 items
<b>Tolerance of Uncertainty</b>	Is able to tolerate uncertainty and postponement without anxiety or upset	10 items
<b>Persuasiveness</b>	Uses persuasion and argument effectively; exhibits strong convictions.	10 items
<b>Consideration</b>	Regards the fact that subordinates need comfort, and also realise how important well-being, status and contributions of the subordinates are.	10 items
<b>Integration</b>	Has the ability to resolve inter-member conflicts and to keep the organisation close together.	5 items
<b>Superior Orientation</b>	Ensures that relationships with subordinates are seen as affectionate, and that they have some form of influence on them.	10 items
<b>Initiation of Structure</b>	Leader defines roles in a clear and understandable manner and ensures that followers know what is expected of them.	10 items
<b>Role Assumption</b>	Exercises own leadership role rather than to surrender to others.	10 items
<b>Production Emphasis</b>	Applies pressure on the productive output.	10 items
<b>Predictive Accuracy</b>	Have the ability to predict an outcome in an effective manner.	5 items
<b>Tolerance and Freedom</b>	Allows followers scope for initiative, decision and action.	10 items

(Rodriguez, 2012)

### **Managerial Practices Survey (MPS)**

The MPS or also known as the TRCQ-15G, comprises of three scales namely task, relationship and change-orientated leadership (Gil *et al.*, 2005). According to Amabile *et al.* (2004) the MPS is one of the most comprehensive and rigorously developed measures of leader behaviour in the field.

The MPS includes 14 behaviour categories (see Table 2.2) that have been operationalised in the MPS questionnaire by Yukl in 1999. According to Yukl (1999) “the MPS is representative of several leadership questionnaires that measure a variety of specific behaviours or skills” (p. 41). The MPS scales have from three to six items. Respondents are asked to rate the leader behaviour described in each item, on a four-point scale with the following response choices: (1) never, not at all, (2) seldom, to a small extent, (3) sometimes, to a moderate extent, and (4) usually, to a great extent.

In a study done by Kim and Yukl (1995) the internal consistency reliability for the 14 behavioural scales was tested on an individual level. The internal consistency was strong for all leadership behaviours, except for self-reported informing. The alpha coefficients varied from .89 to .48. The inter-correlations between the behaviours were also documented and even though these scales are based on orthogonal factors, they were moderately inter-correlated.

In the factor analysis done by Yukl in 1999 some of the items from eight MPS scales loaded onto the T-factor and the R-factor, which refer to task and relationship-orientated behaviour. The eight MPS scales were clarifying, planning/organising, internal monitoring, supporting, consultation, delegating, recognizing and developing. The factor loadings for the items when tested varied from .62 to .78 (Yukl, 1999).

Table 2.7 contains the factor loadings for the representative items of the MPS questionnaire specifically focussing on Task and Relationship-orientated behaviour.

**Table 2.7**  
***Factor Loadings for Representative Items***

Primary Category	Behaviour Item	Factor loading
<b>Task-orientated behaviour</b>	Plans in detail how to accomplish an important task or project.	0.74
	Provides a clear explanation of your responsibilities with regards to a task or project.	0.72
	Clearly explains what results are expected for a task or project.	0.69
	Determines what resources are needed to carry out a project.	0.65
	Determines how to organize and co-ordinate work activities to avoid delays, duplication of effort, and wasted resources.	0.62
	Checks work progress against plans to see if it is on target.	0.62
<b>Relationship-orientated behaviour</b>	Provides encouragement and support when you have a difficult or stressful task.	0.78
	Backs you up and supports you in a difficult situation.	0.70
	Gives you credit for helpful ideas and suggestions.	0.69
	Consults with you to get your reactions and suggestions before making a decision that affects you.	0.66
	Provides opportunities to develop your skills and show what you can do.	0.65
	Expresses confidence in your ability to carry out a difficult task.	0.64

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(Yukl, 1999)

### 2.3.2 Change-orientated Leadership behaviours

Organisational leadership behaviours have a direct influence on employees, the working environment and the actions that enable change within organisations. Gil, Rico, Alcover and Barrasa (2005) argued that because of globalisation, application of the newest and latest technologies, coping with a turbulent environment, most organisations are faced with this major challenge of transformation. Organisations, automatically rely on the guidance and support of their leaders to take on this responsibility. Thus, leaders may function as change agents to be responsible for change strategy and the successful implementation thereof (Gilley, Gilley & McMillan, 2009).

Change-orientated leadership behaviours is a powerful mechanism as it focuses on leading major innovative improvements and on the adaption of internal and external changes (Otraga, Van Den Bossche, Sanchez-Manazanres, Rico & Gil, 2014). The lack of understanding change and how it should be implemented within organisations, are cited as one of the barriers of success (Giley *et al.*, 2009). Giley *et al.* (2009) also identified additional barriers such as inability to motivate others to change, poor communications skills, and failure to manage the reward and recognition of individuals who make an effort to change within the organisation. Existing theories and literature regarding transformational and charismatic leadership refer to change-orientated behaviour to some extent and it can be argued that such patterns are related to effective leadership (Faghihi & Allameh, 2012).

The major characteristics of change-orientated leadership behaviour are concepts such as innovative improvements and adaptation to external changes (Yukl *et al.*, 2002). Change-orientated leadership has a significant effect on performance and satisfaction within the work environment. Gil *et al.* (2005) found that change-orientated leadership correlates significantly with group performance and satisfaction.

The different observable behaviours that are classified as change-orientated leadership, are behaviours such as external *monitoring*, *envisioning change*, *encourage innovative thinking* and *taking personal risks* to implement change (Yukl *et al.*, 2002).

#### 2.3.2.1 Dimensions of Change-orientated Leadership

Leaders that are classified as change-orientated, can be seen as those individuals that are the change-agents within the organisation. These individuals are extremely effective when it



comes to change strategies and the implementation of any changes made within an organisation. To illustrate the wide range of definitions of change-orientated leadership, a number of definitions were selected from existing literature.

- According to Yukl (2013) this leadership style involves “guiding, encouraging, and facilitating the collective efforts of members to adapt and survive in an uncertain and sometimes hostile environment” (p. 87).
- Yukl (2013) described change-orientated leadership behaviour as being “primarily concerned with understanding the environment, finding innovative ways to adapt to it, and implementing major changes in strategies, products or processes” (p. 65).

When an organisation, its leaders and the entire workforce are ready for change and they are primed to embrace change, a sum of positive behaviours and feelings will be reflected. It is important to note that certain psychological climate dimensions of trust, participation and support can be described as preconditions for an organisation conducive of change (Bouckenoghe, Devos & Van den Broeck, 2009).

In literature, there have been a few taxonomies that focussed on change-orientated leadership behaviour. Thus, it is important to identify the existing behaviours of leaders previously described by other researchers and studies.

### **Yukl, Gordon, and Taber (2002)**

The study done by Yukl, Gordon and Taber (2002) focussed on various change-orientated leadership behaviours. They identified four change behaviours namely: (1) External Monitoring; (2) Envisioning Change; (3) Encouraging Innovating Thinking; (4) Taking Personal Risks. These behaviours will be discussed briefly for the purpose of this study to ensure a clear understanding of these specific behaviours.

**External Monitoring:** A leader should be able to monitor the environment (externally) and identify any threats or opportunities that might be relevant to the organisation. It is important that leaders should be sensitive to a wide array of information, which consists of various key aspects such as market trends, government and economic conditions.

**Envisioning Change:** The leader should be able to articulate a vision that inspires a better future. It is important that the vision is aligned not only with the leader's values, but also with the followers' beliefs and values.

**Encouraging Innovative Thinking:** Yukl et al (2002) stated that "encouraging innovative thinking can be differentiated from proposing innovations yourself, and a leader can use various combinations of the two behaviours" (p. 23).

**Taking Personal Risks:** It is a major risk factor when a leader decides to make a big change, especially when this change is not obvious to most of the people. According to Yukl et al. (2002) "the possible risks entailed by pushing for change when there is strong resistance include loss of job, diminished reputation, derailed career and personal rejection by colleagues" (p. 23). These behavioural dimensions all form part of the overarching change-orientated leadership style.

#### **Amabile, Schatzel, Moneta and Kramer (2004)**

The study done by Amabile et al. (2004) as discussed in Section 2.3.1.1, developed a leadership behavioural taxonomy, namely Managerial Practices Survey (MPS). In Table 2.2 the definitions of the different behaviours are given as defined by Amabile et al. (2004). The following change-orientated leadership behaviours were selected; (1) Problem Solving; (2) Motivating and Inspiring and (3) Networking.

#### 2.3.2.2 Measurement of Change-orientated Leadership

In this section, the following measurement instruments of change-orientated leadership are discussed: Managerial Practices Survey (MPS) and the Leadership Scale.

#### **Managerial Practices Survey (MPS)**

As mentioned in the previous section the MPS is a representative measure of several leadership questionnaires, which focuses on the measurement of specific behaviours or skills.

In the factor analysis done by Yukl in 1999, some of the items from three MPS scales loaded onto the C-factor – the Change-orientated behaviour. The three MPS scales were problem solving, inspiring or motivating and networking. The factor loadings for the items when tested varied from 0.53 to 0.67 (Yukl, 1999).

Table 2.8 contains the factor loadings for the representative items of the MPS questionnaire, specifically focussing on Change-orientated behaviour.

**Table 2.8**  
***Factor Loadings for Representative Items***

Primary Category	Behaviour Item	Factor loading
<b>Change-orientated behaviour</b>	Proposes new and creative ideas for improving products, services or processes.	0.67
	Is confident and optimistic when proposing a major change.	0.67
	Takes a long-term perspective on problems and opportunities facing the organisation.	0.64
	Describes a clear, appealing vision of what the organisation can accomplish or become.	0.57
	Negotiates persuasively with people outside the work unit to get agreements or approvals necessary to implement a major change.	0.53
	Studies the products and activities of competitors to get ideas for improving things in his/her organisational unit.	0.53

(Yukl, 1990)

#### **Leadership Scale (Herhold, Fedor, Caldwell & Liu 2008)**

In a study done by Herhold *et al.* (2008) the relationship between transformational and change leadership was investigated. Change leadership was assessed by using the Organisational Change Survey. They investigated change-leadership behaviours after they had constructed their own scale from organisational development literature on change leadership, which specifically described what leaders should do to effectively implement change. They developed seven items with an alpha coefficient of 0.89. They used the following items (Table 2.9) to construct their own leadership scale to determine how change-specific leadership practices related to followers' commitment.

**Table 2.9**  
***Change Leadership Items***

Leadership Style	Item (My Leader...)
<b>Change Leadership</b>	<p>Is confident and optimistic when proposing a major change.</p> <p>Made it clear up front to those in our unit why the change was necessary.</p> <p>Made a case for the urgency of this change prior to implementation.</p> <p>Built a broad coalition up front to support the change.</p> <p>Empowered people to implement the change.</p> <p>Carefully monitored and communicated progress of the change implementation.</p> <p>Gave individual attention to those who had trouble with the change implementation.</p>

(Herhold, Fedor, Caldwell & Liu, 2008)

### 2.3.3 Value-based (moral) Leadership

In the following section, a distinction will be made between the different types of leadership styles that can be classified under the term value-based leadership. According to Prilletensky (2000) "value-based leadership may be conceptualized as practice aimed at fostering cogent values in consideration of personal interests and degrees of power held by people within an organization and in the group of people it serves" (p. 141).

Value-based leadership is also known as moral leadership, and this type of leadership is focussed on the needs and wants of the leaders' subordinates.

Different leadership styles that can be classified according to value-based leadership, will be discussed briefly. The styles that have been selected are (1) Transformational leadership, (2) Servant leadership (3) Authentic leadership, and (4) Ethical leadership (Engelbrecht, Heine & Mahembe, 2014).

### 2.3.3.1 Transformational Leadership

Transformational leadership can be defined as an approach to leadership that causes change within individuals and social systems, but it also refers to leaders that move beyond their immediate self-interests (Bass, 1990). As cited by Schaubroeck and Lam (2011), it was argued that leaders are perceived as highly competent when they cultivate and maintain an agenda that is compelling, and they provide the organisation with a clear structure that facilitates the organisation's pursuit of this agenda. The construct transformational leadership was developed by Bass in 1985, which referred to a leader's behaviours and communications which are used to elevate followers' interest, specifically in furthering the collective purposes of the organisation.

Transformational leadership is one of the most active or effective types of leadership where leaders engage with their subordinates and constantly motivate them to perform beyond the transactional agreements (Rubin, Munz, & Bommer, 2005). Superior leadership performance (transformational leadership) usually occurs because leaders broaden and elevate the interests of their subordinates. This is done by helping employees to look beyond their own self-interest. Transformational leadership behaviour relates to the articulation of the vision of the future, and to have an ability to see the bigger picture, which enables them to establish new ideas and move closer to the organisation's vision. Thus, it is argued that transformational leadership theory will most likely result in growth, independence and also the empowerment of a leader's subordinates (Kark, Shamir & Chen, 2003).

Transformational leadership can be categorised into four distinct dimensions namely, idealised influence, inspirational motivation, intellectual stimulation and individualised consideration (Judge & Piccolo, 2004). Each one of these concepts has a distinct meaning that illustrates the behaviour of a transformational leader. *Idealised influence* is the way a leader behaves so that subordinates will find it admirable. *Inspirational motivation* is the degree to which leaders use their abilities to articulate a vision to subordinates. This vision must be inspirational and appealing towards the subordinates, to ensure that they are motivated to face any challenge or goal. Next, *intellectual stimulation* refers to the way in which leaders challenge assumptions, are prepared to take risks and encourage their subordinates' ideas and initiatives. Lastly, *individualised consideration* can be seen as the amount of time or the degree of attention a leader spends on his or her subordinates. This is also a way in which

leaders use their skills to act like a mentor or a coach to their subordinates and listen and attend to subordinates' needs and concerns (Judge & Piccalo, 2004). It is important that transformational leadership must be encouraged in any organisation as it can differentiate between successful and unsuccessful organisations.

#### 2.3.3.2 Authentic Leadership

As cited by Avolio and Gardner (2005) authentic leadership can be defined as “a process that draws from both positive psychological capacities and a highly developed organizational context, which results in both greater self-awareness and self-regulated positive behaviours on the part of leaders and associates, fostering positive self-development” (p.321). As cited by Walumbwa, Avolio, Gardner, Wernsing & Peterson (2008) authenticity can also be defined, as in the positive psychology field, as “owning one's personal experiences, be they thoughts, emotions, needs, preferences, or beliefs, processes captured by the injunction to know oneself and behaving in accordance with the true self” (p. 92).

When describing authentic leadership, one can refer to the idea of being true to oneself, being the person that you truly are and not becoming a person or creating an image of who you want to be. According to Walker and Walker (2011) “an authentic leader is self-aware, and guided by a set of values, or high moral standards; is viewed as honest and as possessing integrity demonstrated through transparency in their actions, resulting in fair and balanced decisions, or doing “what is right and fair” for both the leader and their subordinates” (p. 383).

Authentic leaders usually have self-knowledge and can reflect their own values and convictions. They are also leaders that come across as strong by knowing what their role is and by acting on the basis of their own values and convictions (Shamir & Eilam, 2005). Thus, one can argue that authentic leadership is beyond creating an image or *persona* but being true to yourself and your subordinates – being a leader that reflects a trustworthy image.

Empowerment is a critical behaviour that needs to be present in any organisational leader. An authentic leader is one that can support this dimension/behaviour. As an authentic leader is someone who has an inherent desire to serve others, he/she is also interested in *empowering* the people that follow them. They empower them by the way they lead to make a difference. According to Avolio, Gardner, Walumbwa, May & Luthans (2004) authentic

leaders “are guided by the qualities of the heart, passion and compassion as they are by the qualities of the mind” (p. 801).

Authentic leaders are people that have the ability to organise tasks and the feedback that is linked with the tasks, they are also equipped in seeking out situations that are challenging for their subordinates. According to the authentic leadership conceptual model designed by Walker and Walker (2011) it helps in providing a “visualisation of authentic leadership performance so that concerned individuals or groups can appreciate what are the most important factors and behaviours that develop authentic leadership” (p. 392). The behaviours *mentoring and coaching* are regarded as behaviours of a supportive leader is. Thus, perspective and a personal point of view are an integral part of authentic leadership. Having your own point of view is worth more than borrowing someone else’s perspective or opinion.

#### 2.3.3.3 Servant Leadership

Servant leadership is based on the fact that a leader wants to bring out the best in his/her subordinates. Leaders are focussed on communication between themselves and their subordinates to be able to understand abilities, needs, desires, goals and to be aware of the underlying potential of the individuals (Liden, Wayne, Zhao & Henderson, 2008).

Servant leadership is a different way of thinking about leadership and leader-follower relationships since this concept focuses on the ideal of service. This type of leadership relates to the way a leader serves his or her subordinates in a humbled way (Graham, 1991).

As cited by Smith (2005) servant leadership can be defined as:

“A model that put serving others as the number one priority. Servant-leadership emphasizes increased service to others; a holistic approach to work; promoting a sense of community; and the sharing of power in decision-making” (p. 4).

Servant leadership has to do with a natural feeling that one wants to serve; it has to do with a conscious choice to lead. A leader must play an integral role in the social setting of any organisation, because behaviour that is demonstrated by leaders towards their subordinates, is crucial for the employees to experience. It is also related with the way in which they make sense of their work responsibilities and environment (Bobbio, Dierendonck & Mangelli, 2012). Thus, a servant leader is one that serves people, but they can also be seen as responsible

moral agents in the working environment as well as in the society (Graham, 1991). Because these leaders are focussed on serving others, they have the ability to nurture relationships amongst employees, which promotes trust between the leader and the employee (Schaubroeck & Lam, 2011).

Servant leadership literature offers a wide range of dimensions that defines the construct and the behaviours of leaders. The research of Liden et al. (2008) was designed to define and validate the nine dimensions they identified: (1) emotional healing (2) creating value for the community (3) conceptual skills (4) empowering (5) helping subordinates grow and succeed (6) putting subordinates first (7) behaving ethically (8) relationships (9) servanthood (see Table 2.10).

**Table 2.10**  
***Servant Leadership Dimensions***

Servant Leadership Dimension	Definition
<b>Emotional Healing</b>	The act of showing sensitivity to others' personal concerns
<b>Creating value for community</b>	A conscious, genuine concern for helping the community
<b>Conceptual Skills</b>	Possessing the knowledge of the organization and tasks at hand so as to be in a position to effectively support and assist others, especially immediate followers
<b>Empowering</b>	Encouraging and facilitating others, especially immediate followers, in identifying and solving problems, as well as determining when and how to complete work tasks
<b>Helping subordinates grow and succeed</b>	Demonstrating genuine concern for others' career growth and development by providing support and mentoring
<b>Putting subordinates first</b>	Using actions and words to make it clear to others (especially immediate followers) that satisfying their work needs is a priority (Supervisors who practice this principle will often break from their own work to assist subordinates with problems they are facing with their assigned duties.)



<b>Behaving ethically</b>	Interacting openly, fairly, and honestly with others
<b>Relationships</b>	The act of making a genuine effort to know, understand, and support others in the organization, with an emphasis on building long-term relationships with immediate followers
<b>Servanthood</b>	A way of being marked by one's self-categorization and desire to be characterized by others as someone who serves others first, even when self-sacrifice is required

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(Liden, Wayne, Zhao, & Henderson, 2008)

#### 2.3.3.4 Ethical Leadership

Ethical leadership should be explored as both a form of social learning as well as social exchange. Some authors such as Brown, Trevino and Harrison (2005) approached their ethical leadership research from a social learning theory perspective, which focussed on the way followers act in a similar manner as their leaders, by making use of observable learning. Some authors on the other hand, approach it from a social exchange approach, such as Mayer, Kuenzi, Greenbaum, Barders and Salvador (2009). This approach, used in the conceptualisation of ethical leadership, enhances the opinion that in organisations followers are willing to respond in a polite and ethical manner, when treated fairly by their leaders (Kalshoven, Den Hartog & De Hoogh, 2011).

As cited by Den Hartog & De Hoogh (2009) "leaders are by nature in a position of social power and ethical leadership focuses on how leaders use their social power in the decisions they make, actions they engage in, and ways they influence others" (p. 201). According to Brown, Trevino & Harrison (2005) leaders can influence their followers' ethical conduct by their own modelling and by rewarding ethical behaviour. It is expected that ethical leader behaviour would have a direct and positive effect on the conduct of the employees, but also on their overall attitudes (Kalshoven & Hartog, 2009).

According to Kalshoven and Den Hartog (2009) one of the key elements of ethical leadership is fairness. Thus, for leaders to serve the organisation in a fair manner, they have to adopt ethical values (fairness, trustworthy and honesty) that is seen as crucial and within this

process leaders might adopt an ethical leadership style (Engelbrecht, Heine & Mahembe, 2015).

There have been different conceptualisations of ethical leadership behaviour within existing literature. In 2005 Brown and his colleagues investigated this domain of leadership in an attempt to identify appropriate ethical leadership behaviours. As cited by Kalshoven and Den Hartog (2009), ethical leadership was 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” (p. 103).

Ethical leaders can also be described as leaders engaging in behaviours that could potentially benefit others, while at the same time they focus on avoiding behaviour that might affect others in a negative manner (Kanungo, 2001). Ethical leaders focus on creating and sharing an ethical vision of the organisation that prepares followers and the organisation for the implementation of the vision and the processes that will follow this vision. In addition, these leaders have the intent and the courage to transform their personal moral intentions into ethical behaviour, which in turn can be seen as consistent behaviour within the organisation (Zhu, May & Avolio, 2004). Den Hartog and De Hoogh (2009) mentioned a few normative views of ethical leadership which propose that “ethical leaders do what (they feel) is morally right through an inner obligation, engage in virtuous acts that benefit others and refrain from evil acts or behaviours that harm others” (p. 201).

The studies done on ethical leadership behaviour tend to focus on only one component of ethical leadership (Den Hartog & De Hoogh, 2009). It is therefore important to start focussing on more than one component with regards to ethical leadership to ensure incorporation of different ethical leadership elements.

The most common dimensions of ethical leadership are fairness and integrity, which can also be perceived as ethical leadership behaviour (Brown et al., 2005). Trevino, Brown & Hartman (2003) found that once leader behaviour reflects fair treatment of employees, it can be seen as a strong contributing factor to the perceptions of ethical leadership. Hartog and Hoogh (2009) proposed that “ethical leaders make principled and fair choices, are trustworthy and honest, do not practice favouritism, treat others with respect, and structure work

environments justly” (p.202). Thus, fairness and integrity can be labelled as ethical leadership behaviours.

However, further investigation lead to another ethical leadership behaviour, which provides followers within an organisation with a voice and allows them to take part in decision-making specifically when it comes to issues that concerns their working environment (Den Hartog & De Hoogh, 2009). It has been found that leaders with altruistic motives make use of certain ethical empowerment strategies (Kanungo & Mendoca, 1996). According to Den Hartog & De Hoogh (2009) “these empowerment strategies are in turn related to followers’ perceptions of benevolent leader intentions” (p. 202). Ethical leaders give followers the opportunity to voice their personal concerns or opinions and notably take part in the organisation’s decision-making process. They listen to their followers, encourage their participation, build confidence and demonstrate interest in their followers’ personal growth and development (Den Hartog & De Hoogh, 2009). It was stated by Resick, Hanges, Dickson & Mitchelson (2006) that “ethical leaders are encouraging and empowering so that followers gain a sense of personal competence that helps them to be self-sufficient” (p. 347). Thus, Den Hartog & De Hoogh (2009) argued that empowerment should be labelled as empowering leader behaviour.

When focussing on empowering leader behaviour it can be seen as a motivational construct, which places focus on employees’ need for self-determination and personal efficacy (Den Hartog & De Hoogh, 2009). Leaders can influence their followers’ behaviour and attitudes directly by focussing on their interactions with them, but also giving them the opportunity to be part of the organisational inputs and success. After investigation of the ethical leadership domain, it is evident how important a leader’s behaviour is for increasing ethical behaviour, trust and perceived leader effectiveness (Kalshoven & Den Hartog, 2009).

#### 2.3.3.5 Measurement of Value-based Leadership

In this section, the following measurement instruments of value-based leadership will be discussed: Multifactor Leadership Questionnaire (MLQ); Authentic Leadership Questionnaire (ALQ); Servant Leadership Survey (SLS); The Ethical Leadership Scale (ELS); Leadership Practices Inventory (LPI) and Ethical Leadership Questionnaire (ELQ).

### **Multifactor Leadership Questionnaire (MLQ)**

Bass developed the MLQ in 1985 with the focus being the assessment of transformational leadership. As documented by Tejeda, Scandura and Pillai (2001) it can be argued that the MLQ “is considered the best validated measure of transformational and transactional leadership” (p. 5).

As cited by Tejeda et al. (2001) “most of the research on the theory has involved the use of a questionnaire called the Multifactor Leadership Questionnaire (MLQ) to measure various aspects of transformational and transactional leadership” (p. 34). The MLQ has been revised on several occasions and is used widely for the assessment of leadership (Den Hartog, Van Muijen & Koopman, 1997). The authors also argued that the MLQ is used by subordinates to rate the behaviour of a leader.

The MLQ consists of nine subscales that can be seen as directly representing the components of the Multifactor Leadership Theory (Tejeda et al., 2001). All items of the MLQ use a five-point Likert response scale ranging from *frequently* to *not at all*. These subscales comprise of five subscales for Transformational leadership (Attributed Charisma, Idealised Influence, Inspirational Leadership, Intellectual Stimulation, and Individual Consideration), three for Transactional leadership (Contingent Reward, Management-by-Exception-Active, Management-by-Exception-Passive) and one for Non-leadership (Laissez-faire).

It is important to take note of the psychometric properties that were documented by these authors in their study. Firstly, the internal consistency reliabilities for the subscales for each sample can be seen as acceptable. All of the reliabilities are above the acceptable minimum (.70), except for two of the subscales in Sample 2 and 3. The internal consistency estimates can be seen in Table 2.11.

**Table 2.11*****Internal consistency estimates for the MLQ subscales***

MLQ Subscales	Sample 1	Sample 2	Sample 3	Sample 4
<b><i>Transformational subscales</i></b>				
AC	.88	.85	.90	.87
II	.86	.89	.91	.91
INSP	.90	.89	.94	.92
IS	.86	.89	.91	.90
IC	.91	.86	.93	.92
<b><i>Transactional subscales</i></b>				
CR	.87	.84	.87	.88
MBEA	.71	.69	.70	.79
MBEP	.82	.85	.90	.85
<b><i>Non-leadership subscale</i></b>				
LF	.82	.85	.88	.78

(Tejeda, Scandura &amp; Pillai, 2001)

As discussed previously, the MLQ consists of nine subscales, which are made up by 21 items measuring the leadership behaviours (Elenkov et al., 2005). Table 2.12 contains some sample items of the MLQ survey.

**Table 2.12*****MLQ Subscales and Items***

MLQ Subscale	Subscale Item
Idealised influence	Makes everyone around him/her enthusiastic about assignments
	I have complete faith in him/her
	Encourages me to express my ideas and opinions
Inspirational motivation	Is an inspiration to us
	Inspires loyalty towards him/her
	Inspires loyalty towards the organization

Intellectual stimulation	<p>His/her ideas have forced me to rethink some of my own ideas, which I have never questioned before</p> <p>Enables me to think about old problems in new ways</p> <p>Has provided me with new ways of looking at things, which used to be a puzzle for me</p>
Individualised consideration	<p>Gives personal attention to members who seem neglected</p> <p>Finds out what I want and tries to help me get it</p> <p>You can count on him/her to express his/her appreciation when you do a good job</p>
Contingent reward	<p>Tells me what to do if I want to be rewarded for my efforts</p> <p>There is a close agreement between what I am expected to put into the group effort and what I can get out of it</p> <p>Whenever I feel like it, I can negotiate with him/her about what I can get from what I accomplish</p>
Management by exception	<p>Asks no more of me than what is essential to get the work done</p> <p>It is all right if I take initiatives, but he/she does not encourage me to do so</p> <p>Only tells me what I have to know to do my job</p>

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(Vera & Crossan, 2004)

In terms of the correlations of the subscales, it was documented that the Transformational Leadership subscales can be seen as highly correlated. This can be an indication of convergent validity for the construct. In terms of the Transformational Leadership scales, it can be seen as negatively related to Management-by-exception subscales and Laissez-faire. This can be seen as a supporting factor for discriminant validity. Also documented by the authors is that the contingent reward subscale that is part of the transactional leadership subscales, is positively related to all the Transformational Leadership subscales.

### **Leadership Practices Inventory (LPI)**

Kouzes and Posner developed the LPI in 1987 with the focus on Transformational Leadership theories. The LPI was originally developed to measure people and what they do when they are considered as doing their 'personal best' while leading others (Berry, 2006). The LPI measures five dimensions that is part of Transformational Leadership and it consists out of 30 items (Zagorsek, Stough & Jaklic, 2006). It is documented by the authors that the LPI can be used for the training and development of leaders, but it is not advised to use it for the selection of leaders. The LPI is used when there is a need to obtain feedback about leadership practices (Carless, 2001).

The psychometric properties of the LPI suggest that there is internal reliability and that the various statements that relate to leadership are highly correlated (Berry, 2006). As documented by the author the "alpha reliability coefficients" range from .75 to .87 in the self-form and from .88 to .99 in the observer form. It can also be argued that the LPI has a high degree of structural equivalence (Zagorsek et al., 2006). The five dimensions that are used in the LPI will be described and defined in terms of existing literature and study done by Zagorsek et al. (2006):

***Challenging the process:*** The leader looks for challenging opportunities, questions various aspects regarding the status quo, and makes use of experiments and taking risks.

***Inspiring a shared vision:*** The degree to which a leader strives to have an exciting future and to help subordinates to enlist that future.

***Enabling others to act:*** The amount of freedom a leader gives subordinates in decision-making and the degree to which a leader uses *empowerment* to strengthen subordinates.

***Modelling the way:*** The leader must consistently practise his or her values and the degree in which a leader sets an example.

***Encouraging the heart:*** The amount of positive feedback a leader gives but at the same time recognising the individual contributions and celebrating team achievements.

The five dimensions of LPI indicate a resemblance in terms of other leadership behaviour dimensions that have been identified in the literature.

### **Leadership Dimensions Questionnaire (LDQ)**

The study done by Dulewics and Higgs in 2005 focussed on existing literature on Transformational Leadership and explored a wide range of contexts. The purpose of their study was to investigate the new LDQ and an additional related framework for assessing individual leadership style in relation to the context in which a leader works (Dulewics & Higgs, 2005).

In their study they used item analysis to refine the questionnaire by doing two pilot studies. The final version of the LDQ contains 7 EQ, and 3 IQ and 5 MQ dimensions, which they refined from 175 test items. Table 2.13 contains the 15 LDQ scales, titles and an adapted definition.

**Table 2.13**

***Definitions of the subscales of the LDQ***

Subscale Definitions	Definition of the subscales of the LDQ
<b>Intellectual dimensions (IQ)</b>	
<i>(a) Critical analysis and judgement</i>	Being able to make sound judgements and decisions that is based on facts and information.
<i>(b) Vision and imagination</i>	Innovation and imagination in all work-related aspects. This should include having a clear vision of the future and the direction in which you are moving.
<i>(c) Strategic perspective</i>	Seeing a wider range of issues and the broad implications thereof. Exploring relationships to sensitise themselves to external threats and opportunities.
<b>Managerial dimensions (MQ)</b>	
<i>(d) Resource management</i>	Plans ahead, organises all resources and coordinates them efficiently and effectively.



Being able to monitor and evaluate staff members' work on a regular basis.

*(k) Engaging communication*

Clearly communicates within an organisation in a manner that inspires staff members and audiences.

*(l) Empowering*

Gives staff autonomy, encourages them to take on personally challenging demanding tasks. Encourages employees to solve their own problems and produce innovative ideas and perspectives.

*(m) Developing*

Believes others have potential to take on more-demanding tasks and roles and encourages them to do so. Contributes towards the development of competencies and invests time and effort into coaching employees.

*(p) Achieving*

Willing to make decisions involving significant risk to gain an advantage. Decisions are based on core business issues and their likely impact on success.

**Emotional and social dimensions (EQ)**

*(e) Self-awareness*

Being aware of your own feelings and then having the capability to recognize and manage these in a way that one feels in control. A degree of self-belief in one's capability to manage one's emotions and to control their impact in a work environment.

<i>(f) Emotional resilience</i>	Performs consistently in different situations under pressure and adapts behaviour appropriately.
<i>(g) Intuitiveness</i>	Can reach clear decisions and drives the implementation thereof when presented with incomplete or ambiguous information using both rational and 'emotional' or intuitive perceptions of key issues and implications.
<i>(h) Interpersonal sensitivity</i>	A willingness to keep one's mind open to possible solutions to problems and to actively listen to, and reflect on, the reactions and inputs from others. Takes needs and perceptions of others into consideration when making decisions and proposing solutions.
<i>(j) Influence</i>	Persuades others to change their views, based on an understanding of their position and a recognition of the need to listen to this perspective and provide a rationale for change.
<i>(n) Motivation</i>	Have the energy to drive and achieve clear results and make a valuable impact.
<i>(q) Conscientiousness</i>	Shows personal commitment to pursue an ethical solution for a difficult business issue or problem.

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(Adapted from Dulewics & Higgs, 2005)

The data analysis of the study done by Dulewics & Higgs indicated that all 15 LDQ scale reliability coefficients reached an acceptable level of .7 and above. According to them, the content validity was derived from the rigour with which all facets of leadership were reviewed and mapped onto the 15 dimensions (p. 112). The LDQ provides a reliable measure to help respondents to identify the most appropriate leadership behaviour within the organisational

context. It is also evident that the LDQ can be used within the broad spectrum of leadership behaviours.

### **Authentic Leadership Questionnaire (ALQ)**

The ALQ is a widely used instrument and was developed by Avolio, Gardner and Walumbwa in 2005. This instrument addresses different variables, namely: self-awareness, relational transparency, internalised moral perspective and balanced processing (Walumbwa, Avolio, Gardner, Wernsing & Peterson, 2008).

The ALQ is a measurement instrument that is concerned with subordinates' perceptions rather than measuring the objective leader behaviours directly (Caza, Bagozzi, Woolley, Levy & Caza, 2010)

Walumbwa et al. (2008) used both deductive and inductive approaches for the development of the items. Authentic leadership is measured by using the 16-item ALQ. This measurement instrument contains items that describe behaviours that are suitable for leaders (Caza et al., 2010). The items used within this questionnaire were distributed as follows: self-awareness (4 items), relational transparency (5 items), internalised moral perspective (4 items) and balanced processing (3 items).

Table 2.14 contains some of the items that are used in the Authentic Leadership Questionnaire for each of the variables.

**Table 2.14**  
***Items of the ALQ***

Authentic Leadership Construct	Item
<b>Self-Awareness</b>	Seeks feedback to improve interactions with others.
	Accurately describes how others view his/her capabilities.
<b>Relational Transparency</b>	Says exactly what he/she means.
	Is willing to admit mistakes when they are made.
<b>Internalised Moral Perspective</b>	Demonstrates beliefs that are consistent with actions.
	Makes decisions based on his/her core beliefs.

**Balanced Processing**

Solicits views that challenge his/her deeply held positions.

Listens carefully to different points of view before coming to conclusions.

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(Walumbwa, Avolio, Gardner, Wernsing & Peterson, 2008).

Respondents use a five-point scale to rate the number of times that a leader engaged in the specific behaviour. The estimated internal consistency alphas for each subscale were at acceptable levels: self-awareness 0.92; relational transparency 0.87; internalised moral perspective 0.76; and balanced processing 0.81 (Walumbwa et al. 2008). The study compared the fit of three different factor structures namely the one factor model, the first-order factor model and the second-order factor model. They conducted a CFA and the results showed that the higher-order ALQ model fit the data best (CFI = 0.97, RMSEA = 0.06 and  $df = 0.95$ ). The average correlation among the four subscales was 0.67 and the standardised factor loadings of the second-order factor authentic leadership model range between 0.66 and 0.93.

**Servant Leadership Survey (SLS)**

To date adequate research was done regarding six instruments of servant leadership as well as extensive psychometric development, reported by peer-reviewed literature (Green, Rodriguez, Wheeler & Baggerly-Hinojosa, 2015). The current instruments that measure servant leadership is Servant Organisational Leadership Assessment (Laub, 1999); Servant Leadership Scale (Ehrhart, 2004); Servant Leadership Questionnaire (Barbuto & Wheeler, 2006); Servant Leadership Scale (Liden, Wayne, Zhao & Henderson, 2008); Servant Leadership Behaviour Scale (Sendjaya, Sarros & Santora, 2008); and Servant Leadership Survey (Van Dierendonck & Nuijten, 2011).

For the purpose of this study, the Servant Leadership Survey (SLS) has been selected because it measures moral-related leadership behaviour. According Van Dierendonck and Nuijten (2011) “the SLS primarily focuses on the leader-follower relationship measured from the perspective of the follower” (p. 251). The SLS measures eight dimensions of servant leadership. Table 2.15 demonstrates these eight dimensions.

**Table 2.15**  
***Servant Leadership Survey Dimensions***

SLS Dimensions	Definition
<b>Empowerment</b>	A motivational concept focused on enabling people and encouraging personal development.
<b>Accountability</b>	Holding people accountable for performances that they can control.
<b>Standing back</b>	The extent to which a leader gives priority to the interests of others by giving them the necessary support and credit.
<b>Humility</b>	The ability to put one's own accomplishments and talents in proper perspective.
<b>Authenticity</b>	Closely related to expressing the 'True Self,' expressing oneself in ways that are consistent with inner thoughts and feelings.
<b>Courage</b>	The ability to take risks and try out new approaches for old problems.
<b>Forgiveness</b>	The ability to understand and experience the feelings of others, and the ability to let go of perceived wrongdoings by not carrying a grudge and transferring it to other situations.
<b>Stewardship</b>	The willingness to take responsibility for the larger institution and go for service instead of control and self-interest.

(Green, Rodriguez, Wheeler & Baggerly-Hinojosa, 2015)

The original development of this instrument was done in three stages. Within the three stages the items in the survey was reduced from 99 items to 30 items. According to Green et al. (2015), they found the following Cronbach Alpha's for the combined sample of all three studies: .89 for empowerment (7 items), .81 for accountability (3 items), .76 for standing back (3 items), .91 for humility (5 items), .82 for authenticity (4 items), .69 for courage (2 items), .72 for forgiveness (3 items) and .74 for stewardship (3 items). The reliability with regards to the internal consistency, was acceptable for all the scales.

Table 2.16 contains a layout of these dimensions and items that are used for the development and validation of the SLS by Van Dierendonck and Nuijten (2011).

**Table 2.16*****Servant Leadership Survey Items per dimension***

SLS Dimension	Item per dimension
<b>Accountability</b>	<p>My manager holds me responsible for the work I carry out.</p> <p>I am held accountable for my performance by my manager.</p> <p>My manager holds me and my colleagues responsible for the way we handle a job.</p>
<b>Empowerment</b>	<p>My manager gives me the information I need to do my work well.</p> <p>My manager encourages me to use my talents.</p> <p>My manager helps me to further develop myself.</p> <p>My manager encourages his/her staff to come up with new ideas.</p> <p>My manager gives me the authority to take decisions, which makes work easier for me.</p> <p>My manager enables me to solve problems myself instead of just telling me what to do.</p> <p>My manager offers me abundant opportunities to learn new skills.</p>
<b>Standing back</b>	<p>My manager keeps himself/herself in the background and gives credit to others.</p> <p>My manager is not chasing recognition or rewards for the things he/she does for others.</p> <p>My manager appears to enjoy his/her colleagues' success more than his/her own.</p>
<b>Humility</b>	<p>My manager learns from criticism.</p> <p>My manager tries to learn from the criticism he/she gets from his/her superior.</p> <p>My manager admits his/her mistakes to his/her superior.</p> <p>My manager learns from the different views and opinions of others.</p> <p>If people express criticism, my manager tries to learn from it.</p>

<b>Authenticity</b>	<p>My manager is open about his/her limitations and weaknesses.</p> <p>My manager is often touched by the things he/she sees happening around him/her.</p> <p>My manager is prepared to express his/her feelings even if this might have undesirable consequences.</p> <p>My manager shows his/her true feelings to his/her staff.</p>
<b>Courage</b>	<p>My manager takes risks even when he/she is not certain of the support from his/her own manager.</p> <p>My manager takes risks and does what needs to be done in his/her view.</p>
<b>Forgiveness</b>	<p>My manager keeps criticizing people for the mistakes they have made in their work.</p> <p>My manager maintains a hard attitude towards people who have offended him/her at work.</p> <p>My manager finds it difficult to forget things that went wrong in the past.</p>
<b>Stewardship</b>	<p>My manager emphasizes the importance of focusing on what would be the best for everyone.</p> <p>My manager has a long-term vision.</p> <p>My manager emphasizes the societal responsibility of our work.</p>

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(Van Dierendonck & Nuijten, 2011)

After considering the extensive development and validation of the SLS, it can be concluded that the instrument is valid and reliable to measure servant leadership.

### **The Ethical Leadership Scale (ELS)**

Brown, Trevino and Harrison (2005) are responsible for the development of the Ethical Leadership Scale. Within the development stage, the ELS consisted of 48 items, which were followed by a 5-point Likert-type response format. For *Study 1* they conducted an exploratory factor analysis (EFA) with an oblique rotation, which allowed opportunity for correlation

between factors. They conducted twenty in-depth interviews with MBA students where each student was asked to describe the characteristics and behaviours of their supervisor they classified as an ethical leader. After analysis of the recorded responses, the authors selected 10 items which were part of the concise scale.

The authors then continued with *Study 2* where they included the 10 item proposed measure. They performed a second EFA analysis using oblique rotation. All factors loaded strongly on the one-factor solution, varying from 0.50 to 0.98, therefore they retained all items. Brown et al. (2005) also indicated that the ELS demonstrated excellent internal consistency of  $\alpha = 0.92$  which formed a coherent construct.

In *Study 3* the authors conducted a confirmatory factor analysis and maximum likelihood estimation to test the proposed one-factor model as indicated in study 2. After analysis, the fit-indices showed that a unidimensional model fit the data well. Their fit indices, after performing the CFA, indicated above recommended standards, CFI = 0.98; RMSEA = 0.06; NNFI = 0.97 and SRMR = 0.04. It was recorded by the authors that the ELS demonstrated high internal consistency ( $\alpha = 0.91$ ).

In *Study 4* done by the authors, they conducted an in-depth expert rating investigation to ensure the content of the ELS is adequate and it is distinct from other related constructs. It was documented by Brown et al. (2005) that all “10 ELS items were rated as significantly more likely to represent ethical leadership than passive avoidant leadership” (p. 125).

*Study 5* focussed on testing the nomological validity of ethical leadership which resulted once again in a high internal consistency estimate for the ELS ( $\alpha = .94$ ). The ELS in addition, showed positive correlations with consideration and affective trust ( $r=0.76$ ,  $p<0.001$ ); and negative correlations with abusive supervision ( $r = 0.61$ ,  $p < 0.001$ ). With regards to the discriminant validity, there were no correlations between age and gender of the respondents and the reports of the ethical leadership of their supervisors.

The discriminant validity and nomological validity was further established in *Study 6* for the ELS. Discriminant validity was established because there were no observed relationships between the measured constructs (trusting subscale, cynicism subscale and social subscale) and ethical leadership. After analysis, the internal coherence of the test was proved to be high once again ( $\alpha = .93$ ). The final study done was to establish the utility of the construct itself.



*Study seven* focussed on three different samples. With regards to the ELS' nomological validity the authors found positive relationships between ethical leadership and leader honesty ( $r = 0.65, p < 0.001$ ), interactional fairness ( $r = 0.24, p < 0.01$ ), supervisor effectiveness ( $r = 0.16, p < 0.05$ ), satisfaction with supervisor ( $r = 0.22, p < 0.01$ ), extra effort or job dedication ( $r = 0.21, p < 0.01$ ) and employee willingness to report problems ( $r = 0.17, p < 0.05$ ). In addition, they found that the incremental validity of this model was supported by the evidence found in the structural equation modelling.

Table 2.17 contains a layout of the ELS items used for the development and validation of the ELS by Brown *et al.* (2005).

**Table 2.17**

***ELS Items***

Ethical Leadership Scale Items
Listens to what employees have to say
Disciplines employees who violate ethical standards
Conducts his/her personal life in an ethical manner
Has the best interests of employees at heart
Makes fair and balanced decisions
Can be trusted
Discusses business ethics or values with employees
Sets an example of how to do things the right way in terms of ethics
Defines success not just by results, but also by the way that they are obtained
When making decisions, asks the question, "what is the right thing to do?"

(Brown, Trevino & Harrison, 2005)

After considering the extensive development and validation of the ELS, it can be concluded that the scale is valid and reliable to measure ethical leadership.

**Ethical Leadership Questionnaire (ELQ)**

The study by Yukl, Mashud, Hassan and Prussia (2013) was done to identify the most important qualities to include in a measure for ethical leadership, and to develop a measure that minimizes confounding with other related measures.

The ELQ included 15 items, which contained a 6-point Likert style format. The items used in the study done by Yukl et al. (2013) described various aspects of ethical leadership such as honesty, integrity, fairness, altruism, consistency of behaviours with espoused values, communication of ethical values, and providing ethical guidance. For the purpose of this study test items were adapted from prominent previous studies such as the ELS (Brown et al., 2005); the PLIS (Craig & Gustafson, 1998); and the morality and fairness scale that was used in the study of De Hoogh and Den Hartog (2008). These items were adapted and used because of their strong and positive contribution to the development of the LBS.

Exploratory and confirmatory factor analysis was used to assess the discriminant validity of the ELQ. The authors used principle components, and oblique rotation resulted in four distinct factors which corresponded with task behaviours, relations behaviours, change behaviours and ethical behaviours. According to Yukl et al., (2013) “the factor loadings demonstrated clear distinction between items where only three ELQ items had cross loadings on the MPS relations-orientated factor that exceeded 0.3 and none of those loadings reached 0.4” (p. 43). After CFA was performed for the ELQ, an adequate fit was found. Internal reliability estimates for the six behavioural scales exceeded 0.74 with the ELQ demonstrating an alpha value of 0.96.

In conclusion, the ELQ demonstrated high reliability, discriminant and criterion-related validity, where the factor analysis indicated that the ELQ items are distinct from task- and change-orientated behaviours. In addition, criterion-related validity was demonstrated, which indicated that ethical leadership could explain additional variance, focussing on the indicators of a leader’s influence when it comes to the quality of the relationship with their subordinates. Table 2.18 contains a layout of the ELQ items used for the development and validation of the ELQ by Yukl et al. (2013).

**Table 2.18**

***ELQ Items***

Ethical Leadership Questionnaire (My boss...)
shows a strong concern for ethical and moral values.
communicates clear ethical standards for members.
sets an example of ethical behaviour in his/her decisions and actions.

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is honest and can be trusted to tell the truth.  
keeps his/her actions consistent with his/her stated values (“walks the talk”).  
is fair and unbiased when assigning tasks to members.  
can be trusted to carry out promises and commitments.  
insists on doing what is fair and ethical even when it is not easy.  
acknowledges mistakes and takes responsibility for them.  
regards honesty and integrity as important personal values.  
sets an example of dedication and self-sacrifice for the organization.  
opposes the use of unethical practices to increase performance.  
is fair and objective when evaluating member performance and providing rewards.  
puts the needs of others above his/her own self-interest.  
holds members accountable for using ethical practices in their work.

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(Yukl, Mashud, Hassan & Prussia, 2013)

After considering the extensive development and validation of the instrument by Yukl, et al. (2013) it can be concluded that the ELQ is valid and reliable to measure ethical leadership.

#### **Den Hartog and De Hoogh (2009)**

The study done by Den Hartog and De Hoogh in 2009 used two ethical leadership behaviour scales to develop a scale, which could be used to measure ethical leadership. The scale consists of two perceived ethical leadership dimensions namely, perceived empowering behaviour and perceived fairness and integrity. Both these dimensions will be discussed in this section.

The items for the perceived empowering behaviour dimension were rated on a 5-point scale which ranged from strongly disagree to strongly agree and the Cronbach alpha for the empowering behaviour were captured as 0.95 in the study done by Den Hartog and De Hoogh (2009). Table 2.19 and 2.20 contains the items that were used in the development of the perceived ethical leadership scale.

Seven items measured fairness and integrity which were also rated in a 5-point scale that ranged from strongly disagree to strongly agree. The Cronbach alpha for the fairness and integrity scale was captured at 0.92 in the study of Den Hartog and De Hoogh (2009). Table

2.20 contains the items that were used in the development of the second perceived ethical leadership scale.

**Table 2.19**

***Perceived Ethical Leadership Scale – Empowering Behaviour***

Perceived Empower Behaviour (My supervisor...)
Involves me in decisions that affect my work
Asks for my opinion
Allows me to have a say in matters concerning my work
Consults me regarding important changes in my task
Offers me the possibility to bear responsibility
Allows me to set my own goals
Shows confidence in my ability to contribute to the goals of this unit
Lets me have a strong hand in setting my own performance goals
Demonstrates total confidence in me
Listens to my problems and concerns
Works with me individually, rather than treating me as just another member of the group
Provides advice whenever I need it
Is genuinely concerned about the growth and development of subordinates
Looks out for my personal welfare

(Den Hartog & De Hoogh, 2009)

**Table 2.20**

***Perceived Ethical Leadership Scale – Fairness and Integrity***

Perceived Empower Behaviour (My supervisor...)
Does not behave in a manner that is consistent with the values he/she expresses
Manipulates subordinates
Holds me responsible for things that are not my fault
Clearly has favourites among subordinates
Does not take things I propose seriously
Holds me accountable for work that I have no control over
Acts without considering my feelings or views

(Den Hartog & De Hoogh, 2009)

### 2.3.4 Strategic Leadership Behaviours

Strategic leadership is one of the most important aspects regarding achieving and maintaining strategic competitiveness in the 21<sup>st</sup> century (Elenkov, Judge & Wright, 2005). According to Serfontein (2010) “strategic leaders should focus on the future, to create excitement for the future, as well as for what is happening today” (p.4). Strategic leaders should be aware of their own organisation’s conditions, their direct environment and the challenges that they are faced with.

A successful strategic leader needs the ability to think strategically and emotionally in an intelligent way (Serfontein, 2010). Creating sustainable competitive advantage is the objective of most companies, thus creating an environment where strategic leadership can be exercised, will increase the return on investment of the organisation (Ireland & Hitt, 1999). Strategic leadership was defined by Ireland and Hitt (1999) “as a person’s ability to anticipate, envision, maintain flexibility, think strategically, and work with others to initiate changes that will create a viable future for the organization” (p. 43). This leadership style has been recognised for the important role it plays in identifying opportunities and making decisions that affect the innovation processes (Elenkov et al. 2005). Strategic leaders influence organisational innovation processes in several ways. These leaders are capable of identifying different environmental trends that can affect the organisation’s future and according to Elenkov et al. (2005) “provides more effective communication to the rest of the organisation and this leads to higher levels of organisational innovation” (p. 669).

The role and behaviour of strategic leaders can be compared to that of effective top managers. Serfontein (2010) argued that “they should have a range of behaviours available and have the wisdom to apply the right combination of behaviours at the right time” (p. 8). These leaders can be classified within the framework of transactional and transformational leadership (Vera & Crossan, 2004). In a study done by Davies and Davies (2004) they attempted to identify successful behaviours and classify strategic leaders into behavioural categories: strategically orientated; translate strategy into action; align people and organisations; determine effective intervention points; develop strategic capabilities; absorptive capabilities; adaptive capacity and leadership wisdom (Davies & Davies, 2004). This is an indication that strategic leaders should have the ability to demonstrate envisioning behaviours that could lead to greater successes for the organisation in the future.

Yukl (2013) discussed different guidelines that are important for a strategic leader. These were determining objectives and priorities, learning what the needs are of clients and employees, and being able to assess the strengths and weaknesses of an organisation. Behaviours that can be identified from strategic leadership after analysis of the literature are *planning, having a vision, openness to change and flexibility*.

Employees lead by leaders that are classified as strong and effective, are more likely to be more satisfied, engaged and loyal (Serfontein, 2010). Once a leader succeeds in developing a vision, the entire organisation and the position it has within the competitive environment, can be analysed. Visionary leadership is another stream of leadership that can be defined as placing emphasis on the importance of vision and how it will affect the organisation's future (Elenkov *et al.*, 2005).

#### 2.3.4.1 Measurement of Strategic Leadership Behaviours

In this section, the following measurement instruments of strategic leadership will be discussed: Leadership Dimensions Questionnaire (LDQ), and the study done by Larsson and Vinberg (2010).

##### **Leadership Dimensions Questionnaire (LDQ)**

As discussed earlier the study done by Dulewics and Higgs in 2005 focussed on existing literature and explored a wide range of contexts. The purpose of their study was to investigate the new LDQ and an additional related framework for assessing an individual's leadership style, in relation to the context in which a leader works (Dulewics & Higgs, 2005).

In the study done by them, they made use of item analysis to refine the questionnaire by doing two pilot studies. Table 2.13 contains the 15 LDQ dimensions. The dimensions of vision and imagination, and strategic perspective, would be appropriate to measure strategic leadership in particular. Strategic leaders should have a clear vision of the future and the direction in which the organization is developing. They should also sensitise themselves to external threats and opportunities (Dulewics & Higgs, 2005).

##### **Larsson and Vinberg (2010)**

In the study done by Larsson and Vinberg (2010) it was argued that various organisational leadership behaviours has a critical role in the overall success of the organisation. By

identifying successful and effective leadership behaviours, they used a comparative qualitative method. The study done by them used three different organisations to identify common organisational leadership behaviours. They managed to identify, through the comparative qualitative strategy, nine groups of behaviours:

1. Strategic and visionary leader role
2. Communication and information
3. Authority and responsibility
4. Learning culture
5. Worker conversations
6. Plainness and simplicity
7. Humanity and trust
8. Walking around
9. Reflective personal leadership

The dimensions of strategic and visionary leadership would be appropriate to measure strategic leadership. As previously discussed, it is important that strategic leaders should have a clear vision of their organisation's future and they should be aware of the direction of the development.

#### **2.4 COMPREHENSIVE MEASURE OF ORGANISATIONAL LEADERSHIP BEHAVIOUR**

In this section, the Leadership Behaviour Inventory (LBI) developed by Theron and Spangenberg (2011) is discussed as an example of an integrated and comprehensive measuring instrument of holistic leadership in the workplace.

Leadership effectiveness was considered important in the development of the Leadership Behaviour Inventory (LBI). Theron and Spangenberg (2011) felt that in terms of leadership in South Africa it is important to keep in mind that organisations must "lead change" and ensure the effectiveness of "unit performance".

The LBI was developed to measure effective leadership in order to ensure competitiveness within the working environment. It is focussed on the various demands that contribute to a leader's ability to lead people, drive change, and manage working performance effectively (Theron & Spangenberg, 2011). The LBI is based on the interpretation of leadership as a

construct that contains various elements such as leadership, management, and supervision. According to Van Zyl (2013), if one focuses on the general leadership definition, it can be argued that it correlates with transformational leadership, and it incorporates various behaviours such as “visioning, providing meaning, instilling values” and it stimulates “high levels of effort from employees who transcend beyond their own self-interest to achieve a vision” (p. 44).

The original LBI (Spangenberg & Theron, 2002) that consisted of 24 dimensions was reduced to 20 dimensions and was renamed to the LBI-2 (Theron & Spangenberg, 2011). In terms of the sample, the authors used 1504-unit leaders that were rated by their supervisors, peers and subordinates. They eliminated items that did not contribute to the “internally consistent description of the leadership performance in question” (Theron & Spangenberg, 2011).

From the five-factor model of the LBI a selection of the most appropriate behaviours from the first-order dimensions were made. The 10 selected dimensions are listed in Table 2.21 below. An adapted definition of each dimension is also given.

**Table 2.21**

***First and Second-order dimensions selected from the LBI***

First and Second-order dimensions	Definition of First and Second-order dimensions
<b>1.Organisational/unit: rational analytical</b>	
<i>1.1 Developing a challenging vision</i>	Development of a process that gives people a sense of purpose by helping to set goals, make plans and solve problems, focus on customers, and advances diversity of people.
<b>2. Organisational/unit: affective-interactive</b>	
<i>2.1 Articulating the vision and enlisting subordinates</i>	Giving a clear picture of what the future will look like so that it gives direction to subordinates while at the same time making them excited and committed.



### **3. Team/ interpersonal: rational analytical**

#### *3.1 Rewarding Performance*

When a follower achieved a form of success it must be acknowledged and celebrated.

### **4. Team/interpersonal: affective-interactive**

#### *4.1 Building Trust*

When building trust, it contributes to confidence as a unit, an ethical way of making decisions is used, and being honest in terms of stakeholders is also achieved.

#### *4.2 Empowering Subordinates*

Contributes personal time to the development and growth of subordinates. This is accomplished by using available resources to enhance skills.

#### *4.3 Facilitating Learning*

Encourages the idea of continuous learning by helping the subordinates to express ideas and feelings to ensure a full understanding of the problem.

#### *4.4 Displaying sound interpersonal skills*

Having the necessary skills to solve problems regarding conflict or other situations and having the ability to handle different group and interpersonal relations.

#### *4.5 Showing concern for others*

Taking into consideration the different needs, feelings and aspirations of other people.

#### *4.6 Inspiring people*

By using skills, a leader can raise the confidence and motivation of subordinates.

## 5. Intra-personal

### 5.1 *Acting honestly and with integrity*

Consider ethical implications of decisions as important. Important to remember that if one agrees upon certain values, it must be the norm to stick to those values and deal with stakeholders in an honest manner.

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(Theron & Spangenberg, 2011)

It is argued that the leadership dimensions presented in Table 2.21 can be seen as relevant to elements of a relationship, task, change and ethical orientated leadership. It can also be argued that the behaviours that are present in the LBI are essential for a leader to be successful and effective in most organisational environments. Although, the LBI can be regarded as a comprehensive measure of leadership behaviour it is a very long questionnaire which consists out of 24 dimensions and 235 items that was originally developed more than 15 years ago (Spangenberg & Theron, 2002). In a volatile business context within South Africa the LBI might be outdated and might also have a limited focus on recent developments regarding change, ethical and strategic leadership behaviours.

## 2.5 DEVELOPMENT OF THE LEADERSHIP BEHAVIOURAL SCALE (LBS)

It is evident that the construct domain of leadership behaviours is broad, volatile and complex, and that a variety of these behaviours are relevant in measuring the construct of leadership behaviours. There seems to be strong consensus in the existing literature on the dimensions that exist in the taxonomies focussing on task, relationship, change, value-based and strategic leadership orientations. Thus, to develop a basic structure of the leadership behaviour measure, it is important that one compares the different models to the literature in this literature study. It is important to notice that the identified dimensions might overlap and that a synthesised few will be part of the proposed measurement scale.

After critically reviewing the literature, the various authors identified the dimensions that appeared most frequently and those that are relevant for specific leadership behaviours. In general, these dimensions are communication, empowerment, honesty, planning, problem-solving, motivation, rewards, etc. After research was done on effective leadership these

leadership qualities/behaviours appear to be distinct. They were all integrated with other distinct leadership behaviours, specifically focussing on task, relationship, change, value-based and strategic leadership. Table 2.22 contains the suggested dimensions that will be used for this study.

**Table 2.22*****Comparison of Leadership Behaviours in existing literature***

<b>Proposed Leadership Dimension</b>	<b>Related Leadership dimensions in the literature</b>	<b>Studies listing the dimensions</b>
Empowerment of Subordinates	Empowering	Yukl, Gordon and Taber (2002)
	Delegating	Mahsud, Yukl and Prussia (2009)
	Empowering Subordinates	Spangenberg and Theron (2011)
	Tolerance and Freedom	Stogdill (1963)
	Intellectual Stimulation	Bass (1985)
	Enabling others to act	Kouzes and Posner (1987)
	Recognising	Yukl, Gordon and Taber (2002)
		Amabile, Schatzel, Moneta and Kramer (2004)
	Rewarding	Mahsud, Yukl and Prussia (2009)
		Amabile, Schatzel, Moneta and Kramer (2004)
	Rewarding Performance	Kramer (2004)
	Contingent Reward	Bass (1985)
	Encouraging the heart	Spangenberg and Theron (2011)
		Bass (1985)
	Kouzes and Posner (1987)	
Empowerment	Green, Rodriguez, Wheeler and Baggerly-Hinojosa (2015)	
Interpersonal Acceptance	Baggerly-Hinojosa (2015)	
Empowering Behaviour	Den Hartog and De Hoogh (2009)	
Contingent Reward	Vera and Crossan (2004)	
Idealised Influence	Bass (1985)	

	Intellectual Stimulation	Bass (1985)
	Empowering	Dulewics and Higgs (2005)
Support and Consideration	Supporting	Yukl, Gordon and Taber (2002)
		Amabile, Schatzel, Moneta and Kramer (2004)
	Support	Mahsud, Yukl and Prussia (2009)
	Identifying Needs and Requirements	Fleishman et al. (1991)
	Planning and coordinating	Stogdill (1963)
	Consideration	Bass (1985)
	Individualised Consideration	Spangenberg and Theron (2011)
	Showing concern for others	Avolio and Gardner (2005)
	Supporting self-determination	Reed, Cohen and Colwell (2011)
	Interpersonal support	
	Individualised consideration	Judge and Piccolo (2004)
	Empathy	Penner et al. (1995)
	Altruism	Allen (2003)
	Balanced Processing	Walumbwa, Avolio, Gardner, Wernsing and Peterson (2008)
	Accountability	Green, Rodriguez, Wheeler and Baggerly-Hinojosa (2015)
Standing Back		
Fairness and Integrity	Den Hartog and De Hoogh (2009)	
Employee Development	Developing	Yukl, Gordon and Taber (2002)
	Developing and mentoring	Amabile, Schatzel, Moneta and Kramer (2004)
		Mahsud, Yukl and Prussia (2009)
	Develop	Fleishman et al. (1991)
	Designing Personnel Resources	Spangenberg and Theron (2011)
	Facilitate Learning	
	Challenging the process	Kouzes and Posner (1987)
	Empowering Behaviour	Den Hartog and De Hoogh (2009)

	Developing Accountability	Dulewicz and Higgs (2005) Van Dierendonck and Nuijten (2011) Green, Rodriguez, Wheeler and Baggerly-Hinojosa (2015)
	Development	Bass and Avolio (1995)
Consultation	Consulting	Yukl, Gordon and Taber (2002) Amabile, Schatzel, Moneta and Kramer (2004)
	Consult	Mahsud, Yukl and Prussia (2009)
	Consultative	
	Openness to different opinions	Fleishman et al. (1991)
	Communicating Information	Fleishman et al. (1991)
	Feedback and Control	Stogdill (1963)
	Representation	Lee et al. (2006)
	Listening	Amabile, Schatzel, Moneta and Kramer (2004)
	Managing conflict and Team building	Kramer (2004)
	Displaying sound interpersonal skills	Spangenberg and Theron (2011)
	Demand Reconciliation	Stogdill (1963)
	Integration	Reed, Cohen and Colwell (2011)
	Egalitarianism	Saeed (2008)
	Negotiation skills	
	Self-compromise	
	Empowering Behaviour	Den Hartog & De Hoogh (2009)
	Ethical Leadership Scale	Brown, Trevino and Harrison (2005)
	Authentic Leadership Questionnaire	Walumbwa, Avolio, Gardner, Wernsing & Peterson (2008)
Task Planning	Short term planning	Yukl, Gordon and Taber (2002)
	Planning and Coordinating	Fleishman et al., (1992)
	Planning and Organising	Amabile et al., (2004)
	Clarifying responsibilities and performance objectives	Yukl, Gordon and Taber (2002)

	Obtaining and Allocating Material Resources	Fleishman et al., (1992)
	Problem Solving	Amabile et al., (2004)
	Clarifying Roles and Objectives	Amabile et al., (2004)
	Prioritise Activities	Horner – Long and Schoenberg (2002)
	Establish Strategic Controls	Horner – Long and Schoenberg (2002)
	Articulating the vision and enlisting subordinates	Theron & Spangenberg (2011) Rodriguez et al. (2012)
	Initiation of Structure	Zagorek et al., (2006)
	Challenging the process	Dulewicz and Higgs (2005)
	Achieving Resource Management	
	Task Planning	Bass and Avolio (1995)
Monitoring	Monitoring Operations and Performance	Yukl, Gordon and Taber (2002)
	Production Emphasis	Rodriguez (2012)
	Set clear Expectations	Horner, Long and Schoenberg (2002)
	Informing	Amabile et al., (2004)
	Critical analysis and judgement	Dulewicz and Higgs (2005)
	Accountability	Van Dierendonck and Nuijten (2011)
	Ethical leadership	Wolmarans (2014)
Networking	Networking	Amabile et al., (2004)
	Network Extensively	Horner, Long and Schoenberg (2002)
	Share Knowledge	Horner, Long and Schoenberg (2002)
	Networking	Forret and Dougherty (2001)
	Strengthen others	Gaughan (2001)
	Networking	Yukl (2013)
	Social Interaction	Myburg (2013)
Leading Change	External Monitoring	Yukl, Gordon and Taber (2002)
	Envisioning Change	Yukl, Gordon and Taber (2002)
	Encouraging Innovating Thinking	Yukl, Gordon and Taber (2002)

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	Taking Personal Risks	Yukl, Gordon and Taber (2002)
	Inspirational Leadership	Tejeda et al., (2011)
	Intellectual Stimulation	Tejeda et al., (2011)
	Exploiting Technology	Horner, Long and Schoenberg (2002)
	Courage	Green, Rodriguez, Wheeler and Baggerly-Hinojosa (2015)
	External Change	Larsson & Vinberg (2010)
	Vision and imagination	Dulewicz and Higgs (2005)
	Intellectual stimulation	Bass and Avolio (1995)
	Change Leadership	Herhold, Fedor, Caldwell and Liu (2008)

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Ethical Behaviour	Enabling the leader and the unit to implement the ethical vision	Spangenberg and Theron (2005)
	Implementing the ethical vision	Spangenberg and Theron (2005)
	Leading ethical initiatives and rewarding ethical contributions	Spangenberg and Theron (2005)
	Moral integrity	Reed, Cohen and Cowell (2011)
	Altruism	
	Motivating and inspiring	Amabile, Schatzel, Moneta and Kramer (2004)
	Motivating Personnel Resources	Kramer (2004)
	Inspiring people	Fleishman et al., (1992)
	Inspirational motivation	
	Acting honestly and with integrity	Bass (1985)
	Building Trust	Kouzes and Posner (1987)
	Superior Orientation	Spangenberg and Theron (2011)
	Idealised Influence	Stogdill (1963)
	Modelling the way	Bass (1985)
	Positive modelling	Kouzes and Posner (1987)
	Internalised Moral Perspective	Avolio and Gardner (2005)
	Humility	Walumbwa, Avolio, Gardner, Wernsing and Peterson (2008)

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	Authenticity	Green, Rodriguez, Wheeler and Baggerly-Hinojosa (2015)
	Stewardship	
	Honesty	
	Fairness	Yukl, Mashud, Hassan and Prussia (2013)
	Communication of ethical values	
	Ethical Leadership Scale	Brown, Trevino and Harrison (2005)
	Ethical Leadership	Wolmarans (2014)
Strategic team leadership	Creating and sharing ethical vision	Spangenberg and Theron (2005)
	Articulating the vision and enlisting subordinates	Spangenberg and Theron (2011)
	Developing a challenging vision	Judge and Piccolo (2004)
	Inspirational Leadership	Spangenberg and Theron (2011)
	Inspiring a shared vision	
	Team members	Zimmerman et al., (2008)
	Team goals	Bass & Avolio (1995)
	Strategic perspective	Dulewicz and Higgs (2005)
	Strategic and visionary leader role	Larsson and Vinberg (2010)

Table 2.22 illustrated the suggested dimensions, which will be used in the development of the proposed measurement scale. Each one of these dimensions was identified after critical analysis of previous research was done by different authors. The following section will integrate existing literature, which focuses on the establishment of clearly defined dimensions, which will be included in the development of the Leadership Behaviour Scale (LBS).

#### 2.5.1 Empowerment of Subordinates

Empowerment is included in the development of this measurement scale, because it contributes to the effort and effectiveness that an employee puts into his or her job. Den Hartog and De Hoogh (2009) argued that “leaders may empower followers directly through their interactions with followers (e.g. assuring followers of their competency) and indirectly by providing followers with opportunities for input and success” (p. 203). This could also



contribute towards the unique needs of each follower, which contributes towards their personal achievements and growth (Vera & Crossan, 2004).

It acknowledges that any leader that adheres to subordinates' initiatives and personal contribution, will encourage them to be the 'best they can be'. Giving subordinates a certain amount of freedom and personal initiative within their working environment, will contribute to the outcomes and effort of their work. According to Bligh (2017) "providing employees with opportunities to participate in important decision-making processes provide followers with greater rewards from doing their work and allows them to feel empowered" (p. 23). It is important to give employees the autonomy to solve problems, be innovative and develop their own vision and perspectives about the organisation's success (Dulewics & Higgs, 2005).

Being an effective leader within a leading organisation, one should be able to encourage and facilitate your followers specifically when they need assistance with problem-solving (Green et al. 2015). According to Yukl (2013) an effective leader focusses on the empowerment of employees which helps them to become change agents and leaders themselves. Leaders within an organisation that display empowering behaviours, contribute to aspects such as providing subordinates opportunities, expressing confidence in their abilities, and giving them the freedom to use their own judgement, views and concerns to develop themselves (Den Hartog & De Hoogh, 2009). An effective leader should be focussed or concerned with the way in which they give direction to followers, which also gives them the authority to make decisions and to achieve certain goals and objectives (Dulewicz & Higgs, 2005).

#### 2.5.2 Support and Consideration

Being a supportive leader is an important characteristic of being an effective and respected leader. A supportive leader is described as friendly and being a person that takes other people's feelings, values and interests seriously. Leaders' displaying supportive behaviours can increase the level of trust within an organisation, which in turn is critical for the development of employees (Joseph & Winston, 2005).

Being a supportive leader can contribute to interpersonal relationships that are effective and trustworthy (Bligh, 2017). Supporting one another will increase interpersonal relationships and show a form of respect and positive regard for subordinates (Yukl et al., 2002). It is concerned with the degree to which a leader behaves in a consistent way that compliments

the employees of an organisation. An effective leader would be able to support the employees as a willingness to work in support of the successful implementation of change or other organisational elements (Herhold, Fedor, Caldwell & Liu, 2008). Supporting followers is a form of empowering behaviour from the leader which provides them with individualised support. This contributes towards the overall trust between a follower and leader (Den Hartog & De Hoogh, 2009).

The second part of this dimension has to do with the consideration of people and to be thoughtful when working with them. Leaders that are considerate, can be described as individuals that will reflect an idea rather than implement it themselves. They are concerned with the way and means that something gets done by using their available resources (Rossouw, 2014). The consideration or concern for people that a leader exerts in their behaviours, contributes towards mutual trust, respect and support for other people or an individual's ideas, as well as the appreciation for others' feelings (Bligh, 2017).

### 2.5.3 Development

In terms of development one can argue that coaching and mentoring form an integral part of this dimension. This refers to any sound opportunity that is provided by the leader to increase a subordinate's skills and knowledge (Amabile et al., 2004). This also refers to being able to give helpful career advice and to facilitate any form of development that can contribute to career advancement. One can thus argue that the development of subordinates is an important behaviour of a leader that wants to be successful and helpful. Den Hartog & De Hoogh (2009) argued that providing opportunities for followers to develop themselves, can be seen as an effective leadership behaviour.

As an effective leader, one should have the ability to provide different opportunities allowing followers to develop their skills and their confidence (Yukl *et al.*, 2002). Research done by Bradford and Cohen (1984) provided evidence that effective leaders of an organisation take up an active role when it comes to the development of employees' skills and confidence. Development of employees within the organisation contributes towards the increased power and status of employees, which will increase the overall effectiveness of the employees within the organisation (Joseph & Bruce, 2005). It was also argued by Yukl (2013) that leaders who invest time in the development of their employees, prepare them for leadership roles, new

responsibilities and change. Dulewics and Higgs (2005) argued that effective leaders believe in their followers' potential to take on demanding tasks and roles, and they take the opportunities to encourage and develop them effectively. However, being an effective leader means more than just providing opportunities for development. It also means that a leader should give followers an explanation of what is expected of them, which provides them with boundaries within the range of development opportunities (Van Dierendonck & Nuijten, 2010). This can contribute towards the follower's personal encouragement, motivation and affirmation towards the organisation (Green et al., 2015).

#### 2.5.4 Consultation

Consultation is a very important process in terms of making subordinates part of the outcome of the team. Consultation is a separate dimension due to the fact that it is a process that almost always involves some form of leadership (Dyer, Johansson, Helbing, Couzin, Krause, 2008). Within previous literature the dimension of decision-making was called consulting or consult. According to Dyer et al. (2008) decisions can be defined as "when the members of a group choose between two or more mutually exclusive actions with the aim of reaching a consensus" (p. 781). This involves taking part in decisions with subordinates and ensuring different perspectives and opinions are formed. Leaders must be open to different opinions since this will give subordinates the comfort of being heard by the leader.

If leaders make subordinates part of the consultation process, they have more control over the outcome. It also provides followers with the opportunity to voice their personal views and concerns (Den Hartog & Den Hoogh, 2009). The study done by Brown et al. (2005) contributes towards this by enhancing the importance of listening to followers' perceptions and concerns. This could be linked to the emerging field of positive psychology where leaders give followers the opportunity to value their own personal experiences by sharing emotions, needs, preferences and beliefs within this open communication environment (Walumba et al., 2008).

Important to remember is that one must ensure that all parties involved in an organisation agree before making a decision. Leadership may also involve taking a decision in the absence of an agreement by all parties – the absence of agreement will then be mediated by the process that the leader followed before taking the decision. Leaders must take into

consideration how decisions will affect their subordinates and to make sure the decisions that were made, encourage subordinates.

According to Bligh (2017) was found that “consulting with team members when making decisions, communicating a collective vision and sharing common values with the leader predicted 67% of employees’ ratings of trust in their leaders” (p. 24).

An aspect that also contributes strongly towards the dimension of consultation, is communication. Communication is a critical component in creating a valuable and close relationship with a subordinate (Rhodes, Reddy, Roffman & Grossman, 2005). Any form of communication plays a critical role in the workplace environment and will have an impact on subordinates’ performance and the leaders’ performance. Communication has to do with the way in which information is transmitted, passed on, or exchanged. Effective communication is a predictor of success for aspects such as trust, mutuality and empathy to be established within a relationship between people (Rhodes et al., 2005).

#### 2.5.5 Task Planning

According to Yukl (2013) the purpose of “planning is to ensure efficient organisation of the work unit, coordination of activities and effective utilisation of resources” (p. 72). Planning within an organisation is a cognitive activity, which focuses on processing, analysing and deciding.

Planning includes leader activities such as writing plans, preparing budgets, formulating objectives and organisational strategies (Yukl, 2013). The implementation of these plans is crucial, thus having an effective leader will ensure that this happens in an effective and productive manner. It was also found that there is evidence of a relationship that exists between planning and the effectiveness of leaders (Yukl, 2013).

Together with effective planning within an organisation is the constant setting of goals and ensuring that team members or employees reach these goals. It is important for a leader to set clear goals and objectives to ensure that subordinates understand what is expected of them (Yukl, 2013). When goals and objectives are clear and understandable, they reduce the risk of failure, breaking the rules and misunderstanding. Setting clear goals will direct employees to achieve the vital or key aspects of their daily tasks, which will also contribute towards effective performance (Dulewigs & Higgs, 2005).

### 2.5.6 Monitoring

It is important for any leader to have the ability to observe and check the progress of a task or project and to be able to recognise any potential threats or negative outcomes. According to Yukl (2013) “monitoring can take many forms, including observation of work operations, reading written reports, watching computer screen displays of data and holding progress review meetings with an individual or group” (p. 75).

The amount of monitoring a leader will exert, truly depends on the leader’s competence and the nature of the work being done. As a leader, effective monitoring can provide subordinates with coaching and assistance in training needs, or when there is a lack of knowledge (Yukl, 2013). It is important for a leader to be able to critically identify shortcomings in followers’ ideas and proposals and use this as a developmental opportunity (Dulewigs & Higgs, 2005). An effective leader should also be able to make decisions based on the outcome of followers’ ideas on a proposal, for the follower to understand and learn from the potential shortcomings and improvements. It is important that a leader always remain objective and fair when making decisions based on an employee’s shortcomings. This goes hand in hand with the aspect of ethical leadership behaviour (Wolmarans, 2014). The ultimate goals of a leader should be to monitor and develop employees, and then to have the ability to hold them accountable for future work, if the leader is perceived as being effective. Accountability according to Van Dierendonck and Nuijten (2011) “is a powerful tool to show confidence in one’s followers; it provides boundaries within which one is free to achieve one’s goals” (p. 252).

Thus, it is important for a leader to be able to monitor the workplace environment, as this will assist in the process of achieving certain goals and objectives.

### 2.5.7 Networking

Networking is used to improve performance by using internal and external links that are formed amongst people, teams and different organisations (Van aalSt, 2003). Successful networking involves the successful building and maintaining of relationships with stakeholders that can assist the leader with the identification of possible threats and opportunities for the organisation (Yukl, 2013). Networking could increase knowledge amongst leaders, but it could also increase the different sources that are available to followers. It is important for any leader to have the ability to socialise in an informal manner,

while at the same time gaining contacts that could be useful sources in the future. This can contribute towards leaders' own innovative ideas to influence the status quo of the organisation in a positive manner (Gaughan, 2001).

As cited by Pearce (2007) "networking skills are critical for capacity acquisition and capital accrual" (p. 358). It was also argued that networking skills could be a useful area that needs attention in future leadership development efforts. According to Forret & Dougherty (2001) engaging in networking behaviours is a method that leaders can use to proactively manage their organisations. It is an important ability of an organisational leader to network effectively, which contributes towards to the successful influencing and persuading of others (Myburg, 2013).

#### 2.5.8 Leading Change

Leaders in the 21<sup>st</sup> century are faced with different organisational, client-based and environmental changes each day. As mentioned earlier, there is a growing relationship that exists between change-behaviours and the effectiveness of a leader (Yukl et al., 2002).

Leaders are faced with the responsibility of anticipating change and still being able to delegate and guide their followers and the organisation (Gil, Rico, Alcover & Barrasa, 2005). In the study done by Gil et al. (2005) the relationship between change-orientated leadership, performance and satisfaction was supported by empirical evidence. It can be argued that change-orientated leadership can lead to accomplishment of tasks in an efficient, effective and reliable way. It is therefore important for an organisational leader to focus on the change commitment of an organisation, which are mostly referred to as the 'buy-in' from others and are most likely influenced by a leader's behaviour (Herhold et al., 2008).

Another crucial aspect of change within the 21<sup>st</sup> century is how leaders adapt to a constant change in technology as well as the resources to implement this successfully. It is crucial that in the 21<sup>st</sup> century organisations invest in leaders that have knowledge of how to apply technology and use it effectively in daily tasks. According to Forbes and Wield (2002) "technology is that form of human activity which is devoted to the production of theory-related knowledge of natural phenomena and whose root function is to attain an enhanced understanding of nature" (p. 9).

It is important to have balanced leaders regarding all aspects of the organisation where technical competence is one of the requirements. Introducing technology goes hand in hand with different opportunities such as developing a common vision and shared purpose (Flanagan & Jacobsen, 2003). Integrating technology with leadership can be used to achieve bigger goals, to transform learning and teaching within an organisation. A clear vision of an organisation's direction towards the future can contribute towards business needs and imperatives, as mentioned previously, which can assist an organisation with successful implementation of business strategies and plans (Dulewics & Higgs, 2005)

#### 2.5.9 Ethical Behaviour

When focussing on ethics it is important to ensure that leaders will be able to take responsibility for the results of their actions. Ethics includes every behaviour and attitude that are present within an individual and even more within a leader (Tutar, Altinoz and Çakiroglu, 2011). As cited by Brown et al., (2005) "most employees look outside themselves to significant others for ethical guidance" (p. 117). It can therefore be argued that leaders who lead in an ethical way, will become role models within their organisation in this regard; it will help subordinates to understand the importance of ethical standards and behaviours. It was argued by Wolmarans (2014) that "leaders consequently have a critical role to play in ensuring participation in decision making and value-structuring while furthering the norms that support corporate ethics" (p. 23).

Being an ethical leader will lead to positive outcomes and will increase the way in which followers perceive the organisational justice within an organisation. Brown and Mitchell (2010) assert that individuals who are perceived as being able to lead in an ethically positive manner, can facilitate productive work behaviour. Ethical leadership can make a significant positive contribution towards the organisation, which includes aspects such as performance, effectiveness and the way in which followers go about their daily tasks.

The overall conceptualisation of ethical behaviour enhances the fact that followers in an organisation are more willing to respond positively towards polite and ethical behaviour (Kalshoven et al., 2011). When a leader considers ethical implications of decisions as important, subordinates will trust the leader's perspective (Spangenberg & Theron, 2011). If leaders manage to set an ethical example by their leadership style, they can influence their

followers' ethical conduct and behaviour (Brown et al., 2005). As mentioned earlier, ethical leader behaviour has a direct and positive effect on the conduct of employees, but also on their overall attitudes (Kalshoven & Hartog, 2009).

#### 2.5.10 Strategic Team Leadership

Strategic leaders are expected to focus on the future, to create excitement for the future, as well as focus on the overall effectiveness of the organisation (Serfontein, 2010). Strategic leaders should be aware of their own organisation's conditions, their direct environment, and the challenges that they are faced with, in order for them to contribute towards the overall success of the organisation. It is important for a leader to be able to identify wider issues and broader implications that could influence relationships and organisational effectiveness (Dulewics & Higgs, 2005).

Strategic leadership is characterised by different facets of leadership, which is not only important on an individual level, but also on a team level within the organisation. Being a strategic team leader, it is important to be able to address multilevel organisational issues, identify cross-cultural effects of teams, which include challenges and opportunities regarding the effectiveness of the overall organisation. It is therefore important for a leader to be sensitive to the different stakeholders' needs and the implications of decisions on different cultures and teams within an organisation (Dulewics & Higgs, 2005). The overall success of the team and the organisation lies within the effectiveness of the leader's displayed behaviours (Zaccaro, Rittman & Marks, 2001). Davies and Davies (2004) argued that a leader who is strategically orientated, has the ability to translate strategy into action and align organisations and people. Larson and Vinberg (2010) cited that leadership behaviour has a great influence on followers' understanding and commitment towards the organisation's processes and procedures. Thus, one can argue that effective strategic leadership behaviours that contribute positively towards the effectiveness of a leader, are a critical success factor for organisations and their teams in the 21<sup>st</sup> century.

## **2.5 PROPOSED LEADERSHIP BEHAVIOUR SCALE (LBS)**

After the ten leadership behavioural dimensions have been defined, this study also focussed on making recommendations for the actual items to measure organisational leadership behaviour.



The test items that are suggested for the LBS are displayed in the form of phrases (see Table 2.23). These items were sourced from previous research and studies done, while some of the items were specifically developed for the purpose of this study.

**Table 2.23**

***Proposed items for the Leadership Behaviour Scale (LBS)***

Proposed dimension of the LBS	Proposed items all beginning with 'My manager...'	Reference
<b>Employee Empowerment:</b> <i>The leader encourages innovation, involves team members in decision-making and problem-solving, and recognises individual team member contributions. The leader shows confidence in team members and discretion in allowing team members to act autonomously.</i>	Gives me credit for helpful ideas and suggestions.	(Yukl, 1999)
	Recognises my contributions and accomplishments.	(Yukl, 2013)
	Delegates responsibility and authority to me for important activities.	(Yukl, 2013)
	Involves me in decisions that affect my work.	(Den Hartog & De Hoogh, 2009)
	Encourages me to accept responsibility for my own development and growth.	(Adapted from Spangenberg & Theron, 2005)
	Encourages me to express my ideas and opinions.	(Vera & Crossan, 2004)
	Encourages me to solve problems.	(Dulewicz & Higgs, 2005)

Offers me the possibility to take responsibility.	(Adapted from Den Hartog & De Hoogh, 2009)
Shows confidence in my ability to contribute to the goals of our team/unit.	(Adapted from Den Hartog & De Hoogh, 2009)
Expresses satisfaction when I meet his/her expectations.	(Adapted from Bass & Avolio, 1995)
Gives me autonomy and encourages me to take on personally challenging tasks.	(Adapted from Dulewicz & Higgs, 2004)
Provides me with assistance in exchange of my efforts.	(Adapted from Bass & Avolio, 1995)
Encourages me to produce innovative ideas and proposals.	(Dulewicz & Higgs, 2004)
Ensures that rewards are equal to responsibilities and contributions.	(Yukl, 2013)
Encourages me to speak my mind and gives me freedom to participate.	(Adapted from Rossouw, 2014)

**Consideration:** *The leader displays consideration, acceptance, empathy and concern for team members' needs, feelings and wellness.*

Provide support and encouragement to subordinates with a difficult task. (Yukl, 1999)

Backs me up and supports me in a difficult situation. (Yukl, 1999)

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Provide empathy and support when subordinates are anxious or upset. (Adapted from Yukl, 2013)

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Listens to my problems and concerns. (Den Hartog & De Hoogh, 2009)

---

Provides advice whenever I need it. (Den Hartog & De Hoogh, 2009)

---

Acts politely and considerately towards people. (Adapted from Yukl, 2013)

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Spends some time with subordinates to get to know them better. (Adapted from Yukl, 2013)

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Believes that work-life balance is important to improve employee wellness. (Adapted from Rossouw, 2014)

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**Employee development:** *The leader identifies and provides opportunities for continuous development of team members' skills and knowledge.*

---

Is genuinely concerned about the growth and development of subordinates. (Den Hartog & De Hoogh, 2009)

---

Look for ways to build on ideas and suggestions from subordinates. (Yukl, 2013)

---

Expresses confidence in my ability to carry out a difficult task. (Yukl, 1999)

---

Provides helpful career advice to employees. (Yukl, 2013)

---

Provides and support opportunities for continuous learning and development.	(Adapted from Spangenberg & Theron, 2005)
Provides opportunities to develop and demonstrate my skills.	(Adapted from Yukl, 1999)
Provides me with opportunities to learn from previous experiences and mistakes.	(Adapted from Yukl, 2013)
Identifies new tasks and roles to develop employees.	(Adapted from Van Dierendonck & Nuijten, 2011)
Helps me to further develop myself.	(Green, Rodriguez, Wheeler & Baggerly-Hinojosa, 2015)
Helps me to develop my strengths.	(Bass & Avolio, 1995)
Invests time and effort in coaching and mentoring employees to improve their performance.	(Adapted from Dulewicz & Higgs, 2005)

**Consultation:** *The leader gives and seeks advice to ensure that all stakeholders (parties) are involved before making important decisions within the organisation. Within an open discussion, the leader listens intently to different opinions and ensures two-way participation before coming to conclusions.*

Consults with me to get my reactions and suggestions before making a decision that affects me.

Advises me regarding important changes in my task.	(Adapted from Den Hartog & De Hoogh, 2009)
Includes all parties involved when it comes to changes and decisions.	No reference
Can have an open discussion about work and procedures.	No reference
Ensures participation from subordinates.	No reference
Keeps subordinates informed about actions that might affect them.	(Yukl, 2013)
Ensures that a clear understanding of information is achieved before making decisions.	(Yukl, 2013)
Listens to what employees have to say.	(Brown, Trevino & Harrison, 2005)
Listens carefully to different viewpoints before coming to conclusions.	(Walumbwa, Avolio, Gardner, Wernsing & Peterson, 2008)

**Task Planning and Goal Setting:** *The leader coordinates work activities and plans how objectives and strategies will be achieved by allocating resources in an effective manner. The leader develops activities and gives responsibility to team members to ensure that planned goals are achieved.*

Directs and coordinates work activities according to planned schedule.

<p>Holds employees responsible/accountable for their own action plans.</p>	<p>(Adapted from Yukl, 2013)</p>
<p>Plans in detail how to accomplish an important task or project.</p>	<p>(Yukl, 1999)</p>
<p>Assigns work to specific groups and individuals.</p>	<p>(Yukl, 2013)</p>
<p>Explains the priorities of each goal and objective of the project or task.</p>	<p>(Adapted from Yukl, 2013)</p>
<p>Determines what resources are needed to carry out a project.</p>	<p>(Yukl, 1999)</p>
<p>Determines how to organize and coordinate work activities to avoid delays, duplication of effort, and wasted resources.</p>	<p>(Yukl, 1999)</p>
<p>Explains what needs to be done to ensure that the expected task or project is completed successfully.</p>	<p>(Bass &amp; Avolio, 1995)</p>
<p>Converts long-term goals into action plans.</p>	<p>(Dulewicz &amp; Higgs, 2005)</p>
<p>Set specific goals and deadlines for important tasks.</p>	<p>(Yukl, 2013)</p>

**Monitoring:** *The leader effectively monitors tasks and performances of team members to ensure that their progress contributes to high quality work and overall success. The leader gives fair and objective feedback to team members to ensure team members are accountable for the outcomes of their work.*

Monitors tasks and performance of subordinates.	(Adapted from Yukl, 2013)
Monitors the progress of subordinates to ensure the goal is reached.	(Adapted from Yukl, 2013)
Has regular feedback sessions to ensure projects or tasks are still on track.	No reference
Inspects the quality of work on a regular basis.	No reference
Gives me effective, honest and sensitive feedback on a regular basis.	(Adapted from Dulewicz & Higgs, 2005)
Holds me accountable for the work I carry out.	Adapted from (Van Dierendonck & Nuijten, 2011)
Holds me accountable for my performance.	Adapted from (Van Dierendonck & Nuijten, 2011)
Is fair and objective when evaluating subordinate performance.	(Wolmarans, 2014)
<b>Networking:</b> <i>The leader socialises and interacts with people inside and outside the organisation to build and maintain relationships and networks which benefit the organisation. The leader communicates the vision of the organisation/unit to others and remains visible within the organisation.</i>	
Interacts with people outside of the organisation to enhance knowledge.	(Yukl, 2013)

Communicates our vision of the unit/organisation or departments to the public/community (e.g. customers).	(Adapted from Gaughan, 2001)
Socialises with people to build networks.	(Adapted from Yukl, 2013)
Builds and maintains relationships with others (e.g. managers in the organisation and customers).	(Adapted from Yukl, 2013)
Attend networking sessions outside of the organisation (e.g. conferences, workshops, events).	No reference
Uses his/her network contacts effectively to the advantage of the organisation.	(Adapted from Myburg, 2013)
Effectively promotes the work achievements of our team/unit to external parties (e.g. other departments, other organisations).	(Adapted from Gaughan, 2001)
Has been highly visible in committees or projects in the organisation.	(Adapted from Forret & Dougherty, 2001)
Attends and enjoys social functions of the organisation.	(Adapted from Forret & Dougherty, 2001)

**Leading Change:** *The leader encourages and facilitates change within the organisation by providing opportunities for team members to share new and innovative ideas in the change process. The leader demonstrates the ability to drive change optimistically within the*



*organisation and to keep team members informed about the progress and implementation thereof.*

Encourages new and creative ideas (Adapted from Yukl, for improving products, services or 1999) processes.

Looks for different perspectives (Adapted from Bass (ideas) when they want to solve & Avolio, 1995) problems.

Is confident and optimistic when (Yukl, 1999) proposing a major change.

Encourages and facilitates the (Yukl, 2013) efforts of change.

Communicates a clear and inspiring (Yukl, 2013) vision of the benefits to be gained from change.

Gives individual attention to those (Adapted Herhold, who have trouble with the Fedor, Caldwell, & implementation of change. Lui 2008)

Prepares employees for change by (Yukl, 2013) explaining why it is necessary and how it will affect them.

Keeps people informed and (Yukl, 2013) celebrates progress in implementing change.

Monitors the progress of change and (Adapted from Yukl, makes adjustments if necessary. 2013)

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My manager's ideas have forced me to rethink some of my own ideas, which I had never questioned before. (Adapted from Bass & Avolio, 1995)

---

Foresees the impact of external changes and business realities on the implementation of the vision of the team/organisation. (Adapted from Dulewicz & Higgs, 2004)

---

Demonstrates optimism and continued commitment to change. (Yukl, 2013)

**Ethical Behaviour:** *The leader demonstrates honesty, integrity, and fairness in his or her decisions, actions and interpersonal relationships. The leader treats the team members with dignity and respect, which would enhance the communication of the ethical vision of the organisation.*

---

Discusses business ethics and standards with employees. (Adapted from Brown, Trevino, & Harrison, 2005)

---

Sets an example of ethical behaviour in his/her decisions and actions. (Yukl *et al*, 2013)

---

Considers the moral and ethical consequences of his/her decisions. (Adapted from Bass & Avolio, 1995)

---

Regards honesty and integrity as important personal values. (Yukl, Mashud, Hassan & Prussia, 2013)

---

Keeps his/her actions consistent with his/her ethical values ('walks the talk'). (Yukl, Mashud, Hassan & Prussia, 2013)

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Behaves consistently in an ethical way.	(Wolmarans, 2014)
I believe what my manager says.	(Wolmarans, 2014)
Practices what he/she preaches.	(Wolmarans, 2014)
Keeps his/her promises made to me.	(Wolmarans, 2014)
Goes beyond his/her self-interest to the benefit of the team.	(Adapted from Bass & Avolio, 1995)
Disciplines employees who violate ethical standards.	(Brown, Trevino & Harrison, 2005)
Treats subordinates with dignity and respect.	(Wolmarans, 2014)
Makes fair and objective decisions in the interest of all subordinates.	(Wolmarans, 2014)
Communicates an ethical vision and inspires subordinate commitment to the vision.	(Wolmarans, 2014)
Recognises and rewards ethical contributions and behaviour.	(Wolmarans, 2014)

**Strategic and team leadership:** *The leader does environmental scanning and communicates an inspirational vision to all team members for direction of strategic business objectives. The leader establishes a clear link between the vision of the organisation and that of the team, which encourages mutual trust and cooperation within the teams/units. The leader focuses on sharing information, setting team goals and managing cultural diversity within the team.*

Communicates a clear and inspirational vision of the future direction of the team/organisation (Adapted from Dulewicz & Higgs, 2005)

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to meet strategic business objectives.

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Explain the strategy for attaining the vision of the team/organisation. (Yukl, 2013)

---

My manager compares the quality of the team's/organisation's products or services to those of competitors to identify strengths and weaknesses. (Yukl, 2013)

---

Monitor the external environment to detect threats and opportunities for the team/organisation. (Yukl, 2013)

---

Clearly communicates the link between the organisation's vision and our team's vision and goals. (Adapted from Dulewicz & Higgs, 2005)

---

Decisions are based on core business issues and their probable impact on success. (Adapted from Dulewicz & Higgs, 2005)

---

Has an unwavering (strong) determination to achieve team goals. (Adapted from Dulewicz & Higgs, 2005)

---

Expresses confidence that our team goals will be achieved. (Adapted from Bass & Avolio, 1995)

---

Talks enthusiastically about what our team needs to accomplish. (Adapted from Bass & Avolio, 1995)

---

Stimulates information sharing among our team members.	(Adapted from Zimmerman <i>et al</i> , 2008)
Makes me feel part of the team.	(Adapted from Zimmerman <i>et al</i> , 2008)
Effectively manage cultural diversity in the team.	(Adapted from Zimmerman <i>et al</i> , 2008)
Emphasises shared (common) values and objectives among members of the team.	(Adapted from Zimmerman <i>et al</i> , 2008)
Encourages mutual trust and cooperation among members of the work unit.	(Adapted from Zimmerman <i>et al</i> , 2008)
Use social activities, symbols, ceremonies and stories to build team identity.	(Yukl, 2013)
Is sensitive to the implications of external stakeholders' needs (e.g. customers) on decisions and actions.	(Adapted from Larsson & Vinberg, 2010)
Facilitates open discussions on how to improve communication, decision-making and cooperation in the team.	(Yukl, 2013)

## 2.7 OUTCOMES OF ORGANISATIONAL LEADERSHIP BEHAVIOUR

Adding predictive validity and practical application to this proposed study, enhances the overall value and contribution of the study. In an attempt to enhance the overall significance of the study, the researcher proposes that the LBS can be used to measure organisational leadership behaviour, which forms part of a complex nomological network of latent variables.

These latent variables form antecedents and outcomes of organisational leadership behaviour, which may have a direct and indirect impact on the effectiveness of an organisation. A discussion of the proposed outcomes (trust in leader and leader effectiveness) and relationships with organisational leadership follows.

### 2.7.1 The relationship between Organisational Leadership and Trust in the Leader

Trust in leadership is regarded as a significant concept that has been researched for decades. The trust that individuals have in their leaders is most definitely an important concept that has been applied in psychology and other related disciplines (Dirks & Ferrin, 2002). As cited by Bartram and Casimir (2007) it is crucial that “leaders need to be trusted by their followers because trust is the mortar that binds the follower to the leader” (p. 5). Hendrikz (2017) cited that trust could be defined as a multidimensional construct, which consists of constructs such as interpersonal trust, inter-organisational trust, societal trust, political trust, and the trust that exists between a leader and subordinates. However, this research study will focus on the trust between a leader and subordinates, as the main focus of the study is focused on leadership behaviour within the organisation.

Bartram and Casimir (2007) defined trust “as the willingness to depend on another party as well as an expectation that the other party will reciprocate if one cooperates” (p. 5). To enhance the idea of the willingness to depend on another party it was highlighted by the definition of Rousseau, Sitkin, Burt and Camerer in 1998, which defined trust as a “psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another” (p. 395).

Various leadership styles or behaviours have been identified that contribute towards trust in their followers (Anderson, 2017; Engelbrecht & Chamberlain, 2005; Engelbrecht, Heine & Mahembe, 2017; Hendrikz, 2017). According to Engelbrecht, Heine and Mahembe (2014) a

leader's behaviour can influence the level of trust that followers have in the leader. The intentions of the leader and the subordinate's behaviour is one of the key elements that contributes towards a lasting social exchange relationship, because of the trust that they feel in their leaders. As cited by Engelbrecht, Heine and Mahembre (2017) "trust in the leader can be defined as the employee's willingness to accept vulnerability on the basis of positive expectations of the intentions of the leader" (p. 369). Thus, one can argue that the relationship between leaders' behaviour and organisational behaviour should be well established, which also relates to the relationship between the leader and the organisational values (Joseph & Winston, 2005). Leaders should focus on what they pay attention to within an organisation; who they allocate the resources of the organisation to; how they act within the organisation; and the manner in which they deal with important aspects that contribute towards subordinates' commitment and engagement.

Leaders who give subordinates the opportunity to exchange their knowledge, ideas and information, will get increased levels of trust (Engelbrecht et al., 2017).

A culture of trust established by leader behaviours, can lead to in-depth relationships; high quality communication within the organisation; direction and vision; and high levels of commitment towards the organisation. As cited by Joseph and Winston (2005) "the leader's behaviour is thus more important than that of anyone else in determining the level of trust that exists within a group or organisation. Thus, creating a culture of trust within an organisation will be enhanced when a leader's credibility and integrity is perceived as trustworthy. A leader's performance is based on his/her credibility and integrity that can lead to higher levels of trust within the organisation. As cited by Joseph and Winston (2005) the study done by Northouse in 2011 "supported this link between performance and trust with regard to integrity and consistency when he stated that transforming leaders build trust in organizations by making their positions clearly known, standing by them, and by articulating and consistently implementing a particular direction" (p. 9).

Thus, the leader's own self-sacrificial behaviours give an indication of the leader's credibility and high level of self-confidence, which contributes towards subordinate's perceptions of a capable and trustworthy leader especially when it comes to the fulfilment of the leadership role. Bartram and Casimir (2007) stated that the leaders' behaviours "result in followers

believing the leader cares about them as people rather than as means to an end; confidence in the intentions and motives of the leader result in perceptions of procedural justice and, in turn, trust and acting as a mentor and paying close attention to followers' needs for achievement and growth indicate a concern for the welfare of followers, which is pivotal for trust" (p. 6). It can therefore be argued that trust in the leader is an important outcome of organisational leadership, because it enhances the satisfaction with the leader and the performance of the organisation. Thus, it can be postulated:

**Research hypothesis:** *Organisational leadership behaviour positively influences trust in the leader.*

#### 2.7.2 The relationship between Trust in Leaders and Leader Effectiveness

Leader effectiveness according to Yukl (2013) can be seen as an individual who has the ability to influence, motivate and enable employees, which in turn contributes towards the effectiveness and success of the organisation. Research done on effective leadership reflects the assumption that some leadership behaviours (e.g. task, relationship, ethical) are positively related to subordinates' performance and satisfaction (Yukl, 2013).

Effective leadership according to Wolmarans (2014) "is imperative to all organisations and can be seen as the successful exercise of personal influence by one or more people that result in accomplishing organizational objectives congruent with the organisation's mission while earning the general approval of its stakeholders" (p. 8). It is an effective leader's responsibility to create and develop an environment where employees can excel (Engelbrecht, Wolmarans & Mahembe, 2017). The positive perceptions that employees have about their leaders' attributes and performance can contribute towards the promotion of trust and increase leader effectiveness (Joseph & Winston, 2015). As mentioned in the previous section, the credibility and integrity of a leader's behaviour can increase the levels of trust within the organisation, which in turn could influence the performance of employees within the organisation.

Effectiveness can be perceived as the outcome of the leader's behaviours and performance, which is created by the level of trust that was established by these elements for the subordinate. The relationship between leaders and their subordinates can contribute to the effectiveness of the leader within the organisation. According to Wolmarans (2014), for



leader's to be perceived as effective "requires good relationships with followers as these relationships would enhance followers' well-being and work performance" (p. 9). Contributing effectively towards elements, such as increased job satisfaction, higher performance, innovation, organisational commitment and trust of subordinates, can be established by leaders that manage to set a standard within the organisation regarding values, beliefs and attitudes.

Any leader's credibility or integrity can be measured when looking at aspects such as decision-making, solving problems and taking responsibility within the organisation. The reason for this argument is that if leaders manage to make decisions and solve problems in this manner, it will increase the trust from the subordinates as well as increase the effectiveness of the leader's performance. Effective leaders manage to identify problems within the organisation that is important and solvable, which makes them responsible for the effective outcome of their decisions (Yukl, 2013).

The essence of trust between a subordinate and leader according to Bligh (2017) "can be tied to two fundamental building blocks namely how leaders establish they have the competence to lead effectively, reflecting both task and relationship-oriented skills, and how they establish their benevolence and integrity" (p. 23). According to Yukl (2013) the effective performance of a leader within the organisation requires cooperation and mutual trust. Thus, effective leadership resonates foundations of leader-subordinate trust within organisations, because leaders should be able to demonstrate their abilities or competence in the way they lead. Establishing trusting relationships within an organisation can therefore be enhanced by the effectiveness of a leader's capabilities and abilities, which are demonstrated through their daily performance. Yukl (2013) argued that "effective leaders foster respect, trust and cooperation" (p. 406). It can therefore be argued that leader effectiveness is an important outcome of trust in the leader, as it contributes towards the overall effectiveness and success of an organisation.

***Research hypothesis: Trust in the leader positively influences leader effectiveness.***

### 2.7.3 The Relationship between Organisational Leadership Behaviour and Leader Effectiveness

Leaders can influence the performance of employees and enhance acceptable behaviour within the organisation (Henning, Theron & Spangenberg, 2004). The way in which the employee perceives the leader's behaviour may elicit or block out the tendencies of followers to behave in a certain way (Engelbrecht et al., 2017). Individuals within an organisation are more likely to act in a way that can be closely related to the behaviour of the organisation's leader. Thus, positive perceptions of leaders' behavioural conduct could be regarded as pivotal for the development of a positive environment, which embodies the organisation's overall vision and mission. It was also argued by Rossouw (2014) that a leader's behaviour can be a very important tool within an organisation, which can contribute towards organisational culture, and shape the desired employee behaviour that in turn contributes towards the organisational objectives and effectiveness.

Leadership behaviour can be seen as a critical determinant of an organisation's overall climate, which can also be seen as an ethical climate (Engelbrecht et al., 2017). Employees within an organisation will have a high regard for, and more likely imitate their leader's behaviour if it is perceived as acceptable. As cited by Dulewics and Higgs (2005) it was found that effective leadership requires that leaders should focus on being themselves, but use skills and behaviour in doing that.

As proposed in previous sections of this study the concept of organisational leadership behaviour fundamentally consists of ten subdimensions. One of these dimensions is ethical leadership, which plays a fundamental role in the effectiveness of a leader. Ethical leaders according to Engelbrecht et al. (2017) "are perceived as appealing, authentic and reliable role models that engage in morally acceptable behaviour and make the ethics meaning noticeable and influence employee outcomes" (p. 3). This relationship was confirmed by the study done by Engelbrecht et al. (2017) where the null hypothesis was rejected ( $t = 4.681, p < 0.05$ ). It can therefore be argued that leaders cannot anticipate acceptable behaviour within their organisation if they do not behave in a morally acceptable manner themselves. Various leadership attributes such as fairness, consideration and openness according to Brown et al. (2005) can be seen as critical factors that contribute towards perceived leader effectiveness.

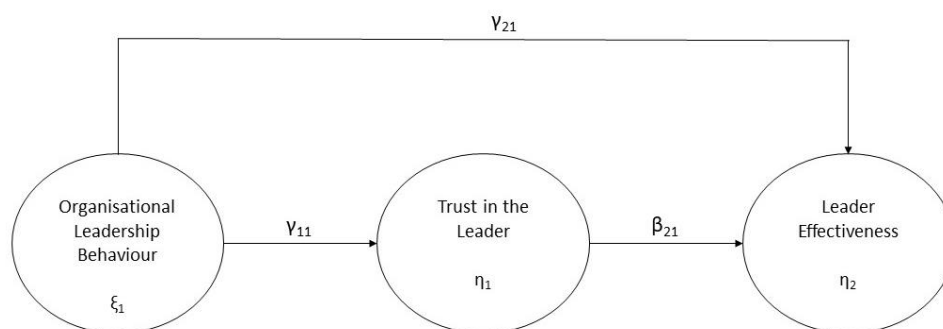
This reiterates the fact that leaders who act in a morally acceptable manner will have followers that are highly committed, satisfied and productive. The overall success of the leader will in turn contribute to the overall success of the organisation. It was found in the study done by De Hoogh and Den Hartog (2008) that a positive relationship exists between moral leadership and perceived leadership success. Thus, an effective leader will function in a manner that is successful and will ensure to meet the needs of the followers (Engelbrecht et al., 2017).

It can be argued that employees who are able to identify, respect and imitate their leader's appropriate behaviour, will most likely view such a leader as being more effective (Engelbrecht et al., 2017). Thus, the positive organisational leadership behaviours as proposed earlier in this study, could have an effective influence on the followers, which in turn provide evidence of the leader's effectiveness. Effective leaders are those who are able to develop their employees by promoting acceptable behaviour within the organisation (Yukl, 2013). In turn, this behaviour will promote the positive climate within the organisation, which contributes towards the overall vision and success of the organisation.

**Research hypothesis:** *Organisational leadership behaviour positively influences leader effectiveness.*

## 2.8 STRUCTURAL MODEL

In summary, the researcher proposes that organisational leadership behaviour leads followers to trust leaders, which in turn, results in an individual that is more effective in his or her leadership role. This translates into the following structural model:



**Figure 2.1:** Structural Model

Organisational leadership behaviour forms the exogenous (independent) variable depicted as the symbol Ksi ( $\xi$ ). Trust in the leader and leader effectiveness are endogenous (dependent) variables and carry the symbol Eta ( $\eta$ ). The pathway between the exogenous and endogenous variables is indicated by the symbol Gamma ( $\gamma$ ), while the pathway between the two endogenous variables is characterized by the symbol Beta ( $\beta$ ).

## **2.9 SUMMARY**

This chapter has provided a contextualisation of leadership behaviours and the broader understanding thereof within organisations. Chapter 2 defines leadership within the proposed context of its employment in this study. The underlying argument of this chapter was that leaders could be more effective if they understand which behaviours would help them to lead more successfully.

In summary, this literature study explored various leadership behaviours and provided all the necessary theories underlying leadership behaviours such as relationship, task, ethical, change, strategic and value-based leadership constructs. From the in-depth literature study of existing leadership scales, dimensions were derived and used to develop the Leadership Behavioural Scale (LBS). Thereafter, a short literature review was conducted to establish the importance of trust and leader effectiveness within the organisation. This was done to determine the convergent and criterion validity of the LBS ultimately.

The next chapter provides a discussion of the research design and methodology used to empirically measure the credibility of the proposed measurement model.

## CHAPTER 3

### RESEARCH METHODOLOGY

#### 3.1 INTRODUCTION

The literature study led to the overall conceptualisation of ten latent variables for the Leadership Behavioural Scale (LBS), proposed in Table 2.21 (see Chapter 2). Furthermore, a structural model depicting a nomological network within which organisational leadership behaviour interacts as an antecedent of trust in leaders which leads to leader effectiveness and where organisational leadership is presented as a antecedent of leader effectiveness, was depicted in Figure 2.1 (see Chapter 2). Chapter 3 will focus on the research methodology that was utilised to develop the LBS and test the validity of the structural paths hypothesised in the structural model.

#### 3.2 SUBSTANTIVE RESEARCH HYPOTHESIS

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

**Substantive research hypothesis 1:** The LBS provides a construct valid and reliable measure of organisational leadership behaviour of South African business leaders.

According to Kerlinger and Lee (2000) it can be argued that the meaning of a construct does not only lie within its internal structure but also in the way in which the construct is embedded in a larger nomological network of latent variables. The latent variables interacting with organisational leadership behaviour within this nomological network were theorised in Chapter 2. The construct validity of the LBS depends on the extent to which organisational leadership behaviour is understood within this larger nomological network and if it can be corroborated empirically. Thus, a second substantive research hypothesis was tested:

**Substantive research hypothesis 2:** The structural model provides a valid description of the way in which organisational leadership behaviour is embedded in a larger nomological network by describing the outcomes of organisational leadership behaviour, as depicted in Chapter 2.

### 3.3 RESEARCH DESIGN

The research design of a study reflects the strategy or plan that will be used to obtain answers to the various research questions. As cited by Anderson (2017) “the research design reflects the strategy or plan of the evidence collecting process and is seen as a tool for empirically testing the merits of the described relationships” (p.46). The research plan or design is the outline of the method, and what the researcher will do. This includes the formulation of the hypotheses, operationalising the variables, the collection and analysis of the data (Kerlinger, 1973).

Various factors should be taken into consideration when deciding which research design is the best suited for a study. One of the factors that needs to be taken into consideration is the manipulation of the exogenous variables. The measurement model and the structural model within this study makes it difficult to manipulate the latent variables experimentally because of their dependency on scores that is obtained in response to statements made during the measurement of the various scales. Thus, for the purposes of this study, the most suitable research design would be an *ex post facto* correlational design. This type of research study can be defined as a systematic empirical inquiry where it is found that the researcher does not have direct control over the independent variables (Kerlinger, 1973).

*Ex post facto* research designs refer to a study where the groups used within the research process are different which leads to investigation for the reason of the differences and if there are any possible correlations between the variables (Kerlinger & Lee, 2000)

This research designs have an advantage where the correlations between variables can be established, although through the process of experimentation it is not possible, this method has three distinct disadvantages. Firstly, the independent variables cannot be manipulated, secondly there are a lack of power to randomise because the sample is not random and lastly

there is a risk of improper interpretation due to the points mentioned previously (Kerlinger & Lee, 2000).

*Ex post facto* correlation designs consist of two sub-models, the measurement model and the structural model (Hendrikz, 2017). The measurement model according to Diamantoploulos and Sigauw (2000) is used to define how the dimension of latent variable is measured by the corresponding items. Whereas, the structural model measures relationships between the latent variables (in this case, organisational leadership behaviour, trust in the leader and leader effectiveness) and the number of unexplained variances (Diamantoploulos & Sigauw, 2000).

### **3.4 RESEARCH PLAN**

The outline of how the research was conducted will be discussed in this section of Chapter 3. The research plan was based on steps 1 to 6 and 8 of the generic steps for scale development (McKenzie et al., 2011, p.297) as presented in Chapter 1 and took place in the 10 phases detailed below.

#### **Phase 1: Specification of the LBS**

The items relating to the specific dimensions of the LBS provided in Section 2.5 (see Chapter 2) were developed and the measurement model of the LBS was specified.

#### **Phase 2: Specification of the ancillary scales**

The items relating to the ancillary scales were specified.

#### **Phase 3: Sample selection and data collection**

The population sample from which the data would be collected was specified and selected, after which the data was collected.

#### **Phase 4: LBS Item and exploratory factor analysis (EFA)**

This phase was conducted in two steps namely:

- 1) Item analysis is used to allow the researcher to identify and eliminate items not contributing to an internally consistent description of the various latent dimensions comprising the construct in question. Item analysis was conducted to determine the

extent to which the LBS accurately measures organisational leadership behaviour by using SPSS's reliability analysis, and

- 2) Exploratory factor analysis was conducted to determine the unidimensionality of the subscales of the LBS by using SPSS's factor analysis.

#### **Phase 5: Reliability analysis and exploratory factor analysis (EFA) of the ancillary scales**

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

#### **Phase 6: Evaluation of the fit of the LBS's measurement model and validation of hypothesised paths of the LBS's measurement model**

This phase included three steps:

- 1) Confirmatory factor analysis (CFA) was used to determine the extent to which the measurement model of the LBS fitted data and thereby assessed the construct validity of the LBS.
- 2) Construct validity is not the only important factor when determining the fit of the measurement model. The magnitude of the factor loadings of the items is also important with regard to the related dimensions. This was done as a second assessment to determine the construct validity of the LBS.
- 3) Power assessment of the measurement model.

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

Confirmatory factor analysis was used to determine the extent to which the measurement models of the two ancillary scales fitted the data. This was done in confirmation of the items and their related dimensions, which contributed to the definition of the construct measured by each scale. These two scales were included in the structural model, which contributing to the idea that if the ancillary scales showed acceptable reliability and acceptable fit for the measurement model, the possibility of achieving acceptable fit of the structural model would increase.



### **Phase 8: Specification of the overall measurement model underlying the proposed structural model**

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

### **Phase 9: Specification of the structural model**

The proposed structural model represents the nomological network as mentioned earlier in which organisational leadership behaviour was proposed to be embedded. It was proposed that organisational leadership is an antecedent of trust in the leader and leader effectiveness and leader effectiveness is an outcome of trust in the leader.

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

This phase included five steps:

- 1) Evaluation of the structural model's underlying measurement model using CFA via LISREL
- 2) Evaluation of the fit of the structural model by using CFA via LISREL
- 3) Evaluation of the validity of the hypothesised paths of the structural model by making use of the structural equation modelling (SEM) process via LISREL (Hendrikz, 2017)
- 4) Power assessment of the structural model
- 5) Model modification

The next section will elaborate on each one of the phases as indicated above.

#### **3.4.1 Phase 1: Specification and validation of the LBS measurement model**

The steps that is important to determine the LBS's structure and ability to measure leadership behaviour were displayed in Chapter 1 as steps 1 to 4. These steps and the execution thereof will be discussed in detail.

##### **3.4.1.1 Defining dimensions of a measurement model**

It is crucial to define dimensions or constructs accurately while developing a scale. MacKenzie, Podsakoff and Podsakoff (2011) identified three issues that could possibly be encountered if a dimension or construct is not defined adequately. These three issues are listed below:

- a) One of the problems is the aspect of confusion, about what this construct actually refers to. Confusion can increase specifically about, as cited by Hendrikz (2017), “the similarities and differences between the construct and other constructs that may already exist in the field” (p. 109).
- b) The fact that one construct’s definition may overlap with another construct can increase the aspect of contamination specifically referring to the indicators.
- c) Lastly, some of the indicators might not accurately capture what they are supposed to, which means that invalid conclusions about the relationships of a construct may be drawn.

All of these elements was taken into consideration during the development and conceptualisation of the dimension definitions for the LBS.

#### 3.4.1.2 Item generation

Once the dimensions were defined, items were identified and developed which measure the dimensions. This was done deductively by conducting a detailed examination of the literature. Table 2.23 provides a comparative table of existing leadership behaviours in literature, which should be displayed by an organisational leader.

#### 3.4.1.3 Face and content validity

The Delphi Technique was used to establish the face and content validity and to review the scale’s initial compilation of dimensions and their related items (Hsu & Sandford, 2007). The LBS was emailed to South African professionals and academics which specialised or operated in the field of leadership or organisational psychology, for an in-depth review. Six participants provided feedback on the initial dimensions and items. Five of the respondents were from academics of various South African universities and one response came from a professional who consults in the field of organisational psychology.

Various questions were asked to guide the participants based on research done by Worthington and Whittaker (2006) while evaluating the scale:

- 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?

After the feedback was reviewed and carefully analysed, several changes were made to the original scale:

- a) The wording and formulation of several items and dimension definitions were changed.
- b) Double-barrel items were either changed or deleted.
- c) The number of items was reduced from 116 to 114.

#### 3.4.1.4 Item measurement

The LBS makes use of a Likert scale to measure the items because it creates more variance in the scores. It was decided to use a six-point scale which ranged from never to always (i.e. Never, Very seldom, Seldom, Occasionally, Often, and Always).

#### 3.4.1.5 Formal specification and operationalisation of the measurement model

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

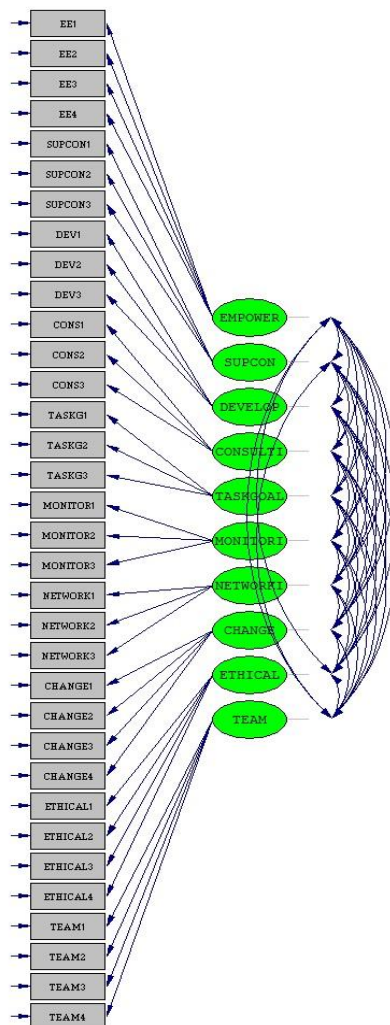
After defining the dimensions (latent variables), generating items (indicator variables) and identifying the relationship between these latent variables in the measurement model, the substantive research hypothesis 1 stated in Section 3.2 was operationalised.

The measurement model equation 3.1 was specified after the operationalisation of the measurement model.

$$X = \Lambda\xi + \delta$$

Where:

- $X$  is a  $1 \times 114$  column vector of LBS item scores<sup>1</sup>;
- $\Lambda$  is  $114 \times 10$  matrix of factor loadings describing the slope of the regression of  $X_i$  on  $\xi_j$
- $\xi$  is a  $1 \times 10$  column vector of leadership behaviour dimensions, and
- $\delta$  is a  $1 \times 114$  column vector of unique or measurement error components consisting of the combined effect on  $X$  of systematic non-relevant influences and random measurement error (Jöreskog & Sörbom, 1993; Theron, 2014).



**Figure 3.1:** LBS measurement model path diagram

<sup>1</sup> Equation 3.1 assumes that the measurement model is fitted using the individual items of the LBS dimensions as indicator variables (Theron 2014).

### **3.4.2 Phase 2: Specification of ancillary scales**

As proposed the nomological network in which the structural validity of the LBS was tested, was made up of two scales namely, the Leader Trust Scale (LTS) (Engelbrecht et al., 2014) and the Leader Effectiveness Questionnaire (LEQ) (Engelbrecht et al., 2017). These scales, as they were operationalised in previous studies, are discussed below.

#### **3.4.2.1 Leader Effectiveness**

The Leader Effectiveness Questionnaire (LEQ) which was developed by Engelbrecht et al. (2017) consists of 5 items. It was reported by Engelbrecht et al. (2017) that the scale had a Cronbach's alpha for reliability of .84 and evidence of good model fit was obtained.

#### **3.4.2.2 Trust in the leader**

The Leader Trust Scale (LTS) which was developed by Engelbrecht et al. (2014) consists of 13-items. It was reported by Engelbrecht et al. (2014) that the scale had a Cronbach's alpha for reliability of .97 and evidence of satisfactory model fit was obtained.

### **3.4.3 Phase 3: Sample selection and data collection**

The factor structure and the fit of the model required testing once the measurement model was formally specified. Data that specifically relates to the LBS was necessary to do this testing. Additional data was required for the validation of the ancillary scales. All the problems and issues regarding the sample selection and data collection are discussed in the following sections.

#### **3.4.3.1 Sample selection**

According to MacKenzie et al. (2010) it is important when selecting a sample for any data collection process to take into consideration the degree to which the sample represents the overall population for which the measurement is designed. The LBS was designed with the focus on measuring the behaviour of middle to top management, which made the ideal sample employees who directly reports to managers in such positions.

Statistically the best sampling technique that should be used in data collection is probability sampling, which consists of selecting a random sample from a population (Babbie, 2013). However, this is not always practically feasible in certain research situations. Thus, for the purpose of this study, non-probability (purposive) sampling was used. In this sampling

method the researcher selects the participants which he or she perceives as the most useful specifically for the purpose of the study (Babbie, 2013).

Another critical factor to take into consideration is the size of the sample. Factor analysis that is used to analyse the construct validity of such a scale is extremely sensitive towards size. Here the minimum ratio of participants should be between 3:1 and 10:1 (Hendrikz, 2017). For the exploratory factor and confirmatory factor analysis which disregards the ratio size, an acceptable sample size is between 200 to 500 participants (Worthington & Whittaker, 2006).

During the data collection phase, 210 individuals completed the LBS, which comprised of 114 items. The sample size was sufficiently acceptable, however the ratio of participants to items was small (< 2:1).

As mentioned earlier the data of the ancillary scales, which forms part of the structural model was also collected in this process. This required the participants to complete the LBS and two additional questionnaires. Table 3.1 provides additional information regarding the sample used in this study.

**Table 3.1**  
**Sample details**

<b>Gender</b>	<b>Number of participants</b>	<b>Percentage of participants</b>
Male	80	38%
Female	130	62%
<b>Race</b>		
African	10	5%
Indian	6	3%
Coloured	18	8%
White	172	82%
Other	4	2%
<b>Industry type</b>		
Manufacturing	15	7%
Retail	18	9%
Financial Services	18	9%

Construction, Industrial and Engineering	32	15%
Consultation	52	25%
Public Services and Parastatals	11	5%
Security	1	0.5%
Agriculture	16	7.6%
Other	47	22%
<b>Job Level</b>		
Non-managerial	100	48%
Lower level management	35	17%
Middle level management	48	23%
Upper level management	27	13%
<b>Average age of participants</b>	33 years	

The sample representation cannot be seen as representative of the South African population which is taken into account by the researcher. This is one of the negative consequences of non-probability sampling. This could have been influenced by factors such as the representation of the population in the Western Cape in which the African and Indian population has lower representation than in other provinces. Another factor could have been that 25% of the sample works in the Consultation industry, which is currently in the Western Cape dominated by white females.

#### 3.4.3.2 Data collection

The data for this study was collected via Stellenbosch University's online questionnaire platform called Sun Surveys as well as a few paper-based questionnaires. All the participants were made aware of the purpose of this study either in person or via the online platform or email. In the briefing information it was made clear to all participants that the data would only be used for research purposes and that the responses would be completely confidential. The participation in this study was also voluntary and could be indicated by an informed consent option. This contributed towards the confidentiality of the study and the fact that participants had a choice to anonymously continue with the study.

### **3.4.4 Phase 4a and b: LBS item and factor analysis (EFA)**

Once all the data was collected the researcher could start with the data analysis process. The original data of the LBS was analysed first. This was done by using item analysis and exploratory factor analysis (EFA) via SPSS. The purpose of these analyses was to reduce the number of items by identifying poor items; establish the reliability of the scale; establishing the construct validity of the scale; determining the number of factors that underlie the items that was measured; and lastly to establish the relationships between the factors (latent variables) (Devellis, 2003; Worthington & Whittaker, 2006).

#### **3.4.4.1 Eliminating poor items**

Within the data analysis process are a few methods that can be used to identify poor items. There are four methods that could be used to assist the researcher in this process namely item-scale correlations; inter-item correlations; item variance and item means.

#### **Item-scale correlations**

The aim of inter-scale correlations is to be able to retrieve a set of highly correlated items. This means that each item should correlate highly with the remaining collection of items (Hendrikz, 2017). This is done by using the corrected item-total correlations, where the items with values lower than .30 should be considered for elimination (DeVellis, 2003; Pallant, 2010).

#### **Inter-item correlations**

This is where the correlations between the items is compared, moderate correlations between items is desirable, which gives the researcher an indication that the items are measuring the same construct (Pallant, 2010).

#### **Item variance**

It is important for item variance to have a relatively high variance for a scale item. When obtaining a low variance, it can indicate poor discrimination in that all the respondents choose the same answer for the specific item. The ideal is to gather as much as possible varied responses per item (Hendrikz, 2017).



## Item means

As mentioned above, a 6-point Likert scale was used to measure the items of the LBS. This means that item means close to 3 would be desirable. When the mean of the item is closer to either end of the scale (1 or 6) it should be considered to be eliminated or reworded (DeVellis, 2003).

### 3.4.4.2 Reliability

One of the most important determinants of a scale's quality is the reliability coefficient, alpha. According to DeVellis (2003) it can be argued that "alpha is an indication of the proportion of variance in the scale scores that is attributable to the true score" (p. 95). When the aim is to apply research in practice, and in situations where decisions are based on certain tests scores it is desirable to have reliability of .90 to .95 (Nunnally, 1978). For research purposes a reliability coefficient of .70 and above would be considered as acceptable (Nunnally, 1978). Table 3.2 illustrated the interpretation of Cronbach's alpha values.

**Table 3.2**  
***Cronbach's alpha guideline***

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

(Nunnally, 1978)

### 3.4.4.3 Determining the construct validity using factor analysis

The next step in the process would be to determine the construct validity by determining the number of factors underlying the items. The following guidelines were used to conduct the factor analysis:

#### **Eigenvalue Rule (Kaiser-Meyer-Olkin measure)**

The eigenvalue of a factor refers to the amount of information that is captured by that specific factor. Thus, a factor with an eigenvalue of 1.0 manages to capture the same proportion of

the information as captured by one single item. According to literature, factors with eigenvalues of less than 1.0 should be removed from the data (Hendrikz, 2017).

### **Scree test**

As cited by Hendrikz (2017) “in a scree plot the eigenvalues of successive factors are plotted against the ordinal numbers of the factors. The curve eventually flattens out, normally at the point where the eigenvalues fall below 1.0” (p. 123). According to DeVellis (2003) the number of factors in the scale can be identified by the number of factors plotted to the left of the curve’s ‘elbow’.

### **Rotation**

Rotation is used to provide clarification with regard to the factor onto which specific items load (DeVellis, 2003). There are two main methods with regard to rotation namely, orthogonal (varimax) and oblique (quartimax) rotation.

Orthogonal rotation is a more simple and clear method of rotation. However, it does not allow for correlation which can present the researcher with misleading results (Fabrigar et al., 1999). Oblique rotation method allows for correlations and provides the researcher with estimates of the correlations among the most common factors (Fabrigar et al., 1999). According to Hendrikz (2017) “These correlation estimates provide useful information about the conceptual nature of common factors” (p. 123).

For the purpose of this study oblique rotation will be used, using the Principal-Axis factoring extraction method with the Direct Oblimin Rotated solution. When the data is analysed with regard to rotation, significant factor loadings ( $\geq .40$ ) are desirable (Hinkin, 1998).

#### **3.4.5 Phase 5: Reliability analysis and exploratory factor analysis of the ancillary scales**

The reliability analysis, by making use of the SPSS reliability technique, was performed on the ancillary scales (LTS and LEQ), which in turn was used to measure the validating variables of the proposed structural model.

Exploratory factor analysis of the ancillary scales was performed to determine the unidimensionality of the LTS and LEQ. This is a requirement for random parcelling of the items (Diamantopoulos & Sigauw, 2000).

### 3.4.6 Evaluation of model fit: General information

The next phase of the research design or plan is to evaluate the fit of the measurement model of the LBS. The following discussion relates to Phases 6 to 9b of the research plan which specifically relates to the measurement and structural models of the study. The fit of a model assists the researcher to determine the degree to which the model has the ability to explain the relationships found in the data (Hendrikz, 2017).

#### 3.4.6.1 Goodness-of-fit indices

Guiding a researcher in terms of this process a wide variety fit indices are available. Each one of the fit indices can be used in the interpretation of the data because no fit index is indisputably superior to another. It was the researcher's responsibility to interpret the fit indices and integrate the results which will reach a strong conclusion regarding the fit of the model. Table 3.3 provides a guideline of various goodness-of-fit indices that should be used in the interpretation of data.

**Table 3.3**  
***Goodness-of-fit indices***

Overall fit measures	Desired values
Satorra-Bentler Minimum fit function Chi-Square	A non-significant result indicates good model fit.
$X^2 / df$ (Chi-square / Degrees of Freedom)	Values between 2 and 5 indicate good fit
Root Mean Square Error of Approximation (RMSEA)	Values: <.05 indicate good fit ≥.05 and <.08 indicate reasonable fit, and ≥.08 indicate poor fit
P-Value for Test of Close Fit (RMSEA < 0.05)	Values >.05 indicate good fit
90% Confidence Interval for RMSEA	If the lower limit is close to zero and the upper limit is less than .08, the model shows good fit
Root Mean Square Residual (RMR)	Low values indicate good fit (<.08)
Standardised Root Mean Square Residual (SRMR)	Values indicate the following: < .05 indicate good fit

>.05 and <.08 indicate acceptable fit

### Absolute fit index

Goodness-of-fit Index (GFI) Values should range between 0 and 1.  
Values >.90 indicate good fit.

### Relative fit indices

Non-normed Fit Index (NNFI) Values range between 0 and 1. Values  
Normed Fit Index (NFI) >.90 and ≤.95 indicate reasonable fit and  
Comparative Fit Index (CFI) values >.95 indicate good fit.  
Incremental Fit Index (IFI)  
Relative Fit Index (RFI)

---

(Diamantopoulos & Siguaaw, 2000; Hooper Coughlan & Mullen, 2008; Kelloway, 1998)

#### 3.4.6.2 Statistical hypotheses and related fit statistics

The first hypothesis that needs to be tested in the evaluation process of the model fit focuses on the whether or not the model fits the population perfectly.

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

The Sattora-Bentler Chi-Square statistics is used to assess the perfect fit of the model (Diamantopoulos & Siguaaw, 2000). The null hypothesis of perfect fit is rejected if the chi-square is significant ( $p < .01$ ). However, perfect fit of any model could be identified as a “to good to be true” scenario. The reason for this is that any model that is developed through a research process is an estimate of the population which makes it unlikely that a model will show perfect fit (Diamantopoulos & Siguaaw, cited in Hendrikz, 2017). If this hypothesis is rejected, it is advised that the chi-square statistics should rather be used as a measure of the goodness-of-fit of the overall model (Diamantopoulos & Siguaaw, 2000).

The second important overall fit measure, which is used to assess the model’s fit, is the root square error of approximation (RMSEA). The RMSEA measures how the model fits the overall population covariance matrix. The RMSEA is one of the most informative fit statistics to use when interpreting the indices (Diamantopoulos & Siguaaw, 2000). The exact fit and alternate fit hypothesis are indicated below:

$$H_{01}: RMSEA = 0$$

$H_{a1}$ : RMSEA  $> 0$

If one assumes that the overall model does not fit accurately, the researcher will test the close fit hypothesis. This provides a 95% confidence interval for RMSEA (Diamantopoulos & Siguaaw, 2000). The close fit and close fit alternate hypotheses are indicated below:

$H_{02}$ : RMSEA  $< .05$

$H_{a2}$ : RMSEA  $\geq .05$

Next, the RMR and SRMR, which relates to the overall fit measures were used. As cited by Hendrikz (2017) the RMR and SRMR fit indices represents the “square root of the difference between the residuals of the sample covariance matrix and the hypothesised covariance model” (p. 127). Low RMR values can be seen as an indicator of good fit, where RMR values which ranges from 1 to zero where zero is represented of perfect fit and values between zero and .05 indicate good fit (Hu & Bentler, cited in Hooper et al., 2008).

The goodness-of-fit index is the fourth important fit measure that was used. It is referred to as an absolute fit measure because it is used to assess the extent to which the covariances predicted from the parameter estimates reproduce the sample covariances” (Diamantopoulos & Siguaaw, 2000, p.87). A value of above .90 shows good fit.

Lastly, the researcher focussed on the relative fit indices. According to Kelloway (1998) these indices assist the researcher to determine the extent to which the fit of the model improves when it is compared to a model that in effect has no relationship when looking at the variables which makes up the model. Values above .95 and close to 1 indicates a good model fit (Hooper et al., 2008).

#### 3.4.6.3 Statistical hypotheses of the LBS, ancillary scales and structural model

During this study, the fit of five models had to be evaluated. The RMSEA was used as an initial fit statistic in these evaluations. After the explanation of the RMSEA fit statistic above, hypotheses for exact and alternate exact fit, and close fit and alternate close fit had to be postulated for each of the models to be measured. All these hypotheses and the specific model it relates to are depicted in Table 3.4.

**Table 3.4**  
**Statistical hypotheses relating to model fit**

Model to be evaluated	Exact fit hypothesis	Alternate exact fit hypothesis	Close fit hypothesis	Alternate close fit hypothesis
LBS measurement model (Hypotheses 1 and 2)	$H_{01}: RMSEA = 0$	$H_{a1}: RMSEA > 0$	$H_{02}: RMSEA < .05$	$H_{a2}: RMSEA \geq .05$
LTS measurement model (Hypotheses 3 and 4)	$H_{03}: RMSEA = 0$	$H_{a3}: RMSEA > 0$	$H_{04}: RMSEA < .05$	$H_{a4}: RMSEA \geq .05$
LEQ measurement model (Hypotheses 5 and 6)	$H_{05}: RMSEA = 0$	$H_{a5}: RMSEA > 0$	$H_{06}: RMSEA < .05$	$H_{a6}: RMSEA \geq .05$
Measurement model underlying the Structural model (Hypotheses 7 and 8)	$H_{07}: RMSEA = 0$	$H_{a7}: RMSEA > 0$	$H_{08}: RMSEA < .05$	$H_{a8}: RMSEA \geq .05$
Structural model (Hypotheses 9 and 10)	$H_{09}: RMSEA = 0$	$H_{a9}: RMSEA > 0$	$H_{010}: RMSEA < .05$	$H_{a10}: RMSEA \geq .05$

### 3.4.7 Phase 6a: Evaluation of the fit of the measurement model of the LBS

In order for the researcher to determine how the underlying data fitted the measurement model of the LBS, the CFA process was utilised. This was used to determine the construct validity of the LBS. The null and alternate hypotheses for exact fit ( $H_{01}$  and  $H_{a01}$ ) and close fit ( $H_{02}$  and  $H_{a02}$ ) were tested by making use of the completely standardised solution in LISREL 8.8.

Random item parcelling was used for the purpose of this study, which serves as a data analysis solution for data problems such as non-normality, small sample sizes and unstable parameter estimates (Myburg, 2013). A parcel can be described as an aggregate indicator that consists of the sum of two or more items (Little, Cunningham, Shahar & Widaman, 2002).

For the SEM process normal distributed continuous observed variables are required. According to Myburg (2013) “by using item parcels in the study, new variables can be created that will be a better estimation of normally distributed continuous variables that will reduce the distortion of model parameter estimates” (p. 95). The reason for the use of item parcelling is to evaluate the LBS psychometrically as a freestanding measure of organisational leadership behaviour. The parcelled data requires less estimated parameters when defining the construct. The detail of how the items were parcelled is presented in Appendix A.

#### **3.4.8 Phase 6b: Validation of the measurement model’s paths**

In this phase of the study the validation of the measurement model’s hypothesised path-coefficients was assessed. The significance and magnitude of the paths between the dimensions of the LBS and their related item parcels was examined.

The relationship between  $X$  and  $\xi$  is illustrated by Lambda ( $\lambda$ ) and this was measured by the analysis of the standardised indicator loadings of the items on their related LBS dimensions. These loadings should be significant ( $p < .05$ ) and large ( $\lambda_{ij} \geq .50$ ) (Hendrikz, 2017). For this part of the analysis the loadings were gathered from the LAMBDA-X matrix of the LISREL 8.8 output.

#### **3.4.9 Phase 6c: Power assessment of the LBS measurement model**

The statistical power of a model relates to the probability of not rejecting an incorrect model. There is a focus on the probability of making a Type 1 error i.e rejecting a corrected model. According to Diamantopoulos and Siguaw (2000) “the probability of doing this is “captured by the significance level,  $\alpha$ , which is usually set at .05. A significant chi-square result indicates that if the null hypothesis is true (i.e. the model is correct in the population), the probability of incorrectly rejecting it is low” (p. 93).

The power of the test can be an indication of the changes of rejecting a false null hypothesis (i.e the incorrect model) (Diamantopoulos & Siguaw, 2000). It is important to make use of the power assessment because aspects such as sample size plays a big role in the fit of the model. There are two types of calculations that is important when calculating the power. The first test focuses on the test of exact fit and the second test to close fit. With regard to the exact

fit test the RMSEA = .05 is used and for the close fit test the RMSEA = .08 which represents the upper limit for the reasonable fit (Diamantopoulos & Sigauw, 2000).

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

#### **3.4.10 Phase 7: The evaluation of the fit of the measurement models of the ancillary scales**

As mentioned in previous sections of the study, the ancillary scales included for the purpose of the structural model showed a reasonable good fit. However, the measurement models of the two scales that will be used in the structural model were also tested for fit using the data that was collected from the sample used in this study.

Both ancillary scales were tested for reliability as indicated in Phase 5 but also for model fit by making use of CFA. Both the null and alternate hypotheses for exact fit and the hypotheses for close and alternate close fit were tested for the LTS and the LEQ. For both these scales a range of goodness-of-fit indices (see Table 3.4) were used to conclude on the fit of these models.

#### **3.4.11 Structural equation modelling**

The moment that the researcher established that the LBS provides a construct which is a valid and reliable measure of organisational leadership behaviour, an analysis was conducted to determine the extent to which the proposed structural model pathways are valid and significant. The process used for this is structural equation modelling (SEM) which allows a researcher to test the significance and the strength of relationships between two or more latent variables (Weston & Gore, 2006).

For the purpose of this study the latent variables were organisational leadership behaviour, trust in the leader and leader effectiveness. CFA was used as the statistical technique to determine the strength of the hypothesised relationships after the variables were measured by selected scales and then correlated with each other.

The steps used within this research plan for the structural model were model specification; testing model fit and model modification (Diamantopoulos & Sigauw, 2000). For the purpose of model specification two steps had to be followed in order for the researcher to stipulate

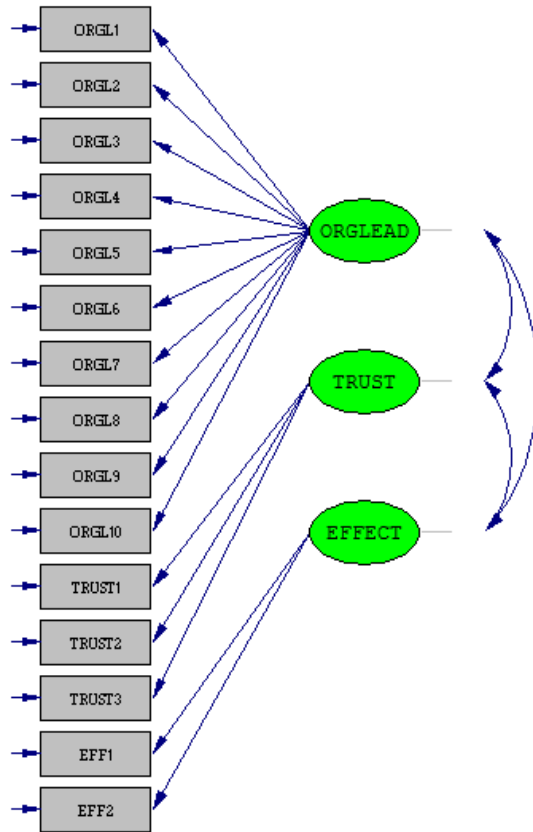


the relationships that exist between latent variables (Weston & Gore, 2006). These steps where (1) specifying the overall measurement model that currently underlies the structural model and (2) specifying the structural model as proposed by the researcher.

#### **3.4.12 Phase 8: Specification of the overall measurement model underlying the proposed structural model**

For the specification of the overall measurement model the researcher required the examination of the factor loadings of the items of the various scales onto their respective scales. The various items were randomly grouped into item parcels, which formed the indicator variables that loaded onto the respective scales. The item parcel detail of how the items were parcelled are illustrated in Appendix B.

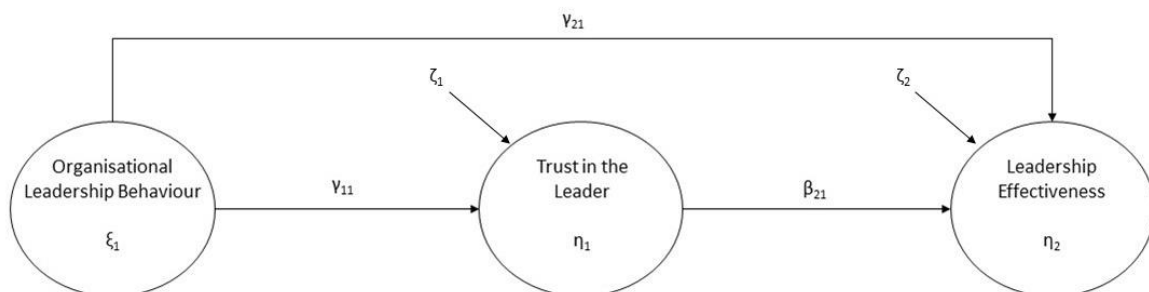
The items that is grouped into parcels would still represent a good measure of the construct because of the logic that the individual items accurately describe the construct they measure. This is the main reason why the researcher did the reliability analyses, exploratory factor analyses (to ensure unidimensionality) and the evaluation of the measurement model fit of the two ancillary scales. The importance of item parcelling was described in Phase 6 of the study. The overall measurement model for SEM are illustrated in Figure 3.2.



**Figure 3.2:** Overall measurement model for SEM

### 3.4.13 Phase 9: Specification of the structural model

By specifying the structural model, the researcher stipulated the relationships which were proposed in the second substantive research hypothesis stated in Section 3.2: “The structural model provides a valid description of the way in which organisational leadership behaviour is embedded in a larger nomological network by describing the outcomes of organisational leadership behaviour as depicted in Chapter 2”.



**Figure 3.3:** Structural Model

Organisational leadership behaviour forms the exogenous (independent) variable illustrated as Ksi ( $\xi$ ). Trust in the leader and leader effectiveness are endogenous (dependent) variables depicted as Eta ( $\eta$ ). Gamma ( $\gamma$ ) is an indication of the path between the exogenous and two endogenous variables, whereas Beta ( $\beta$ ) represents the pathway between the two endogenous latent variables. The residual errors in the endogenous variables are illustrated by Zeta ( $\zeta$ ).

The structural model can be depicted by the following structural model equation (Diamantopoulus & Siguaw, 2000, p.46):

$$\eta = B\eta + \Gamma\xi + \zeta$$

#### **3.4.14 Phase 10a: Evaluating the fit of the overall measurement model underlying the structural model**

The CFA process was used to determine the extent to which the data collected for this study fitted the overall measurement model of the structural model. The null and alternate hypotheses for the exact fit ( $H_{07}$  and  $H_{a7}$ ) and the null and alternate hypotheses for close fit ( $H_{08}$  and  $H_{a8}$ ) were tested. Further analyses were done by focussing on the additional goodness-of-fit indices (see Table 3.4) discussed in the previous sections of the study.

#### **3.4.15 Phase 10b: Evaluating the fit of the structural model**

The process of CFA was used to determine the fit of the structural model, which provided additional information about the construct validity of the structural model. The null and alternate hypotheses for exact fit ( $H_{09}$  and  $H_{a9}$ ) and the null and alternate hypotheses for close fit ( $H_{010}$  and  $H_{a10}$ ) were tested. Additional analyses were done by focussing on the additional goodness-of-fit indices (see Table 3.4) indicated in the previous sections of the study.

#### **3.4.16 Phase 10c: Evaluating the validity of the hypothesised paths of the structural model**

Although the structural model can illustrate good fit, it is not guaranteed that the relationships between the latent variables of the structural model are significant as theorised in the literature. Therefore, an analysis of the magnitude of the path coefficients are required to prove this.

The detailed substantive research hypotheses underlying the relationships between the latent variables are depicted below:

**Substantive research hypothesis 11:** Organisational leadership behaviour ( $\xi_1$ ) has a significant positive effect on trust in leader ( $\eta_1$ ).

**Substantive research hypothesis 12:** Organisational leadership behaviour ( $\xi_1$ ) has a significant positive effect on leader effectiveness ( $\eta_2$ ).

**Substantive research hypothesis 13:** Trust in the leader ( $\eta_1$ ) has a significant positive effect on leader effectiveness ( $\eta_2$ ).

The substantive hypotheses depicted above translates into the path coefficient statistical hypotheses illustrated in Table 3.5.

**Table 3.5**  
*Path coefficient statistical hypotheses*

Hypothesis 11	Hypothesis 12	Hypothesis 13
$H_{011}: \gamma_{11} = 0$	$H_{012}: \gamma_{21} = 0$	$H_{013}: \beta_{21} = 0$
$H_{a11}: \gamma_{11} > 0$	$H_{a12}: \gamma_{21} > 0$	$H_{a13}: \beta_{21} > 0$

The matrices that will be utilized in LISREL 8.8 which provides the required information about the path coefficients of the structural model are the GAMMA matrix, which provides the researcher with information about the path coefficient between organisational leadership behaviour ( $\xi_1$ ) and trust in the leader ( $\eta_1$ ) but also for the relationship between organizational leadership ( $\xi_1$ ) and leader effectiveness ( $\eta_2$ ). The BETA matrix can be utilised for the path coefficient between trust in leader ( $\eta_1$ ) and leader effectiveness ( $\eta_2$ ).

#### **3.4.17 Phase 10d: Power assessment**

This method of statistical analysis was explained earlier in the research design (see Phase 6c). The importance of conducting the power assessment lies within the confirmation that the correct decisions had been made with regard to the overall fit of the model. The researcher will follow the same procedure as explained in Phase 6c.

#### **3.4.18 Phase 10e: Model modification**

LISREL 8.8 in some cases recommend modifications that one should consider with regard to the structural model. Thus, the researcher would consider making modifications if it contributes towards the underlying theory of the LBS and this can be theoretically justified (Diamantopoulos & Siguaaw, 2000).

### **3.5 THE EVALUATION AND CONSIDERATIONS OF RESEARCH ETHICS**

When basing research on empirical behaviour the Policy of Responsible Research Conduct (2015) of the University of Stellenbosch has a strict policy in place where any study that involves interaction with or observation of human subjects, groups of individuals or organisations require ethical clearance from the Departmental Ethics Screening Committee (DESC). Research are categorised in terms of the risk it may have toward participants, these categories have been identified as minimal risk, low risk, medium risk and high risk (Horn, Graham, Prozesky and Theron, 2015).

It is important considering these ethical risks because it can assist the researcher in determining whether the benefits of the research done will outweigh the potential ethical risks. The researcher argues that the need for effective organisational leadership behaviours within South Africa and the resulting importance of developing the LBS scale that can be used to predict leadership behaviour outweighs the potential ethical risks that might be associated with this study.

The researcher adhered to the procedures and guidelines as stipulated in Annexure 12 of the Health Profession Act (Act no. 56 of 1974) of the Republic of South Africa and the ethical clearance Standard Operating Procedures of Stellenbosch University. Ethical clearance was given by the DESC (ethical committee of Stellenbosch University).

#### **3.5.1 Institutional approval**

Concerning the data collection process and obtaining permission from the institutions, the following procedures were followed:

- a) Written consent was obtained from the organisations before conducting the research

- b) The host organisations were informed telephonically and electronically about the purpose and intended outcomes of the research
- c) The final research was conducted in line with the specifications from the host organisations.

### **3.5.2 Informed consent**

Before the researcher commenced with the research process, the objectives, method and importance of the study was explained to the participants. This was done electronically or where possible in face-to-face sessions.

In terms of the process of informed consent the researcher followed the instructions provided in Annexure 12, Section 89 of the Ethical Rules of Conduct for Practitioners that is registered under the Health Professions Act states the following (Republic for South Africa, 2006, p. 42):

(1) A psychologist shall use language that is reasonably understandable to the research participant concerned in obtaining his or her informed consent.

(2) Informed consent referred to in sub rule (1) shall be appropriately documented, and in obtaining such consent the psychologist shall –

- (a) inform the participant of the nature of the research;
- (b) inform the participant that he or she is free to participate or decline to participate in or to withdraw from the research;
- (c) explain the foreseeable consequences of declining or withdrawing;
- (d) inform the participant of significant factors that may be expected to influence his or her willingness to participate (such as risks, discomfort, adverse effects or exceptions to the requirement of confidentiality);
- (e) explain any other matters about which the participant enquires;
- (f) when conducting research with a research participant such as a student or subordinate, take special care to protect such participant from the adverse consequences of declining or withdrawing from participation;

(g) when research participation is a course requirement or opportunity for extra credit, give a participant the choice of equitable alternative activities; and

(h) in the case of a person who is legally incapable of giving informed consent, nevertheless –

(i) provide an appropriate explanation;

(ii) obtain the participants assent; and

(iii) obtain appropriate permission from a person legally authorized to give such permission.

### **3.5.3 Confidentiality of participant data and feedback provided to institutions**

All data collected from the participants was anonymous, secured and treated with confidentiality. Feedback will be provided to organisations that requested feedback from the researcher, where the data will be presented in aggregate form only, to ensure the confidentiality of the responses are maintained (Standard Operating Procedures, 2011).

## **3.5 SUMMARY**

The methodology for any research study is a crucial aspect to consider. The purpose of Chapter 3 was to provide an in-depth outline of the research plan or methodology that was used in the process of assessing the validity of the internal structure of LBS. This process included the following:

- Content validation of items
- Item analysis which was used to determine the quality and internal reliability of the dimensions
- Exploratory factor analysis (EFA) to determine the uni-dimensionality of the subscales of the LBS and ancillary scales.
- Confirmatory factor analysis (CFA) which enhanced the findings of the EFA by fitting the measurement models of the LBS and ancillary scales
- The structural validity of the LBS was tested by analysis of the relationship with other latent variables (trust in the leader and leader effectiveness). This explained the

process of structural equation modelling in detail and how it was used to test the effect of the latent variables on each other.

The results that was obtained after the analyses was performed as part of the research plan will be discussed and reported in Chapter 4.



## CHAPTER 4

### RESEARCH RESULTS

#### 4.1 INTRODUCTION

The previous chapter provided the in-depth research plan that was followed during the development of the items for the LBS and the analyses of the underlying data of the LBS's measurement model and the proposed structural model. Chapter 4 will focus on the results of the statistical analyses that were performed during the research process.

Some of the phases that were discussed in Chapter 3 will be excluded from this chapter because they did not require any statistical analysis. The following phases will not be discussed in Chapter 4:

- Phase 1: Specification of the LBS
- Phase 2: Specification of the ancillary scales
- Phase 3: Sample selection and data collection
- Phase 8: Specification of the overall measurement model underlying the proposed structural model
- Phase 9: Specification of the structural model

The following phases provided in Table 4.1 required statistical analysis and will be discussed in-depth in this chapter.

**Table 4.1**  
***Phases requiring statistical analysis***

Phase in research plan	Method of analysis
Phase 4a: LBS item analysis	Internal reliability analysis utilising SPSS reliability analysis
Phase 4b: LBS factor analysis	EFA utilising SPSS factor analysis
Phase 5a: Reliability analysis of the ancillary scales	Reliability analysis utilising SPSS reliability analysis
Phase 5b: Factor analysis of the ancillary scales	EFA utilising SPSS factor analysis

Phase 6a: Evaluation of the fit of the measurement model of the LBS	CFA utilising LISREL 8.8
Phase 6b: Validation of the LBS measurement model's paths	LAMBDA-X matrix analysis (factor loadings)
Phase 6c: Power assessment of the LBS measurement model	Preacher and Coffman power assessment
Phase 7: The evaluation of the fit of the measurement models of the ancillary scales	CFA utilising LISREL 8.8
Phase 10a: Evaluating the fit of the measurement model underlying the structural model	CFA utilising LISREL 8.8
Phase 10b: Evaluating the fit of the structural model	CFA utilising LISREL 8.8
Phase 10c: Evaluating the validity of the hypothesised paths of the structural model	Analysing the GAMMA and BETA path coefficients from LISREL 8.8 output
Phase 10d: Power assessment of the structural model	Preacher and Coffman power assessment
Phase 10e: Model modification	Analysing the model modification indices from LISREL 8.8 output

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## 4.2 MISSING VALUES

Missing values are the result of participants not responding to some of the questions. According to Myburg (2013) it is important to address missing values before starting with data analysis. In this case, of 210 cases, none of the cases was incomplete; the data was captured electronically, which made all the responses compulsory before the questionnaire could be submitted to Sun Surveys.

## 4.3 EVALUATION OF MULTIVARIATE NORMALITY AND DESCRIPTIVE STATISTICS

### 4.3.1 Evaluating Multivariate Normality

It is important to investigate the multivariate normality of the composite indicators via PRELIS. PRELIS was used in the evaluation of the multivariate normality (see Table 4.2 and 4.3) of the

indicator variables. After analysis of the null hypothesis the multivariate normality before normalisation had to be rejected ( $p < .05$ ). Thus, an attempt to normalise the composite indicator variables distribution using PRELIS was done. Since the attempt at normalisation had the consequence of decreasing the deviation of the observed multivariate distribution from the theoretical multivariate normal distribution as reflected in the chi-square statistics, the normalised data was used to fit the measurement model. Thus, robust maximum likelihood (RML) estimation was used.

**Table 4.2**  
***Multivariate Normality Before Normalisation***

<b>Multivariate Normality</b>							
Test of Multivariate Normality for Continuous Variables							
Skewness			Kurtosis			Skewness and Kurtosis	
Value	Z-Score	P-Value	Value	Z-Score	P-Value	Chi-Square	P-Value
-----	-----	-----	-----	-----	-----	-----	-----
13.241	16.349	0.000	75.312	9.578	0.000	359.024	0.000

**Table 4.3**  
***Multivariate Normality After Normalisation***

<b>Multivariate Normality</b>							
Test of Multivariate Normality for Continuous Variables							
Skewness			Kurtosis			Skewness and Kurtosis	
Value	Z-Score	P-Value	Value	Z-Score	P-Value	Chi-Square	P-Value
-----	-----	-----	-----	-----	-----	-----	-----
5.839	8.667	0.000	60.139	6.074	0.000	112.014	0.000

#### **4.3.2 Evaluating the bivariate correlations between the LBS and ancillary scales**

Testing the product-moment correlations between the LBS subscales and the two ancillary scales, the method of bivariate Pearson Correlation via SPSS was used to produce the correlation coefficients ( $r$ ). The correlation coefficients are used to measure the strength and direction of the linear relationships that exists between the variables.

When interpreting the correlation coefficients between two variables it is important to take the following into consideration:

- a) The sign of the correlation coefficient, which is an indication of the direction of the relationship (Diamantopolous & Siguaw, 2000);
- b) and the strength of the correlation depends on the following (1) values <.3 could be interpreted as weak correlations; (2) values between .3 and .5 could be considered as moderate correlations; (3) and lastly values >.5 can be considered as strong correlations (Diamantopolous & Siguaw, 2000).

The correlation coefficients of all the subscales are included in Table 4.4.

**Table 4.4**  
**Correlation Matrix of the LBS subscales and the ancillary scales**

Product Pearson Correlations													
Correlations													
		EMPOWER	SUPCON	DEVELOP	CONSULTING	TASKGOAL	MONITOR	NETWORK	CHANGE	ETHICAL	TEAM	TRUST	EFFECTIVE
EMPOWER	Pearson Correlation	1	.834**	.823**	.828**	.599**	.566**	.598**	.778**	.768**	.778**	.710**	.731**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	210	210	210	210	210	210	210	210	210	210	210	210
SUPCON	Pearson Correlation	.834**	1	.872**	.851**	.677**	.553**	.626**	.808**	.846**	.800**	.827**	.822**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	210	210	210	210	210	210	210	210	210	210	210	210
DEVELOP	Pearson Correlation	.823**	.872**	1	.848**	.726**	.594**	.681**	.828**	.830**	.836**	.788**	.828**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	210	210	210	210	210	210	210	210	210	210	210	210
CONSULTING	Pearson Correlation	.828**	.851**	.848**	1	.653**	.525**	.668**	.815**	.818**	.783**	.740**	.773**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000	.000	.000	.000	.000	.000
	N	210	210	210	210	210	210	210	210	210	210	210	210
TASKGOAL	Pearson Correlation	.599**	.677**	.726**	.653**	1	.772**	.580**	.739**	.698**	.740**	.648**	.732**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000	.000	.000	.000	.000	.000
	N	210	210	210	210	210	210	210	210	210	210	210	210
MONITOR	Pearson Correlation	.566**	.553**	.594**	.525**	.772**	1	.536**	.696**	.584**	.707**	.537**	.670**
	Sig. (2-tailed)	.000	.000	.000	.000	.000		.000	.000	.000	.000	.000	.000
	N	210	210	210	210	210	210	210	210	210	210	210	210
NETWORK	Pearson Correlation	.598**	.626**	.681**	.668**	.580**	.536**	1	.765**	.685**	.744**	.577**	.660**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000		.000	.000	.000	.000	.000
	N	210	210	210	210	210	210	210	210	210	210	210	210
CHANGE	Pearson Correlation	.778**	.808**	.828**	.815**	.739**	.696**	.765**	1	.842**	.890**	.762**	.851**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000		.000	.000	.000	.000
	N	210	210	210	210	210	210	210	210	210	210	210	210
ETHICAL	Pearson Correlation	.768**	.846**	.830**	.818**	.698**	.584**	.685**	.842**	1	.851**	.878**	.877**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000		.000	.000	.000
	N	210	210	210	210	210	210	210	210	210	210	210	210
TEAM	Pearson Correlation	.778**	.800**	.836**	.783**	.740**	.707**	.744**	.890**	.851**	1	.775**	.870**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000		.000
	N	210	210	210	210	210	210	210	210	210	210	210	210
TRUST	Pearson Correlation	.710**	.827**	.788**	.740**	.648**	.537**	.577**	.762**	.878**	.775**	1	.868**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	
	N	210	210	210	210	210	210	210	210	210	210	210	210
EFFECTIVE	Pearson Correlation	.731**	.822**	.828**	.773**	.732**	.670**	.660**	.851**	.877**	.870**	.868**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	
	N	210	210	210	210	210	210	210	210	210	210	210	210

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

**Note:** EMPOWER: Employee Empowerment; SUPCON: Support and Consideration; DEVELOP: Employee Development; TASKGOAL: Task and Goal Setting; MONITOR: Monitoring; NETWORK: Networking; CHANGE: Leading Change; ETHICAL: Ethical Leadership; TEAM: Strategic Team Leadership; TRUST: Trust in the Leader; EFFECTIVE: Leader Effectiveness

After analysis of the Pearson correlation matrix of all the subscales it was found that most of the relationships between the variables could be interpreted as moderate to strong correlations and statistically significant (p <. 05) The correlation coefficient between

Monitoring and Consulting of .525 was the lowest value which still indicates a moderate and significant relationship between the two variables. Thus, it can be concluded that all the variables correlate moderately to strong with each other and could also be seen as statistically significant. Additional product correlations were performed, using SPSS, for the purpose of the structural model's hypotheses. The correlation was performed by using organisational leadership as a variable and the two variables trust in the leader and leader effectiveness.

After analysis of the Pearson correlation matrix of the three variables it was found that the relationships between the variables could be interpreted as strong correlations and statistically significant ( $p < .05$ ). The correlation between organisational leadership and the two variables trust in the leader and leader effectiveness was .838 and .901 respectively (see Table 4.5). This is an indication that these variables correlate strong and statistically significant with each other. It is also important to test the significance of the relationship between trust in the leader and leader effectiveness in order for the researcher to support the hypothesis. The product correlation (.867) between these two variables is found to be a strong correlation and statistically significant ( $p < .05$ ).

**Table 4.5**  
**Correlation Matrix of the Organisational Leadership and the two ancillary scales**

**Product Pearson Correlations**

		Correlations		
		ORGLEAD	TRUST	EFFECT
ORGLEAD	Pearson Correlation	1	.838**	.901**
	Sig. (2-tailed)		.000	.000
	Sum of Squares and Cross-products	207.990	167.227	220.406
	Covariance	.990	.796	1.050
	N	211	211	211
TRUST	Pearson Correlation	.838**	1	.867**
	Sig. (2-tailed)	.000		.000
	Sum of Squares and Cross-products	167.227	191.559	203.635
	Covariance	.796	.912	.970
	N	211	211	211
EFFECT	Pearson Correlation	.901**	.867**	1
	Sig. (2-tailed)	.000	.000	
	Sum of Squares and Cross-products	220.406	203.635	287.949
	Covariance	1.050	.970	1.371
	N	211	211	211

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

**Note:** ORGLEAD: Organisational Leadership Behaviour; TRUST: Trust in the Leader; EFFECT: Leader Effectiveness

Before the item and factor analysis of the study was conducted the researcher focussed on an analysis of the descriptive statistics. See Table 4.6 for the overall descriptive statistics of the LBS and the ancillary scales.

**Table 4.6**  
***Descriptive Statistics of the LBS subscales and the ancillary scales***

**Descriptive Statistics**

		Statistics											
		EMPOWER	SUPCON	DEVELOP	CONSULTIN G	TASKGOAL	MONITOR	NETWORK	CHANGE	ETHICAL	TEAM	TRUST	EFFECTIVE
N	Valid	210	210	210	210	210	210	210	210	210	210	210	210
	Missing	0	0	0	0	0	0	0	0	0	0	0	0
	Mean	4.6527	4.4259	4.1690	4.2423	4.3995	4.6393	4.3302	4.2601	4.4848	4.3594	3.9066	4.5397
	Std. Deviation	.96538	1.19382	1.23759	1.21709	.98993	.94674	1.17694	1.15307	1.26087	1.08732	.95736	1.17298
	Variance	.932	1.425	1.532	1.481	.980	.896	1.385	1.330	1.590	1.182	.917	1.376
	Skewness	-.925	-.757	-.558	-.674	-1.000	-1.278	-.771	-.818	-.925	-.919	-.875	-1.000
	Std. Error of Skewness	.168	.168	.168	.168	.168	.168	.168	.168	.168	.168	.168	.168
	Kurtosis	.413	-.332	-.682	-.478	.781	1.971	-.181	-.018	-.086	.295	.021	.263
	Std. Error of Kurtosis	.334	.334	.334	.334	.334	.334	.334	.334	.334	.334	.334	.334

**Note:** EMPOWER: Employee Empowerment; SUPCON: Support and Consideration; DEVELOP: Employee Development; TASKGOAL: Task and Goal Setting; MONITOR: Monitoring; NETWORK: Networking; CHANGE: Leading Change; ETHICAL: Ethical Leadership; TEAM: Strategic Team Leadership; TRUST: Trust in the Leader; EFFECTIVE: Leadership Effectiveness

The descriptive statistics assist the researcher to determine the measures that focussed on the central tendency (means), measures of dispersion (standard deviation and variance) and lastly the measures of kurtosis and skewness.

The next section of this study will focus on the item analysis of the overall LBS scale to determine the reliability of each subscale.

#### 4.4 PHASE 4a: ITEM ANALYSIS OF THE LBS

Item analysis or also known as reliability analysis was done by utilising SPSS's reliability analysis. As discussed earlier, the purpose of item analysis is to ensure that the overall quality and internal reliability of the items used for the development of the LBS scale are adequate. Item analysis is important to ensure that all items selected for a scale is a true reflection of the latent variable they intend to measure (Henning, Theron & Spangenberg, 2004).

Item analysis was conducted on all ten subscales of the LBS; this section (see Table 4.7 to 4.17) will contain an in-depth discussion of the item analysis of each one of these subscales. For item analysis it is important to take the following statistics into consideration when interpreting the statistics:

- a) The reliability of the subscales was determined by the Cronbach's alpha, which ideally should be  $\geq .70$  for research purposes (Kerlinger & Lee, 2000).
- b) The item-total statistics was also examined which assisted the researcher to identify the correlation between the individual item scores and the overall scores. The ideal item-total correlation should be  $> .30$  for the item to indicate that it is measuring the specific scale (Pallant, 2010).

#### 4.4.1 Item Analysis: Employee Empowerment

The subscale Employee Empowerment comprised of 14 items. The Cronbach's alpha for this scale was an excellent .95 (Nunnally, 1978). The item-total statistics revealed that the corrected item-total correlations were above .30, which is an indication that all items reflect the same underlying factor (Pallant, 2010). This is supported by the inter-item correlations which was greater than .30 (mean = .57). None of the items, if deleted would have an increased effect on the alpha value. On balance, evidence suggested that none of the items could be considered as poor and none of them should be deleted.

**Table 4.7**  
*Reliability and Item-total statistics: Employee Empowerment*

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardised Items	N of Items
.950	.949	14

Scale Statistics			
Mean	Variance	Std. Deviation	N of Items
65.14	182.66	13.51	14

**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
EE8	60.77	154.754	.788	.790	.945
EE9	60.71	153.956	.832	.805	.943
EE10	60.41	164.904	.582	.443	.950
EE11	60.56	159.089	.697	.554	.947
EE12	60.60	153.802	.818	.743	.944
EE13	60.28	162.727	.626	.556	.949
EE14	59.98	161.019	.711	.629	.947
EE15	60.27	156.110	.828	.756	.944
EE16	60.49	158.108	.715	.587	.947
EE17	60.05	163.299	.642	.614	.948
EE18	60.24	157.936	.814	.747	.944
EE19	60.61	155.750	.771	.679	.945
EE20	61.02	155.353	.729	.632	.946
EE21	60.80	156.761	.764	.652	.945

**4.4.2 Item Analysis: Support and Consideration**

The subscale Support and Consideration consisted out of 9 items. The Cronbach's alpha for this scale was an excellent .95 (Nunnally, 1978). The item-total statistics revealed that the corrected item-total correlations were above .30, which is an indication that all items reflect the same underlying factor. This is supported by the inter-item correlations which was greater than .30 (mean = .69). None of the items, if deleted would have an increase on the alpha value. On balance, evidence suggested that none of the items could be considered as poor and none of them should be deleted.



**Table 4.8**  
**Reliability and Item-total statistics: Support and Consideration**

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardised Items	N of Items
.952	.952	9

Scale Statistics			
Mean	Variance	Std. Deviation	N of Items
39.83	115.44	10.7	9

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
SC22	35.37	98.885	.666	.502	.953
SC23	35.14	93.861	.780	.682	.947
SC24	35.60	90.414	.822	.734	.945
SC25	35.67	88.797	.864	.805	.943
SC26	35.17	92.506	.823	.721	.945
SC27	35.13	93.414	.817	.720	.946
SC28	35.25	88.694	.896	.809	.941
SC29	35.71	91.363	.790	.659	.947
SC30	35.63	87.937	.813	.707	.946

#### 4.4.3 Item Analysis: Employee Development

The subscale Employee Development consisted out of 10 items. The Cronbach's alpha for this scale was an excellent .97 (Nunnally, 1978). The item-total statistics revealed that the corrected item-total correlations were above .30, which is an indication that all items reflect

the same underlying factor. This is supported by the inter-item correlations which was greater than .30 (mean = .73). None of the items, if deleted would have an increased effect on the alpha value. On balance, evidence suggested that none of the items could be considered as poor and none of them should be deleted.

**Table 4.9**  
**Reliability and Item-total statistics: Employee Development**

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardised Items	N of Items
.965	.965	10

Scale Statistics			
Mean	Variance	Std. Deviation	N of Items
41.69	153.16	12.37	10

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
ED31	37.33	124.107	.856	.790	.960
ED32	37.60	125.083	.849	.799	.961
ED33	37.79	123.037	.861	.781	.960
ED34	37.45	124.526	.863	.759	.960
ED35	37.36	127.274	.788	.665	.963
ED36	36.99	130.612	.757	.595	.964
ED37	37.45	127.301	.838	.721	.961
ED38	37.74	119.553	.899	.865	.959
ED39	37.68	122.295	.848	.800	.961
ED40	37.83	121.683	.847	.758	.961

#### 4.4.4 Item Analysis: Consulting

The subscale Consulting consisted of 9 items. The Cronbach's alpha for this scale was an excellent .97 (Nunnally, 1978). The item-total statistics revealed that the corrected item-total correlations were above .30, which is an indication that all items reflect the same underlying factor. This is supported by the inter-item correlations which was greater than .30 (mean = .73). None of the items, if deleted would have an effect on the alpha value. On balance, evidence suggested that none of the items could be considered as poor and none of them should be deleted.

**Table 4.10**  
**Reliability and Item-total statistics: Consulting**

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardised Items	N of Items
.961	.961	9

Scale Statistics			
Mean	Variance	Std. Deviation	N of Items
38.22	119.70	10.94	9

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
C41	34.21	94.842	.789	.717	.959
C42	33.86	95.786	.800	.749	.958
C43	34.23	93.074	.873	.778	.955
C44	33.83	94.368	.857	.765	.955

C45	34.11	95.498	.844	.763	.956
C46	33.72	98.279	.756	.599	.960
C47	33.94	95.553	.873	.775	.955
C48	33.86	94.437	.870	.877	.955
C49	33.98	93.552	.878	.880	.954

#### 4.4.5 Item Analysis: Task and Goal Setting

The subscale Task and Goal Setting consisted of 10 items. The Cronbach's alpha for this scale was an excellent .93 (Nunnally, 1978). The item-total statistics revealed that the corrected item-total correlations were above .30, which is an indication that all items reflect the same underlying factor. This is supported by the inter-item correlations which was greater than .30 (mean = .55). None of the items, if deleted would have an effect on the alpha value. On balance, evidence suggested that none of the items could be considered as poor and none of them should be deleted.

**Table 4.11**  
***Reliability and Item-total statistics: Task and Goal Setting***

<b>Reliability Statistics</b>			
Cronbach's Alpha	Cronbach's Alpha Based on Standardised Items	N of Items	
.926	.926	10	

<b>Scale Statistics</b>			
Mean	Variance	Std. Deviation	N of Items
44.04	97.91	9.89	10

<b>Item-Total Statistics</b>					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
TG50	39.85	79.025	.677	.558	.921
TG51	39.18	84.913	.541	.400	.927
TG52	39.96	75.289	.811	.718	.913
TG53	39.24	83.765	.611	.460	.923
TG54	39.82	78.234	.783	.670	.914
TG55	39.75	79.627	.785	.706	.915
TG56	39.63	79.369	.775	.651	.915
TG57	39.63	80.482	.728	.585	.917
TG58	40.09	77.934	.734	.586	.917
TG59	39.19	81.002	.704	.518	.919

#### 4.4.6 Item Analysis: Monitoring

The subscale Monitoring consisted of 8 items. The Cronbach's alpha for this scale was an excellent .90 (Nunnally, 1978). The item-total statistics revealed that the corrected item-total correlations were above .30, which is an indication that all items reflect the same underlying factor. This is supported by the inter-item correlations which was greater than .30 (mean = .54). None of the items, if deleted would have an increase on the alpha value. On balance, evidence suggested that none of the items could be considered as poor and none of them should be deleted.

**Table 4.12**  
**Reliability and Item-total statistics: Monitoring**

<b>Reliability Statistics</b>		
Cronbach's Alpha	Cronbach's Alpha Based on Standardised Items	N of Items
.899	.903	8

**Scale Statistics**

Mean	Variance	Std. Deviation	N of Items
37.14	57.25	7.56	8

**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
MA60	32.66	43.881	.735	.747	.882
MA61	32.72	43.728	.714	.749	.884
MA62	32.38	44.217	.724	.550	.883
MA63	32.74	44.651	.610	.458	.894
MA64	32.88	41.851	.734	.685	.882
MA65	31.91	46.797	.692	.846	.888
MA66	31.92	47.208	.654	.830	.890
MA67	32.79	43.394	.662	.619	.890

**4.4.7 Item Analysis: Networking**

The subscale Networking consisted of 9 items. The Cronbach's alpha for this scale was an excellent .93 (Nunnally, 1978). The item-total statistics revealed that the corrected item-total correlations were above .30, which is an indication that all items reflect the same underlying factor. This is supported by the inter-item correlations which was greater than .30 (mean = .58). None of the items, if deleted would have an increase on the alpha value. On balance, evidence suggested that none of the items could be considered as poor and none of them should be deleted.

**Table 4.13**  
**Reliability and Item-total statistics: Networking**

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardised Items	N of Items
.926	.926	9

Scale Statistics			
Mean	Variance	Std. Deviation	N of Items
39.02	112.14	10.59	9

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
N68	34.48	93.194	.659	.522	.921
N69	34.83	91.015	.691	.524	.919
N70	34.38	87.875	.783	.658	.914
N71	34.36	89.374	.764	.602	.915
N72	34.87	88.820	.709	.554	.919
N73	34.59	88.577	.754	.602	.916
N74	35.05	88.264	.743	.604	.916
N75	34.68	88.818	.749	.626	.916
N76	34.91	88.936	.718	.572	.918

#### 4.4.8 Item Analysis: Leading Change

The subscale Leading Change consisted of 13 items. The Cronbach's alpha for this scale was an excellent .97 (Nunnally, 1978). The item-total statistics revealed that the corrected item-total correlations were above .30, which is an indication that all items reflect the same

underlying factor. This is supported by the inter-item correlations which was greater than .30 (mean = .69). None of the items, if deleted would have an effect on the alpha value. On balance, evidence suggested that none of the items could be considered as poor and none of them should be deleted.

**Table 4.14**  
**Reliability and Item-total statistics: Leading Change**

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

Scale Statistics			
Mean	Variance	Std. Deviation	N of Items
55.48	225.64	15.02	13

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
CH77	51.02	196.523	.770	.694	.965
CH78	50.98	195.771	.800	.723	.965
CH79	50.81	197.529	.733	.618	.966
CH80	51.16	192.161	.837	.759	.964
CH81	51.16	191.974	.848	.781	.963
CH82	51.51	190.842	.819	.706	.964
CH83	51.27	191.038	.829	.804	.964
CH84	51.38	190.065	.869	.833	.963
CH85	51.30	189.572	.858	.796	.963



CH86	51.21	194.130	.825	.721	.964
CH87	51.64	190.744	.755	.646	.966
CH88	51.18	193.612	.847	.777	.963
CH89	51.12	192.366	.845	.769	.963

#### 4.4.9 Item Analysis: Ethical Leadership

The subscale Ethical Leadership consisted of 15 items. The Cronbach's alpha for this scale was an excellent .97 (Nunnally, 1978). The item-total statistics revealed that the corrected item-total correlations were above .30, which is an indication that all items reflect the same underlying factor. This is supported by the inter-item correlations which was greater than .30 (mean = .70). None of the items, if deleted would have an increased effect on the alpha value. On balance, evidence suggested that none of the items could be considered as poor and none of them should be deleted.

**Table 4.15**  
***Reliability and Item-total statistics: Ethical Leadership***

Reliability Statistics			
Cronbach's Alpha	Cronbach's Alpha Based on Standardised Items	N of Items	
.972	.972	15	

Scale Statistics			
Mean	Variance	Std. Deviation	N of Items
67.36	357.84	18.91	15

**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
ET90	63.24	317.963	.716	.652	.972
ET91	62.87	306.363	.891	.872	.969
ET92	62.83	309.276	.868	.862	.970
ET93	62.51	312.527	.853	.835	.970
ET94	62.67	310.583	.878	.868	.970
ET95	62.73	308.743	.873	.873	.970
ET96	62.83	311.761	.860	.810	.970
ET97	62.75	309.034	.900	.864	.969
ET98	62.91	312.059	.824	.749	.971
ET99	62.99	311.962	.821	.738	.971
ET100	62.84	331.222	.516	.366	.975
ET101	62.66	311.197	.846	.766	.970
ET102	62.91	311.278	.870	.814	.970
ET103	62.99	310.876	.863	.829	.970
ET104	63.37	310.169	.795	.753	.971

**4.4.10 Item Analysis: Strategic Team Leadership**

The subscale Strategic Team Leadership consisted of 17 items. The Cronbach's alpha for this scale was an excellent .96 (Nunnally, 1978). The item-total statistics revealed that the corrected item-total correlations were above .30, which is an indication that all items reflect the same underlying factor. This is supported by the inter-item correlations which was greater than .30 (mean = .62). None of the items, if deleted would have a substantial effect on the alpha value. On balance, evidence suggested that none of the items could be considered as poor and none of them should be deleted.

**Table 4.16**  
**Reliability and Item-total statistics: Strategic Team Leadership**

<b>Reliability Statistics</b>		
Cronbach's Alpha	Cronbach's Alpha Based on Standardised Items	N of Items
.964	.965	17

<b>Scale Statistics</b>			
Mean	Variance	Std. Deviation	N of Items
74.20	341.74	18.48	17

<b>Item-Total Statistics</b>					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
ST105	70.05	299.998	.846	.825	.961
ST106	70.06	300.816	.841	.826	.961
ST107	70.00	308.910	.681	.664	.963
ST108	69.95	308.754	.682	.714	.963
ST109	70.00	303.538	.773	.716	.962
ST110	69.36	313.566	.655	.631	.964
ST111	69.51	305.518	.811	.779	.962
ST112	69.60	304.613	.817	.831	.961
ST113	69.72	300.424	.819	.830	.961
ST114	69.63	301.226	.806	.733	.961
ST115	69.73	297.703	.789	.736	.962
ST116	69.88	301.166	.764	.701	.962
ST117	69.91	300.467	.823	.757	.961

ST118	69.73	299.310	.828	.749	.961
ST119	70.37	303.559	.648	.532	.964
ST120	69.61	309.582	.681	.580	.963
ST121	70.08	298.589	.829	.775	.961

After the analysis of the items, it was found that all dimensions of the LBS yielded excellent Cronbach alpha values which ranged from .90 to .97 and no items were deleted after the reliability analysis.

The LBS is a newly developed scale, which makes exploratory factor analysis very important in order to test the subscales of the LBS for unidimensionality. Unidimensionality refers to the aspect that all items load onto one factor per subscale as theorised in Chapter 2. The next section will focus on the EFA of the LBS subscales.

#### **4.5 PHASE 4b: FACTOR ANALYSIS (DIMENSIONALITY ANALYSIS) OF THE LBS**

The focus of the EFA process is to determine the construct validity of the scale. The construct validity is determined by identifying the number of factors underlying the items. With regard to factor analysis a few guidelines are provided in literature when determining the number of underlying factors for each subscale:

- a) For the researcher to render the subscale factor analysable the Kaiser-Meyer-Olkin Measure of Sampling adequacy should be at least .60 (Pallant, 2010).
- b) The eigenvalue of only one factor should be greater than 1.0, when the total variance is indicated through principal axis factoring (DeVellis, 2003).
- c) As cited by Hendrikz (2017) it is important that the eigenvalues of the factor matrix should be equal to 1.0, where the proportion of variance ( $\lambda_i^2$ ) that is explained by the single factor should be .50 or more (Theron, cited Hendrikz, 2017).
- d) It is also important that the factor loadings of the oblimin rotation that is found on the correlation matrix should be  $>.40$  to be substantial (Hinkin, cited Hendrikz, 1998).
- e) On the scree plot it is important that to the left of the 'elbow' only one factor should be plotted (DeVellis, 2013).

For the purpose of EFA, SPSS was utilised. Each one of the subscales will be reported on as indicated in the guidelines above.

#### 4.4.1 Factor Analysis: Employee Empowerment

With regard to the factor analysis it was assumed that all items of the subscale Employee Empowerment loads on a single factor of Organisational Leadership Behaviour, this was investigated, and the following results was obtained:

- a) The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was .943 ( $> .60$ ), which made the subscale factor analysable.
- b) Two factors were extracted which had eigenvalues greater than 1 when it explained the total variance through principal axis factoring which was an indication of the two underlying factors. The eigenvalues were 8.512 and 1.334, respectively.
- c) Rotated pattern matrix was also interpreted which also indicated two underlying factors which explained the proportion of variance by the two factors. Factor 1 was 58.44% and Factor 2 was 7.01%.
- d) In the scree plot the possibility of two factors were shown to the left of the 'elbow'.

The EFA results for Employee Empowerment are illustrated in Table 4.17.

**Table 4.17**  
***Factor Analysis: Employee Empowerment***

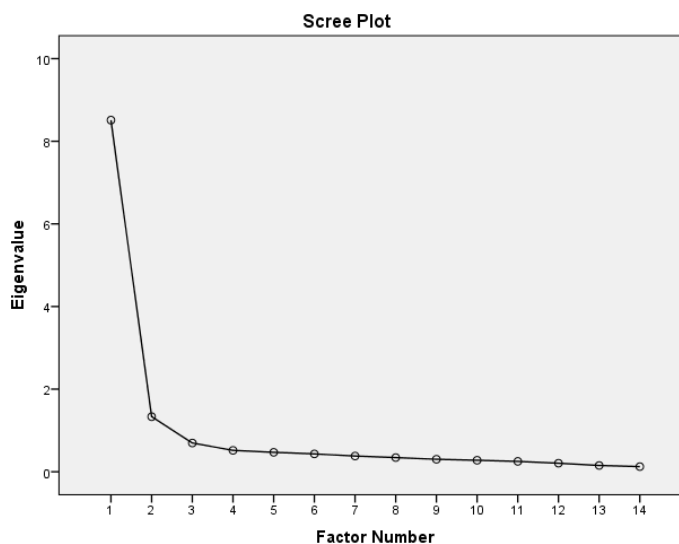
<b>KMO and Bartlett's Test</b>		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.943
Bartlett's Test of Sphericity		
Bartlett's Test of Sphericity	Approx. Chi-Square	2365.177
	df	91
	Sig.	.000

**Total Variance Explained**

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	8.512	60.797	60.797	8.182	58.444	58.444	7.627
2	1.334	9.525	70.323	.982	7.015	65.458	6.515
3	.696	4.974	75.297				
4	.518	3.697	78.994				
5	.471	3.365	82.359				
6	.432	3.086	85.445				
7	.380	2.717	88.162				
8	.343	2.448	90.610				
9	.302	2.159	92.769				
10	.278	1.983	94.752				
11	.251	1.791	96.543				
12	.207	1.481	98.024				
13	.153	1.092	99.116				
14	.124	.884	100.000				

**Pattern Matrix<sup>a</sup>**

	Factor	
	1	2
EE8	.988	-.148
EE9	.884	.008
EE20	.822	-.043
EE12	.813	.066
EE16	.736	.030
EE21	.704	.121
EE11	.690	.056
EE19	.667	.170
EE17	-.068	.847
EE13	-.084	.843
EE14	.086	.748
EE15	.315	.629
EE10	.098	.577
EE18	.377	.542



#### 4.4.1.1 Revised EFA for Employee Empowerment

A possible second factor was identified during the EFA process, which made the researcher critically evaluate the credibility of a second factor.

Through a further EFA one factor was extracted. Then the item with the lowest factor loading was deleted. In the process two items were deleted, namely EE17 and EE13:

EE17: "My manager allows me to complete tasks on my own (i.e. autonomously)."

EE13: "My manager encourages me to express my ideas and opinions."

When both items EE17 and EE13 were deleted, the subscale Employee Empowerment showed unidimensionality. All the factor loadings were significant ( $>.40$ ) (see Table 4.18).

**Table 4.18**  
***Employee Empowerment: Revised unrotated matrix***

<b>Factor Matrix</b>	
	Factor 1
EE9	.867
EE12	.857
EE8	.836
EE15	.827
EE18	.816
EE19	.803
EE21	.797
EE20	.766
EE16	.749
EE11	.729
EE14	.686
EE10	.572

#### 4.4.2 Factor Analysis: Support and Consideration

It was assumed that all the items of the subscale Support and Consideration loads on a single factor of Organisational Leadership Behaviour. The following results for this subscale was investigated:

- a) The Kaiser-Meyer-Olkin Measure of Sampling Adequacy for the subscale Support and Consideration was .942 which was greater than the minimum value of .60 (Pallant, 2010)
- b) Only one factor was extracted which had an eigenvalue greater than 1, which was valued at 6.523 when total variance was explained through principal axis factoring.
- c) The proportion variance that was explained by this single factor was greater than .50 (69.19%) for the subscale items.
- d) The factor loadings of the unrotated matrix were all significant at  $>.40$  ranging from .685 to .923.
- e) The scree plot only yielded one single factor (DeVellis, 2003).

The EFA results for Support and Consideration are illustrated in Table 4.19.

**Table 4.19**  
***Factor Analysis: Support and Consideration***

<b>KMO and Bartlett's Test</b>		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.942
Bartlett's Test of Sphericity		
Bartlett's Test of Sphericity	Approx. Chi-Square	1742.274
	df	36
	Sig.	.000

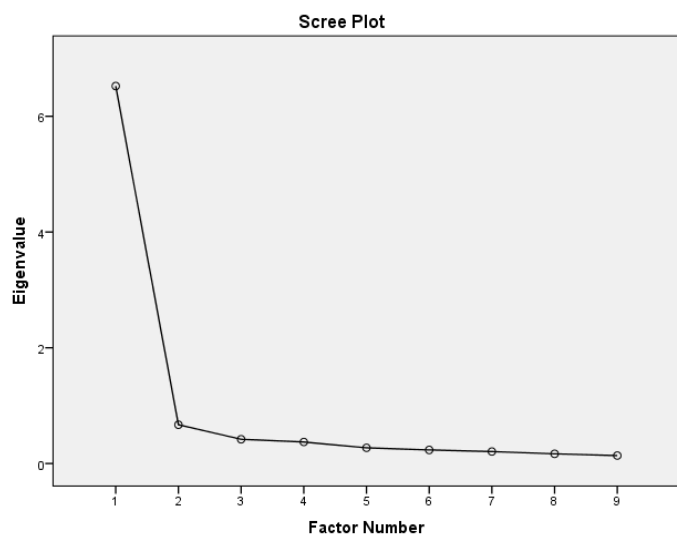


**Total Variance Explained**

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
	1	6.523	72.473	72.473	6.227	69.192
2	.670	7.445	79.918			
3	.419	4.653	84.571			
4	.372	4.132	88.703			
5	.271	3.013	91.716			
6	.235	2.608	94.324			
7	.206	2.291	96.615			
8	.168	1.865	98.480			
9	.137	1.520	100.000			

**Factor Matrix**

Factor	
1	
SC28	.923
SC25	.886
SC26	.847
SC24	.841
SC27	.841
SC30	.832
SC29	.807
SC23	.804
SC22	.685

**4.4.3 Factor Analysis: Employee Development**

With regards to the factor analysis it was assumed that all items of the subscale Employee Development loads on a single factor of Organisational Leadership Behaviour, this was investigated and the following results was obtained:

- The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was .943 which was greater than the required value (>.60) which allowed for the subscale factor to be analysed.
- By explaining the total variances through principal axis factoring, the eigenvalue for this factor was 7.615 which was an indication of one underlying factor.

- c) The proportion variance was greater than .50 (73.562%) for the subscale items. Which indicated that this factor matrix was underlying a single factor.
- d) The factor loadings of the unrotated matrix were all interpreted as significant at  $>.40$  which ranged from .770 to .915.
- e) The scree plot gave an indication that one factor could be identified due to the interpretation of the “elbow” (DeVellis, 2003).

The EFA results for Employee Development are illustrated in Table 4.20.

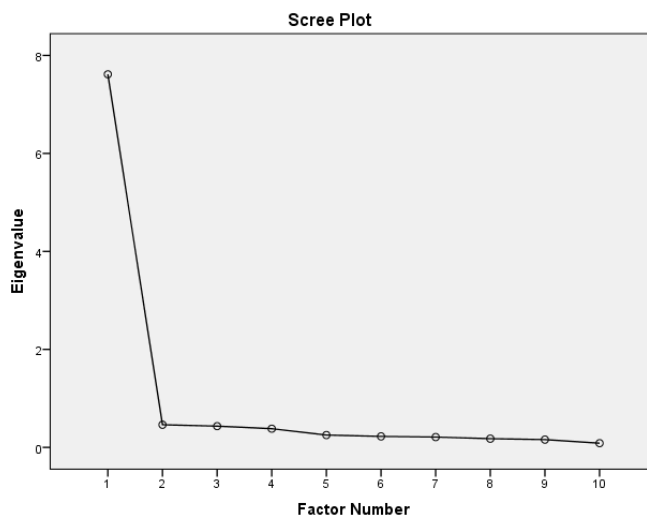
**Table 4.20**  
**Factor Analysis: Employee Development**

<b>KMO and Bartlett's Test</b>						
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.						.943
Bartlett's Test of Sphericity						
Bartlett's Test of Sphericity		Approx. Chi-Square		2254.484		
		df		45		
		Sig.		.000		

<b>Total Variance Explained</b>						
Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.615	76.153	76.153	7.356	73.562	73.562
2	.462	4.623	80.776			
3	.433	4.332	85.108			
4	.381	3.814	88.922			
5	.252	2.517	91.439			
6	.224	2.238	93.677			
7	.211	2.106	95.783			
8	.178	1.780	97.564			
9	.158	1.584	99.147			
10	.085	.853	100.000			

Factor Matrix	
	Factor
	1
ED38	.915
ED34	.881
ED33	.878
ED31	.873
ED32	.867
ED39	.863
ED40	.863
ED37	.855
ED35	.804
ED36	.770



#### 4.4.4 Factor Analysis: Consultation

The following results were obtained and interpreted for the unidimensionality of the subscale Consultation:

- The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was .929 which made the subscale factor analysable.
- Only one factor was extracted which had eigenvalues greater than 1 when it explained the total variance through principal axis factoring which was an indication of the factor. The eigenvalue for this factor was 6.876.
- The unrotated factor matrix was also interpreted which further indicated one underlying factor which explained the proportion of variance by the single factor. The proportion variance was greater than .50 (73.541%) for the subscale items.
- The factor loadings of the unrotated matrix were all interpreted as significant at  $>.40$  which ranged from .773 to .901.
- In the scree plot only one factor was identified (DeVellis, 2003).

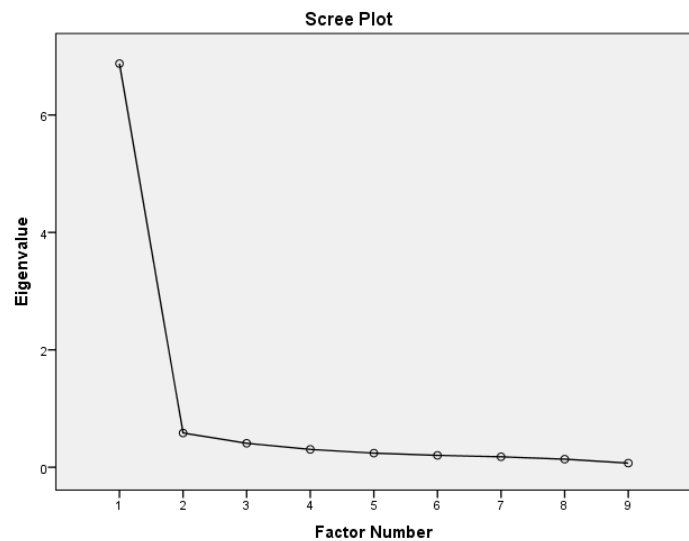
The EFA results for Consultation are illustrated in Table 4.21.

**Table 4.21**  
**Factor Analysis: Consultation**

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.929
Bartlett's Test of Sphericity		
Bartlett's Test of Sphericity	Approx. Chi-Square	2080.280
	df	36
	Sig.	.000

Total Variance Explained						
Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.876	76.403	76.403	6.619	73.541	73.541
2	.583	6.482	82.885			
3	.408	4.537	87.422			
4	.304	3.378	90.800			
5	.240	2.668	93.469			
6	.203	2.253	95.722			
7	.178	1.973	97.695			
8	.137	1.526	99.221			
9	.070	.779	100.000			

Factor Matrix	
Factor	
1	
C49	.901
C48	.893
C47	.893
C43	.891
C44	.877
C45	.863
C42	.813
C41	.803
C46	.773



#### 4.4.5 Factor Analysis: Task and Goal Setting

The researcher assumed that all the items for the subscale Task and Goal Setting would load on a single factor of Organisational Leadership Behaviour. The results will be discussed below:

- a) The subscale Task and Goal Setting could be interpreted as analysable because the Kaiser-Meyer-Olkin Measure of Sampling Adequacy was .922 which is greater than .60 (Pallant, 2010)
- b) The eigenvalue for this factor was 6.040. This gives the researcher the comfort that only one factor was extracted which had eigenvalues greater than 1 when it explained the total variance through principal axis factoring.
- c) The proportion variance was greater than .50 (56.274%) for the subscale items, which gives an indication that a single underlying factor was extracted.
- d) The factor loadings of the unrotated matrix were significant at  $>.40$  which ranged from .557 to .842.
- e) In the scree plot only one factor was identified (DeVellis, 2003).

The EFA results for Task and Goal Setting are illustrated in Table 4.22.

**Table 4.22**  
***Factor Analysis: Task and Goal Setting***

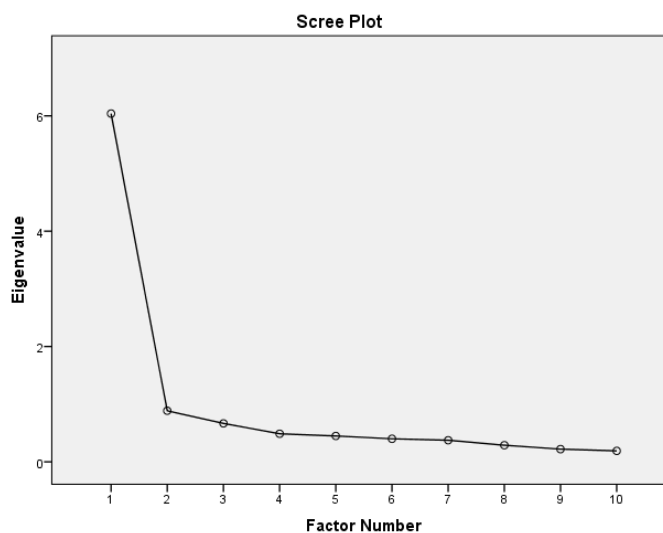
<b>KMO and Bartlett's Test</b>		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.922
<hr/>		
Bartlett's Test of Sphericity		
Bartlett's Test of Sphericity	Approx. Chi-Square	1351.955
	df	45
	Sig.	.000

**Total Variance Explained**

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.040	60.396	60.396	5.627	56.274	56.274
2	.886	8.857	69.253			
3	.667	6.666	75.919			
4	.487	4.870	80.789			
5	.449	4.487	85.276			
6	.399	3.994	89.270			
7	.375	3.749	93.020			
8	.288	2.882	95.902			
9	.220	2.201	98.103			
10	.190	1.897	100.000			

**Factor Matrix**

	Factor
	1
TG52	.842
TG55	.826
TG54	.819
TG56	.811
TG58	.768
TG57	.762
TG59	.731
TG50	.702
TG53	.632
TG51	.557

**4.4.6 Factor Analysis: Monitoring**

It is assumed that all items of the subscale Monitoring loads on a single factor of Organisational Leadership Behaviour, the results are discussed below:

- a) The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was .807 which made the subscale factor analysable.

- b) Two factors was extracted which had eigenvalues greater than 1 when it explained the total variance through principal axis factoring which was an indication of the two underlying factors. The eigenvalues were 4.767 and 1.054, respectively.
- c) The rotated pattern matrix also indicated two underlying factors which explained the proportion of variance by the two factors. Factor 1 explained 55.568% and Factor 2 10.809%.
- d) In the scree plot the possibility of two factors were shown to the left of the 'elbow'.

The EFA results for Monitoring are illustrated in Table 4.23.

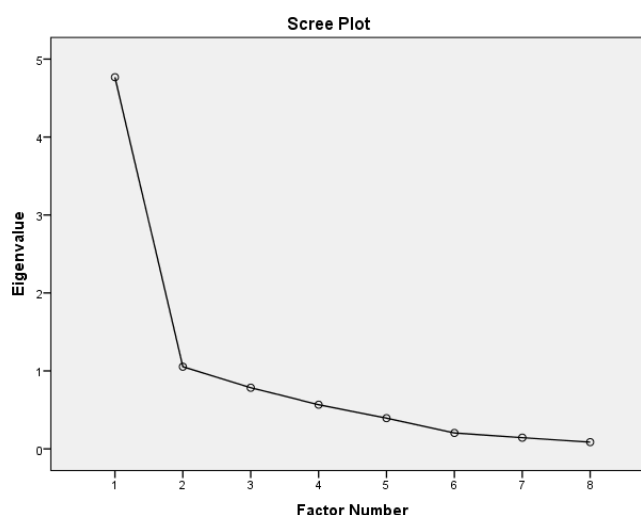
**Table 4.23**  
**Factor Analysis: Monitoring**

<b>KMO and Bartlett's Test</b>							
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.							.807
Bartlett's Test of Sphericity							
Bartlett's Test of Sphericity		Approx. Chi-Square				1261.175	
		df				28	
		Sig.				.000	

<b>Total Variance Explained</b>							
Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	4.767	59.591	59.591	4.445	55.568	55.568	4.098
2	1.054	13.171	72.762	.865	10.809	66.377	3.316
3	.785	9.809	82.571				
4	.566	7.080	89.652				
5	.394	4.923	94.574				
6	.204	2.551	97.125				
7	.144	1.795	98.920				
8	.086	1.080	100.000				

Pattern Matrix		
	Factor	
	1	2
MA61	.903	.113
MA60	.838	.020
MA64	.755	-.036
MA67	.728	.012
MA62	.631	-.187
MA63	.408	-.300
MA65	-.009	-1.004
MA66	.028	-.888



#### 4.4.6.1 Revised EFA for Monitoring

A possible second factor was identified during the EFA process, which made the researcher critically evaluate the credibility of a second factor.

Through a further EFA one factor was extracted. Consequently, the item with the lowest factor loading was deleted. In the process, item MA65 was deleted:

MA65: "My manager holds me accountable for the tasks assigned to me."

When item MA65 was deleted, the subscale Monitoring showed unidimensionality. All the factor loadings were significant ( $>.40$ ) ranging from .609 to .809 (see Table 4.24).

**Table 4.24**  
**Monitoring: Revised unrotated matrix**

Factor Matrix	
	Factor 1
MA60	.809
MA61	.797
MA64	.784
MA62	.769
MA67	.714
MA63	.628
MA66	.609



#### 4.4.7 Factor Analysis: Networking

With regard to factor analysis it was assumed that all items of the subscale Networking loads on a single factor of Organisational Leadership Behaviour. This was investigated, and the following results were obtained:

- a) The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was .926 (>.60) which made the subscale factor analysable.
- b) There were only one factor extracted for this subscale which had an eigenvalue greater than 1 (5.652) when it explained the total variance through principal axis factoring which was an indication of the factor.
- c) The unrotated pattern matrix also indicated a single factor. The proportion variance that was explained by this factor was greater than .50 (58.217%).
- d) The factor loadings of the unrotated matrix were all interpreted as significant ( >.40) which ranged from .688 to .818.
- e) In the scree plot only one factor was identified (DeVellis, 2003).

The EFA results for Task and Goal Setting are illustrated in Table 4.25.

**Table 4.25**  
**Factor Analysis: Networking**

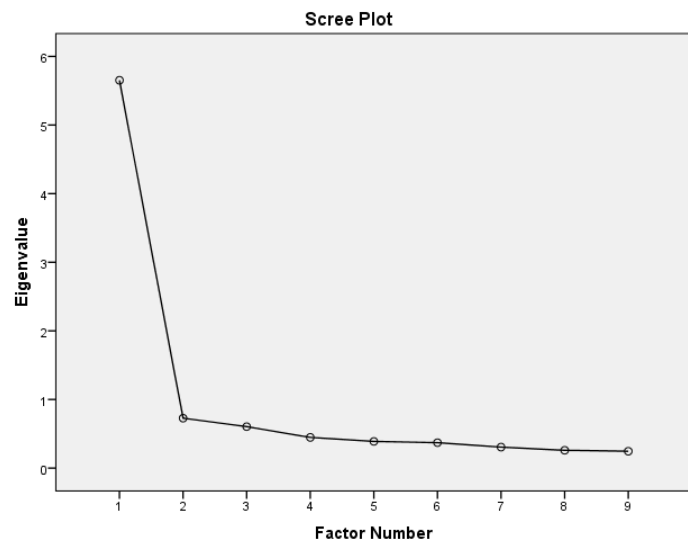
<b>KMO and Bartlett's Test</b>		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.926
Bartlett's Test of Sphericity		
Bartlett's Test of Sphericity	Approx. Chi-Square	1190.433
	df	36
	Sig.	.000

**Total Variance Explained**

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
	1	5.652	62.802	62.802	5.240	58.217
2	.728	8.084	70.886			
3	.604	6.710	77.596			
4	.447	4.969	82.565			
5	.389	4.318	86.883			
6	.370	4.115	90.998			
7	.306	3.396	94.394			
8	.259	2.881	97.275			
9	.245	2.725	100.000			

**Factor Matrix**

	Factor
	1
N70	.818
N71	.798
N73	.787
N75	.781
N74	.776
N76	.748
N72	.740
N69	.721
N68	.688

**4.4.8 Factor Analysis: Leading Change**

The subscale Leading Change was also developed to ensure that it loads on a single factor of Organisational Leadership Behaviour, the interpretations have been discussed below:

- a) The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was .950 (>.60) which made the subscale factor analysable.

- b) There were only one factor extracted for this subscale which had eigenvalue greater than 1 (9.342) when it explained the total variance through principal axis factoring which was an indication of the factor.
- c) The proportion variance that was explained by this factor was greater than .50 (69.562%), which also gave an indication of a single underlying factor.
- d) The factor loadings of the unrotated matrix were all interpreted as significant at  $>.40$  with the highest factor loading at .886 and the lowest loading .747.
- e) In the scree plot only one factor was identified (DeVellis, 2003).

The EFA results for Leading Change are illustrated in Table 4.26.

**Table 4.26**  
**Factor Analysis: Leading Change**

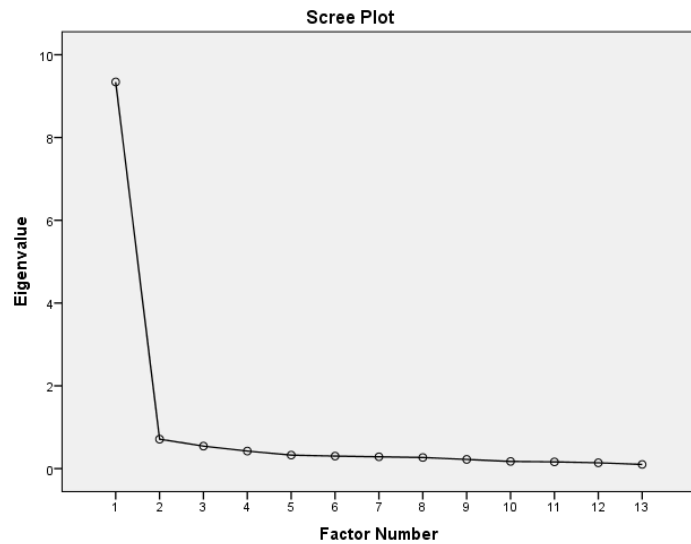
<b>KMO and Bartlett's Test</b>						
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.					.950	
Bartlett's Test of Sphericity						
Bartlett's Test of Sphericity			Approx. Chi-Square		2826.633	
			df		78	
			Sig.		.000	

<b>Total Variance Explained</b>						
Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.342	71.858	71.858	9.043	69.562	69.562
2	.711	5.470	77.327			
3	.543	4.179	81.506			
4	.424	3.260	84.766			
5	.326	2.509	87.275			
6	.302	2.327	89.602			
7	.286	2.196	91.799			
8	.268	2.060	93.858			
9	.222	1.709	95.567			
10	.173	1.334	96.901			
11	.162	1.248	98.149			

12	.140	1.077	99.226
13	.101	.774	100.000

Factor Matrix	
Factor	
1	
CH84	.886
CH85	.873
CH81	.864
CH88	.861
CH89	.859
CH80	.853
CH83	.845
CH86	.841
CH82	.834
CH78	.814
CH77	.784
CH87	.768
CH79	.747



#### 4.4.9 Factor Analysis: Ethical Leadership

The assumption that all the items of subscale Ethical Leadership loads on a single factor of Organisational Leadership Behaviour, was investigated and the results are discussed below:

- The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was .954 (>.60) which gave the researcher the indication that the subscale could be regarded as factor-analysable.
- Only one factor was extracted for this subscale which had eigenvalue greater than 1 (10.904).
- The proportion variance that was explained by this factor was greater than .50 (70.932%), which also gave an indication of a single underlying factor.
- The factor loadings of the unrotated matrix were all interpreted as significant at >.40, ranging from .915 to .518.
- In the scree plot only one factor was identified (DeVellis, 2003).

The EFA results for Ethical Leadership are illustrated in Table 4.27.

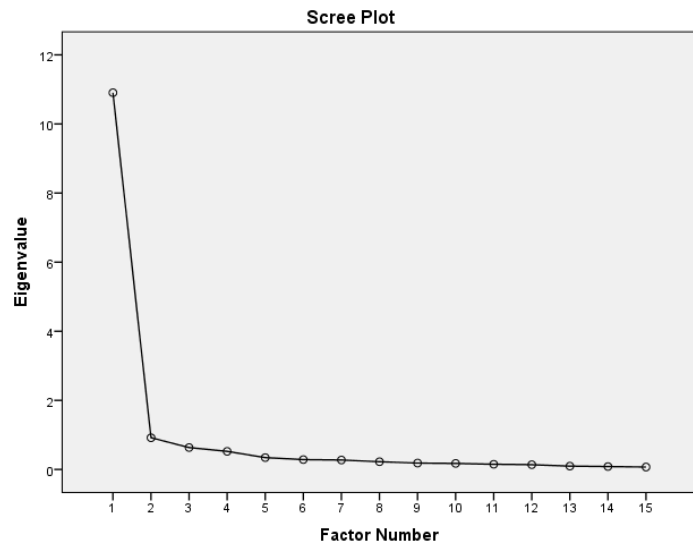
**Table 4.27**  
**Factor Analysis: Ethical Leadership**

<b>KMO and Bartlett's Test</b>						
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.						.954
Bartlett's Test of Sphericity						
Bartlett's Test of Sphericity		Approx. Chi-Square		3821.528		
		df		105		
		Sig.		.000		

<b>Total Variance Explained</b>						
Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	10.904	72.690	72.690	10.640	70.932	70.932
2	.918	6.117	78.807			
3	.634	4.227	83.034			
4	.523	3.487	86.521			
5	.343	2.288	88.810			
6	.285	1.901	90.711			
7	.273	1.821	92.532			
8	.224	1.493	94.025			
9	.185	1.231	95.256			
10	.174	1.158	96.414			
11	.150	1.000	97.414			
12	.138	.918	98.332			
13	.096	.642	98.973			
14	.085	.565	99.539			
15	.069	.461	100.000			

Factor Matrix	
Factor	
1	
ET97	.915
ET91	.905
ET94	.894
ET95	.889
ET102	.882
ET92	.881
ET96	.875
ET103	.871
ET93	.869
ET101	.860
ET98	.838
ET99	.831
ET104	.801
ET90	.721
ET100	.518



#### 4.4.10 Factor Analysis: Strategic Team Leadership

It is assumed that all items of the subscale Strategic Team Leadership loads on a single factor of Organisational Leadership Behaviour, the results are indicated below:

- The subscale was factor analysable because the Kaiser-Meyer-Olkin Measure of Sampling Adequacy was .946.
- There were two factors that was extracted from this subscale which had eigenvalues greater than 1 when it explained the total variance through principal axis factoring which was an indication of the two underlying factors. The eigenvalues were 10.921 and 1.126.
- The rotated pattern matrix was also interpreted which also indicated two underlying factors which explained the proportion of variance by the two factors. Factor 1 was 62.390% and Factor 2 was 4.964%.
- One item (ST108) was identified through the factor loadings of the oblimin rotation as complex.
- In the scree plot the possibility of two factors were shown to the left of the 'elbow'.

The EFA results for Strategic Team Leadership are illustrated in Table 4.28.

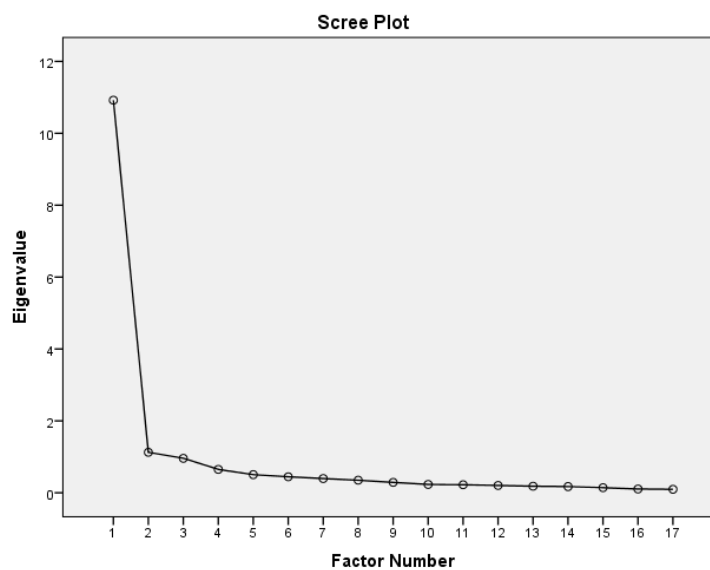
**Table 4.28**  
**Factor Analysis: Strategic Team Leadership**

<b>KMO and Bartlett's Test</b>							
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.							.946
<b>Bartlett's Test of Sphericity</b>							
Bartlett's Test of Sphericity		Approx. Chi-Square				3502.774	
		df				136	
		Sig.				.000	

<b>Total Variance Explained</b>							
Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	10.921	64.239	64.239	10.606	62.390	62.390	10.287
2	1.126	6.621	70.860	.844	4.964	67.354	7.311
3	.959	5.641	76.501				
4	.651	3.830	80.331				
5	.504	2.965	83.295				
6	.445	2.620	85.916				
7	.397	2.335	88.251				
8	.349	2.055	90.305				
9	.289	1.702	92.007				
10	.233	1.368	93.376				
11	.222	1.308	94.684				
12	.204	1.199	95.883				
13	.182	1.071	96.955				
14	.173	1.015	97.970				
15	.143	.839	98.808				
16	.105	.618	99.427				
17	.097	.573	100.000				

Pattern Matrix		
	Factor	
	1	2
ST105	.861	.055
ST106	.857	.100
ST118	.843	-.194
ST113	.841	-.115
ST121	.840	-.165
ST117	.839	-.189
ST112	.836	-.094
ST111	.828	-.022
ST114	.827	-.198
ST115	.807	-.239
ST109	.788	.214
ST116	.777	-.202
ST108	.713	.554
ST107	.702	.421
ST120	.687	.067
ST110	.673	.190
ST119	.655	.003



#### 4.4.10.1 Revised EFA for Strategic Team Leadership

During the EFA process, a second factor was identified which made the researcher critically evaluate the plausibility of a second factor that might be underlying this subscale. One complex (cross-loading) item (ST108) was identified in the factor matrix (the difference between the loadings was  $< 0.25$ ):

ST108: “My manager monitors the external environment to detect threats and opportunities for the team/organisation”

Item ST108 was deleted which provided the subscale Strategic Team Leadership with unidimensionality. All the revised factor loadings were significant ( $>.40$ ) which varies between .861 and .653 (see Table 4.29).



**Table 4.29**  
***Strategic Team Leadership: Revised unrotated matrix***

<b>Factor Matrix</b>	
	Factor 1
ST105	.861
ST106	.855
ST118	.848
ST113	.847
ST121	.846
ST117	.842
ST112	.841
ST114	.834
ST111	.832
ST115	.815
ST116	.782
ST109	.774
ST120	.683
ST107	.668
ST110	.664
ST119	.653

After finding good support for the reliability and unidimensionality of the LBS, the researcher will next report on the reliability and unidimensionality of the ancillary scales.

#### **4.6 PHASE 5a: RELIABILITY ANALYSIS OF THE ANCILLARY SCALES**

For the two ancillary scales to be added into the overall structural model, it is important to establish the inter reliability of each scale. The reliability analysis for both the ancillary scales was done by using SPSS. The analysis of the results is discussed below.

##### **4.6.1 Reliability Analysis: Leader Trust Scale**

The Leader Trust Scale (LTS) as discussed previously consists of 13 items. In order for the researcher to determine the reliability of the LTS, item analysis was performed to ensure that this scale was a valid measurement to include into the structural model. The scale revealed a Cronbach's alpha of .974 which revealed an excellent reliability. The mean of the inter-items correlations were considered high with a value of .742. The item-total correlations were greater than .30, which varied from .894 to .719, which indicated that all the items reflected

the same underlying factor (Pallant, 2010). After analysis of all the items there were no poor items underlying this scale.

**Table 4.30**  
**Reliability analysis: Leader Trust Scale (LTS)**

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardised Items	N of Items
.974	.974	13

Scale Statistics			
Mean	Variance	Std. Deviation	N of Items
50.79	154.159	12.416	13

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
T122	46.81	134.976	.795	.674	.973
T123	47.01	133.519	.719	.602	.974
T124	46.77	133.036	.877	.814	.971
T125	46.91	130.324	.867	.775	.971
T126	46.77	132.224	.836	.780	.972
T127	46.80	131.011	.875	.836	.971
T128	46.88	129.956	.870	.834	.971
T129	46.92	131.547	.862	.783	.971
T130	46.84	131.231	.865	.809	.971
T131	46.89	130.679	.871	.798	.971
T132	46.96	132.799	.827	.744	.972
T133	46.91	131.073	.883	.816	.971
T134	46.98	128.976	.894	.845	.971

#### 4.6.2 Reliability Analysis: Leader Effectiveness Questionnaire (LEQ)

The Leader Effectiveness Questionnaire (LEQ) consists of 6 items. Item analysis was performed by utilising SPSS to ensure that the LEQ was considered as a reliable measure that could be used in the conceptualisation of the overall structural model. The Cronbach's alpha for this scale was .924, which revealed excellent reliability and the item-total correlations were also considered acceptable with values all greater than .30. The item analysis revealed that all the items reflected the same underlying factor (Pallant, 2010).

**Table 4.31**

**Reliability analysis: Leader Effectiveness Questionnaire (LEQ)**

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardised Items	N of Items
.924	.924	6

Scale Statistics			
Mean	Variance	Std. Deviation	N of Items
27.26	49.363	7.026	6

#### Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
EF135	22.64	36.954	.705	.517	.920
EF136	22.51	40.746	.604	.413	.932
EF137	22.79	34.632	.824	.686	.905
EF138	22.74	32.594	.845	.752	.901
EF139	22.89	30.936	.858	.823	.901
EF140	22.71	32.942	.880	.823	.896

To conclude, both of the ancillary scales revealed excellent reliability scores, which could be included into the overall structural model.

#### 4.7 PHASE 5b: FACTOR ANALYSIS (DIMENSIONALITY ANALYSIS) OF THE ANCILLARY SCALES

For the purposes of the EFA for the ancillary scales, SPSS was utilised. Each one of the scales will be reported on according to the guidelines that was stipulated in Section 4.5.

##### 4.7.1 Factor Analysis: Leader Trust Scale (LTS)

With regard to the factor analysis it was assumed that all items of the LTS loads onto a single factor. The following results for this scale was found:

- a) The Kaiser-Meyer-Olkin Measure of Sampling Adequacy for the scale was .958 which was greater than the minimum value of .60 (Pallant, 2010)
- b) Only one factor was extracted which had an eigenvalue greater than 1, which was valued at 9.925 when total variance was explained through principal axis factoring.
- c) The proportion variance that was explained by this single factor was greater than .50 (74.44%) for the subscale items.
- d) The factor loadings of the unrotated matrix were all significant at  $>.40$ .
- e) The scree plot only yielded one single factor (DeVellis, 2003).

The EFA results for LTS are illustrated in Table 4.32.

**Table 4.32**  
***Factor Analysis: Leader Trust Scale (LTS)***

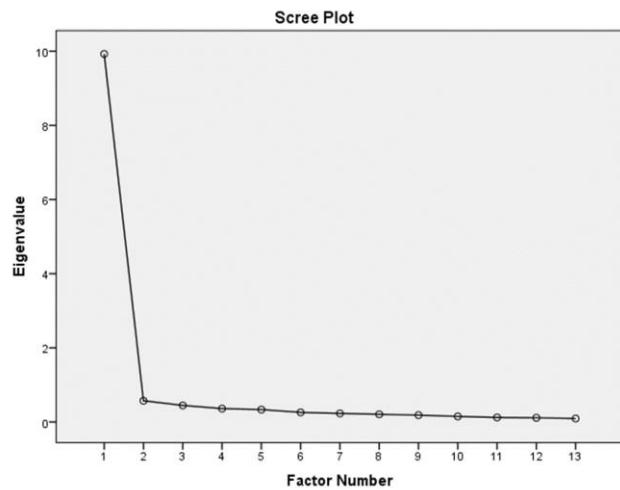
<b>KMO and Bartlett's Test</b>		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.958
Bartlett's Test of Sphericity		
Bartlett's Test of Sphericity	Approx. Chi-Square	3239.130
	df	78
	Sig.	.000

**Total Variance Explained**

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.925	76.349	76.349	9.677	74.440	74.440
2	.573	4.407	80.756			
3	.447	3.437	84.193			
4	.360	2.768	86.962			
5	.334	2.572	89.534			
6	.259	1.990	91.524			
7	.231	1.779	93.303			
8	.208	1.596	94.900			
9	.184	1.417	96.317			
10	.150	1.157	97.474			
11	.122	.939	98.412			
12	.113	.866	99.278			
13	.094	.722	100.000			

**Factor Matrix**

	Factor
	1
T134	.908
T133	.895
T124	.888
T127	.886
T128	.884
T131	.884
T125	.880
T130	.878
T129	.874
T126	.848
T132	.839
T122	.806
T123	.729



#### 4.7.2 Factor Analysis: Leader Effectiveness Questionnaire (LEQ)

The following results were obtained and interpreted for the unidimensionality of the LEQ scale:

- a) The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was .888, which made the subscale factor analysable.
- b) Only one factor was extracted, which had an eigenvalue greater than 1 when it explained the total variance through principal axis factoring which was an indication of the factor. The eigenvalue for this factor was 4.373.
- c) Rotated pattern matrix was also interpreted which also indicated one underlying factor which explained the proportion of variance by the single factor. The proportion variance was greater than .50 (68.122%) for the subscale items.
- d) The factor loadings of the unrotated matrix were all interpreted as significant at  $>.40$  which ranged from .627 to .918.
- e) In the scree plot only one factor was identified (DeVellis, 2003).

The EFA results for Consultation are illustrated in Table 4.33.

**Table 4.33**

***Factor Analysis: Leader Effectiveness Questionnaire (LEQ)***

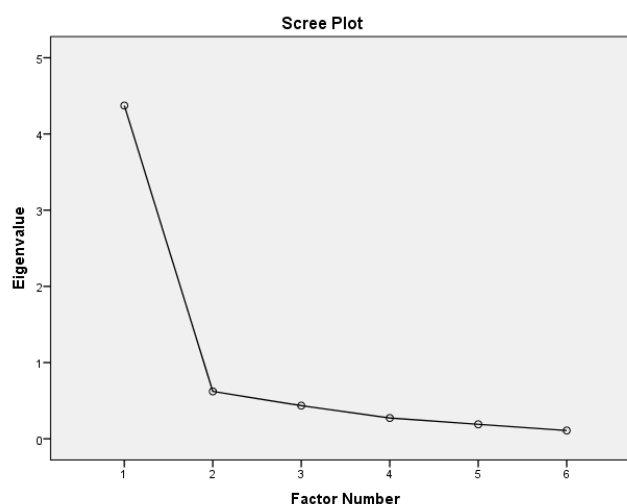
<b>KMO and Bartlett's Test</b>		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.888
Bartlett's Test of Sphericity		
Bartlett's Test of Sphericity	Approx. Chi-Square	1039.333
	df	15
	Sig.	.000

**Total Variance Explained**

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
	1	4.373	72.879	72.879	4.087	68.122
2	.622	10.363	83.241			
3	.435	7.245	90.486			
4	.273	4.547	95.033			
5	.190	3.161	98.195			
6	.108	1.805	100.000			

**Factor Matrix**

	Factor
	1
EF140	.918
EF139	.897
EF138	.880
EF137	.858
EF135	.731
EF136	.627



The next step of the research plan is to test the measurement model's fit which will be done for the LBS and both ancillary scales.

**4.7 EVALUATION OF THE MEASUREMENT MODEL FIT STATISTICS**

Testing the measurement model of a scale assists the researcher in the process to establish to what extent does the data that was collected supports or underlies the theorised model. To establish the fit of the measurement model, LISREL 8.8 was used. As discussed earlier it is important to assess the range of goodness-of-fit indices which contributes to the overall measurement model's fit.

It is important to take the following points into consideration when analysing the measurement models' fit indices:

- a) Overall fit is analysed by focussing on the goodness-of-fit indices as discussed in Chapter 3.
- b) To establish the magnitude and significance of the paths that exists within the measurement model the following steps was focussed on (1) analysing the completely standardised LAMBDA-X matrix, where it is important that the loadings should be higher than .5 in order for the loadings to be significant (Diamantopoulos & Siguaw, 2000) and (2) the unstandardized LAMBDA-X matrix is used to determine the standard error and t-values, in the cases where the factor loadings are less than .5. The t-value when analysed should be higher than  $|1.645|$  for the relationship to be regarded as significant.

#### 4.7.1 Phase 6a: Evaluation of the fit of the measurement model of the LBS

The Leadership Behavioural Scale and all ten of its dimensions were subjected to CFA in order for the researcher to evaluate the fit of the measurement model. The goodness-of-fit results will be discussed below as described in Table 3.4. Table 4.34 contains the fit indices for the measurement model of the LBS.

The extracted goodness-of-fit statistics are illustrated in Appendix C.

**Table 4.34**

***Goodness-of-fit indices: LBS Measurement model***

Overall fit measures	Fit statistics results	Discussion
Satorra-Bentler Scaled Chi-Square	778.590 ( $p < 0.01$ )	The $\chi^2$ statistics indicated a significant result ( $p < 0.01$ ). This is an indication that the exact fit hypothesis $H_{01}$ : RMSEA = 0, can therefore be rejected which is strengthened by the alternate hypothesis $H_{a1}$ : RMSEA > 0.
$\chi^2 / df$ (Chi-square / Degrees of Freedom)	778.590/482 = 1.6	If the $\chi^2$ is divided by the degrees of freedom, a value between 2 to 5 indicates a good fit. This model shows reasonable fit.



Root Mean Square Error of Approximation (RMSEA)	.0543	Reasonable fit is illustrated by values between .05 and .08. Thus, this model shows reasonable fit.
P-Value for Test of Close Fit (RMSEA < 0.05)	.157	For a model to indicate close fit a value of greater than .05 is a requirement. In this case the value was higher than .05 which indicated close fit. The close fit null hypothesis $H_{02}: RMSEA \leq .05$ could not be rejected in favour of the alternate hypotheses $H_{a2}: RMSEA > .05$ as the model showed close fit.
90% Confidence Interval for RMSEA	0.0472; 0.0612	The model deemed to have reasonable fit because the lower limit was not close to zero and the upper limit was smaller than .08.
Root Mean Square Residual (RMR)	0.0819	This value of .0819 would be considered as a high value. High values (>.08) indicate poor fit.
Standardised Root Mean Square Residual (SRMR)	0.0595	SRMR values smaller than .05 is an indication of good fit. However, this model shows reasonable fit.

#### Absolute fit index

Goodness-of-fit Index (GFI)	0.744	Values greater than .90 is an indication of good fit. This model showed poor fit.
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#### Relative fit indices

Normed Fit Index (NFI)	0.986	Values greater than .95 for the relative fit indices is an indication of good fit. In this case all the relative indices were greater than .95
Non-normed Fit Index (NNFI)	0.994	
Comparative Fit Index (CFI)	0.995	
Incremental Fit Index (IFI)	0.955	

Relative Fit Index (RFI) 0.984 except for AGFI. Thus, this could be interpreted as the model fitted the data well.

The results in Table 4.34 indicated that the model met the criteria for close fit. When the  $\chi^2/df$ , RMR, SRMR and GFI were analysed the model showed reasonable fit. Overall the measurement model of the LBS indicated satisfactory fit.

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

Validating the fit statistics of the measurement model is important to assess the relationships between the latent variables. To establish the regression slopes of the standardised indicator variables (X) on the standardised latent variables the Completely Standardised LAMBDA-X matrix will be utilised. The factor loadings should be greater than .50 and significant where the t-value in the unstandardized LAMBDA-X matrix should exceed 1.6449. Table 4.35 and 4.36 illustrates the LAMBDA-X matrix, where all the factor loadings were significantly above .50.

**Table 4.35**

***Completely standardised LAMBDA-X matrix for the LBS measurement model***

Completely Standardised Solutions						
LAMBDA-X						
	EMPOWER	SUPCON	DEVELOP	CONSULTI	TASKGOAL	MONITORI
EE1	0.914	- -	- -	- -	- -	- -
EE2	0.901	- -	- -	- -	- -	- -
EE3	0.832	- -	- -	- -	- -	- -
EE4	0.934	- -	- -	- -	- -	- -
SUPCON1	- -	0.955	- -	- -	- -	- -
SUPCON2	- -	0.936	- -	- -	- -	- -
SUPCON3	- -	0.938	- -	- -	- -	- -
DEV1	- -	- -	0.943	- -	- -	- -
DEV2	- -	- -	0.968	- -	- -	- -
DEV3	- -	- -	0.952	- -	- -	- -
CONS1	- -	- -	- -	0.953	- -	- -
CONS2	- -	- -	- -	0.983	- -	- -
CONS3	- -	- -	- -	0.949	- -	- -
TASKG1	- -	- -	- -	- -	0.890	- -
TASKG2	- -	- -	- -	- -	0.889	- -
TASKG3	- -	- -	- -	- -	0.917	- -
MONITOR1	- -	- -	- -	- -	- -	0.906
MONITOR2	- -	- -	- -	- -	- -	0.816
MONITOR3	- -	- -	- -	- -	- -	0.880

**Table 4.36*****Completely standardised LAMBDA-X matrix for the LBS measurement model (continued)*****Completely Standardised Solutions****LAMBDA-X**

LAMBDA-X

	NETWORKI -----	CHANGE -----	ETHICAL -----	TEAM -----
NETWORK1	0.914	- -	- -	- -
NETWORK2	0.913	- -	- -	- -
NETWORK3	0.911	- -	- -	- -
CHANGE1	- -	0.956	- -	- -
CHANGE2	- -	0.942	- -	- -
CHANGE3	- -	0.929	- -	- -
CHANGE4	- -	0.944	- -	- -
ETHICAL1	- -	- -	0.969	- -
ETHICAL2	- -	- -	0.978	- -
ETHICAL3	- -	- -	0.938	- -
ETHICAL4	- -	- -	0.953	- -
TEAM1	- -	- -	- -	0.957
TEAM2	- -	- -	- -	0.941
TEAM3	- -	- -	- -	0.920
TEAM4	- -	- -	- -	0.937

**Note:** EMPOWER: Employee Empowerment; SUPCON: Support and Consideration; DEVELOP: Employee Development; CONSULTI: Consulting; TASKGOAL: Task and Goal Setting; MONITORI: Monitoring; NETWORKI: Networking; CHANGE: Leading Change; ETHICAL: Ethical Leadership; TEAM: Strategic Team Leadership

The t-values of the items was inspected in the unstandardized LAMBDA X matrix which reflects the slope of the regression of the unstandardized item parcels on the unstandardized latent performance dimensions. The unstandardised factor loadings in Table 4.37 and Table 4.38 assisted the researcher to establish the statistical significance of the factor loadings of the proposed scale. After inspecting the factor loadings in the unstandardized matrix, it was found that all the item parcels were significantly ( $t > 1.6449$ ) loading on their designed subscales.

**Table 4.37*****Unstandardised LAMBDA-X matrix for the LBS measurement model***

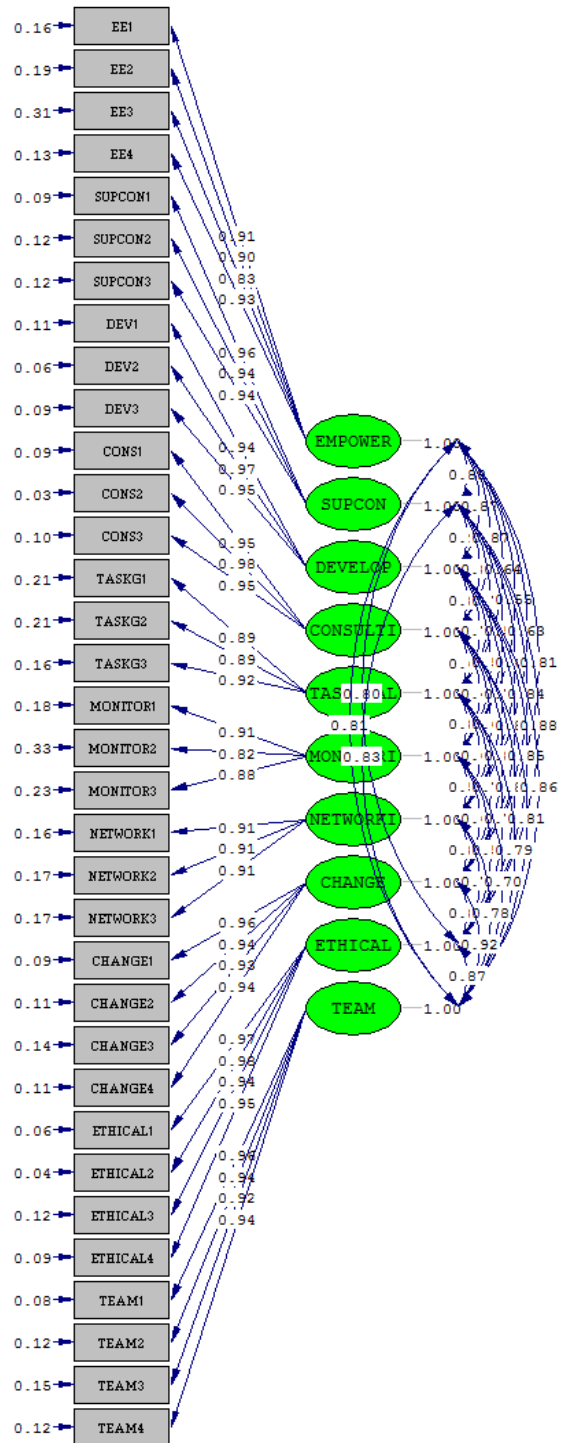
<b>Unstandardised Solutions</b>						
<b>LAMBDA-X</b>						
	EMPOWER	SUPCON	DEVELOP	CONSULTI	TASKGOAL	MONITORI
	-----	-----	-----	-----	-----	-----
EE1	1.060 (0.054) 19.562	- -	- -	- -	- -	- -
EE2	0.879 (0.062) 14.167	- -	- -	- -	- -	- -
EE3	0.785 (0.067) 11.722	- -	- -	- -	- -	- -
EE4	1.004 (0.057) 17.698	- -	- -	- -	- -	- -
SUPCON1	- -	1.164 (0.057) 20.280	- -	- -	- -	- -
SUPCON2	- -	1.119 (0.060) 18.583	- -	- -	- -	- -
SUPCON3	- -	1.225 (0.061) 20.085	- -	- -	- -	- -
DEV1	- -	- -	1.176 (0.054) 21.905	- -	- -	- -
DEV2	- -	- -	1.258 (0.054) 23.321	- -	- -	- -
DEV3	- -	- -	1.185 (0.055) 21.639	- -	- -	- -

**Table 4.38*****Unstandardised LAMBDA-X matrix for the LBS measurement model (continued)***

Unstandardised Solutions						
LAMBDA-X						
CONS1	- -	- -	- -	1.199 (0.057) 20.962	- -	- -
CONS2	- -	- -	- -	1.210 (0.053) 22.917	- -	- -
CONS3	- -	- -	- -	1.193 (0.057) 20.988	- -	- -
TASKG1	- -	- -	- -	- -	0.891 (0.069) 12.831	- -
TASKG2	- -	- -	- -	- -	0.892 (0.066) 13.613	- -
TASKG3	- -	- -	- -	- -	1.093 (0.057) 19.274	- -
MONITOR1	- -	- -	- -	- -	- -	0.865 (0.076) 11.364
MONITOR2	- -	- -	- -	- -	- -	0.953 (0.073) 13.068
MONITOR3	- -	- -	- -	- -	- -	0.860 (0.080) 10.703

**Note:** EMPOWER: Employee Empowerment; SUPCON: Support and Consideration; DEVELOP: Employee Development; CONSULTI: Consulting; TASKGOAL: Task and Goal Setting; MONITORI: Monitoring; NETWORKI: Networking; CHANGE: Leading Change; ETHICAL: Ethical Leadership; TEAM: Strategic Team Leadership

After analysis was done of the path diagram of the LBS measurement model, the path diagram was illustrated (see Figure 4.1).



Chi-Square=778.59, df=482, P-value=0.00000, RMSEA=0.054

**Figure 4.1:** The path diagram of the LBS measurement model

#### 4.7.2 Discriminant validity of the LBS measurement model

To determine the discriminant validity of the LBS measurement model, the 95% confidence interval was calculated for each sample estimate in utilising an Excel macro developed by

Scientific Software International (Mels, 2009). If any confidence interval includes the value 1 it would imply that the null hypothesis  $H_0: =1$  cannot be rejected. According to Myburg (2014) “confidence in the claim that the two latent performance dimensions are unique, qualitatively distinct dimensions of the performance construct would thereby be seriously eroded” (p. 168). Thus, if the calculated confidence interval includes the value 1.0, discriminant validity is not sufficient, and it would be advised to investigate the item cross-loadings more in-depth.

Table 4.39 illustrates the 95% confidence interval estimate of all the correlations.

**Table 4.39**  
**95% Confidence Interval for the LBS phi estimates**

95% Confidence Interval			
95 % CONFIDENCE INTERVAL ESTIMATE			
ESTIMATE	STANDARD ERROR ESTIMATE	LOWER LIMIT OF 95% CONFIDENCE INTERVAL	UPPER LIMIT OF 95% CONFIDENCE INTERVAL
0.882	0.020	0.836	0.916
0.868	0.022	0.818	0.905
0.869	0.018	0.829	0.900
0.639	0.051	0.528	0.728
0.546	0.06	0.418	0.653
0.63	0.048	0.527	0.715
0.813	0.029	0.748	0.863
0.799	0.026	0.742	0.845
0.811	0.03	0.743	0.862
0.804	0.034	0.727	0.861
0.711	0.042	0.619	0.784
0.780	0.034	0.704	0.838
0.898	0.018	0.856	0.928
0.881	0.020	0.835	0.915
0.728	0.038	0.645	0.794
0.529	0.063	0.395	0.641
0.660	0.046	0.560	0.741
0.838	0.025	0.782	0.881
0.876	0.018	0.836	0.907
0.831	0.026	0.773	0.875
0.862	0.024	0.807	0.902
0.916	0.029	0.837	0.958
0.872	0.022	0.821	0.909
0.766	0.034	0.691	0.825
0.549	0.066	0.407	0.665
0.708	0.047	0.603	0.789
0.850	0.032	0.774	0.902
0.848	0.023	0.796	0.887
0.857	0.036	0.768	0.913
0.871	0.021	0.823	0.907
0.690	0.046	0.589	0.770
0.481	0.068	0.337	0.603
0.695	0.043	0.601	0.770
0.840	0.025	0.784	0.883
0.836	0.023	0.785	0.876
0.807	0.031	0.737	0.860
0.803	0.040	0.710	0.869
0.629	0.050	0.521	0.717
0.789	0.035	0.710	0.848
0.738	0.041	0.647	0.808
0.787	0.038	0.700	0.851
0.526	0.063	0.392	0.638
0.681	0.049	0.573	0.766
0.557	0.065	0.417	0.671
0.699	0.049	0.590	0.783

It can thus be concluded with 95% confidence that none of the correlations are equal to 1, which means none of the intervals include unity. Thus, the discriminant validity of the LBS scale is thereby indicated.

#### **4.7.3 Phase 6c: Power assessment of the LBS measurement model**

Calculating the statistical power of a model relates to the probability of not rejecting an incorrect model and tests the probability of not making a Type II error<sup>2</sup>. The close fit null hypothesis  $H_{02}$  was not rejected, which was an indication that the observed covariance matrix reflected the reproduced population covariance matrix which was derived from the model parameters closely. However, the question still remains if this was the correct decision because of the fact that the size of a sample can decrease the statistical power of the analysis.

For the power assessment of the LBS measurement model it is important that the following elements are specified:

- a) Level of significance (.05)
- b) Sample Size (210)
- c) Degrees of freedom (482)
- d) RMSEA was set to .05 for  $H_0$
- e) RMSEA was set to .08 under  $H_a$

A power value of 1 (see Appendix D) was returned after using the Preacher and Coffman (2006) software. This is an indication that the analysis was sufficiently powerful ( $\geq .80$ ) (Diamantopolous & Sigauw, 2000, p.96) which gave the researcher confirmation that no error was made in not rejecting an incorrect model if the model did not fit reasonably. The Preacher and Coffman (2006) software yielded a power value of unity. In the case of poor fit, the close fit hypothesis would therefore have been rejected. In the case of this study the hypothesis was not rejected which strengthens the decision made by the researcher.

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<sup>2</sup> This type of error is known as Type II error and the probability associated with it is denoted as  $\beta$ . The probability of avoiding a Type II error is, therefore,  $1-\beta$  and it is the probability that indicates the power of our test; thus, the power of the test tell us how likely it is that a false null hypothesis (i.e. incorrect model) will be rejected



#### 4.7.4 Phase 7: The evaluation of the fit of the LTS measurement model

The LTS was submitted to CFA to evaluate measurement model fit. LISREL 8.8 extract for the fit statistics are included in Appendix E. The initial fit indices indicated a poor measurement model fit with the data (RMSEA = 0.0832).

An investigation into the modification indices of Theta-Delta indicated some problematic items, which were loading on more than one sub-dimension simultaneously. This indicated low discriminant validity on the items and thus their removal was required. After deleting Q127 with a large modification index value ( $> 6.6349$ ), improved fit for the measurement model was found, whereby RMSEA marginally missed the 0.08 cut-off for good fit but achieved satisfactory fit (RMSEA = 0.073) (see Table 4.40).

**Table 4.40**

***Goodness-of-fit indices: Revised LTS measurement model***

Overall fit measures	Fit statistics results	Discussion
Satorra-Bentler Scaled Chi-Square	113.483 ( $p < 0.01$ )	The $\chi^2$ statistics indicated a significant result ( $p < 0.01$ ). This is an indication that the exact fit hypothesis $H_{03}$ : RMSEA = 0, can therefore be rejected which is strengthened by the alternate hypothesis $H_{a3}$ : RMSEA $> 0$ .
$\chi^2$ /df (Chi-square / Degrees of Freedom)	113.483/54 = 2.11	If the $\chi^2$ is divided by the degrees of freedom, a value between 2 to 5 indicates a good fit. This model shows good fit.
Root Mean Square Error of Approximation (RMSEA)	0.0726	Reasonable fit is illustrated by values between .05 and .08. Thus, this model shows reasonable fit.
P-Value for Test of Close Fit (RMSEA $< 0.05$ )	0.0255	For a model to indicate close fit a value of greater than .05 is a requirement. In this case the value was not higher than .05 which does

90% Confidence Interval for RMSEA 0.156;  
0.450

Root Mean Square Residual (RMR) 0.0335

Standardised Root Mean Square Residual (SRMR) 0.0285

not indicate close fit. The close fit null hypothesis  $H_{04}: RMSEA \leq .05$  was therefore rejected in favour of the alternate hypotheses  $H_{a4}: RMSEA > .05$  as the model did not showed close fit.

The model shows close fit when the lower limit is close to 0 and the upper limit is less than .08. These results did not meet the criteria for close fit at a 90% confidence interval for RMSEA.

This value of .034 would be considered as a low value. Low values (<.08) indicates good fit.

SRMR values smaller than .05 is an indication of good fit. Thus, this model shows good fit.

#### Absolute fit index

Goodness-of-fit Index (GFI) 0.873

Values greater than .90 is an indication of good fit. This model showed reasonable fit.

#### Relative fit indices

Normed Fit Index (NFI) 0.984

Non-normed Fit Index (NNFI) 0.990

Comparative Fit Index (CFI) 0.992

Incremental Fit Index (IFI) 0.992

Relative Fit Index (RFI) 0.981

Values greater than .95 for the relative fit indices is an indication of good fit. In this case all the relative indices were greater than .95. Thus, this could be interpreted as the model fitted the data well.

The results of the fit indices showed that the model did not meet the criteria for exact and close fit. However, the  $\chi^2 /df$ , RMR, SRMR and relative fit indices indicated that the measurement model of the LTS showed good fit. This is a possible indication that the measurement model of the LTS showed acceptable fit.

However, after the investigation of the significant factor loadings of the items it was concluded that all the items loaded significantly on their designated exogenous latent variables ( $\xi$ ) when focusing on the unstandardized LAMBDA-X matrix ( $t > 1.6449$ ) (see Table 41). The factor loadings are also above the required value of .50 as shown in Table 42.

**Table 4.41**

***Unstandardised LAMBDA-X matrix for the revised LTS measurement model***

Unstandardised Solutions	
LAMBDA-X	
LAMBDA-X	
	TRUST
	-----
Q122	0.758 (0.060) 12.667
Q123	0.846 (0.063) 13.385
Q124	0.857 (0.051) 16.890
Q125	0.973 (0.055) 17.670
Q126	0.902 (0.055) 16.453
Q128	1.011 (0.055) 18.357
Q129	0.941 (0.055) 16.991
Q130	0.972 (0.051) 19.143
Q131	0.987 (0.050) 19.780
Q132	0.905 (0.053) 17.033
Q133	0.959 (0.050) 18.998
Q134	1.067 (0.052) 20.648

---

**NOTE:** TRUST: Trust in the Leader

**Table 4.42*****Completely standardised LAMBDA-X matrix for the revised LTS measurement model***

Completely Standardised Solutions	
LAMBDA-X	
LAMBDA - X	TRUST
	-----
Q122	0.770
Q123	0.729
Q124	0.861
Q125	0.855
Q126	0.835
Q128	0.877
Q129	0.867
Q130	0.887
Q131	0.884
Q132	0.853
Q133	0.885
Q134	0.911

**NOTE:** TRUST: Trust in the Leader

#### 4.7.5 Phase 7: The evaluation of the fit of the LEQ measurement model

The LEQ was submitted to CFA to evaluate measurement model fit. LISREL 8.8 extract for the fit statistics are included in Appendix F. The initial fit indices indicated a poor measurement model fit with the data (RMSEA = 0.127).

An investigation into the modification indices of Theta-Delta indicated some problematic items, which were loading on more than one sub-dimension simultaneously. This indicated low discriminant validity on the items and thus their removal was required. After deleting Q135 and Q136 with a large modification index value (> 6.6349), improved fit for the measurement model was found, whereby RMSEA marginally missed the 0.08 cut-off for good fit but achieved satisfactory fit (RMSEA = 0.0783) (see Table 4.43).

**Table 4.43*****Goodness-of-fit indices: Revised LEQ measurement model***

Overall fit measures	Fit statistics results	Discussion
Satorra-Bentler Scaled Chi-Square	4.565 (P < 0.01)	The $\chi^2$ statistics indicated a significant result (p < 0.01). This is an indication that the exact fit hypothesis $H_{05}$ : RMSEA = 0, can

$\chi^2$ /df (Chi-square / Degrees of Freedom)	4.565/2 = 2.28	therefore be rejected which is strengthened by the alternate hypothesis $H_{a5}$ : RMSEA > 0. If the $\chi^2$ is divided by the degrees of freedom, a value between 2 to 5 indicates a good fit. This model shows good fit.
Root Mean Square Error of Approximation (RMSEA)	0.0783	Reasonable fit is illustrated by values between .05 and .08. Thus, this model showed reasonable fit.
P-Value for Test of Close Fit (RMSEA < 0.05)	0.226	For a model to indicate close fit a value of greater than .05 is a requirement. In this case the value was higher than .05 which does indicate close fit. The close fit null hypothesis $H_{06}$ : RMSEA $\leq$ .05 was therefore not rejected in favour of the alternate hypotheses $H_{a6}$ : RMSEA > .05 as the model did showed close fit.
90% Confidence Interval for RMSEA	0.0; 0.176	The model shows close fit when the lower limit is close to 0 and the upper limit is less than 0.08. These results met the criteria for close fit at 90% confidence interval for RMSEA.
Root Mean Square Residual (RMR)	0.0278	This value of 0.0278 would be considered as a low value. Low values (<.08) indicates good fit.
Standardised Root Mean Square Residual (SRMR)	0.0133	SRMR values smaller than .05 is an

indication of good fit. However, this model shows good fit.

#### Absolute fit index

Goodness-of-fit Index (GFI)	0.988	Values greater than .90 is an indication of good fit. This model showed good fit.
-----------------------------	-------	---

#### Relative fit indices

Normed Fit Index (NFI)	0.994	Values greater than .95 for the relative fit indices is an indication of good fit. In this case, all the relative indices were greater than .95. Thus, this could be interpreted as the model fitted the data well.
Non-normed Fit Index (NNFI)	0.989	
Comparative Fit Index (CFI)	0.996	
Incremental Fit Index (IFI)	0.997	
Relative Fit Index (RFI)	0.981	

The results of the fit indices showed that the model did not meet the criteria for exact fit but indicated close fit. However, the  $\chi^2/df$ , RMR, SRMR and relative fit indices indicated that the measurement model of the LEQ showed good fit. This is a possible indication that the measurement model of the LEQ showed acceptable fit.

After investigating the significant factor loadings of the items from the unstandardized LAMBDA-X matrix it was found that all the loadings were more than  $t = 1.6449$  which made them significant (see Table 4.44). The factor loadings from the completely standardized solution were also significant as the factors were all above the required value of .50 as shown in Table 4.45.

**Table 4.44*****Unstandardised LAMBDA-X matrix for the revised LEQ measurement model***

Unstandardised Solutions	
LAMBDA-X	
LAMBDA-X	
	EFFECTN
	-----
Q137	1.041 (0.075) 13.805
Q138	1.288 (0.074) 17.404
Q139	1.518 (0.071) 21.425
Q140	1.334 (0.063) 21.080

**NOTE:** EFFECTN: Leader Effectiveness

**Table 4.45*****Completely standardised LAMBDA-X matrix for the revised LEQ measurement model***

Completely Standardised Solutions	
LAMBDA-X	
LAMBDA-X	
	EFFECTN
	-----
Q137	0.780
Q138	0.857
Q139	0.922
Q140	0.936

**NOTE:** EFFECTN: Leader Effectiveness

#### **4.7.6 Phase 10a: Evaluating the fit of the measurement model underlying the structural model**

The CFA analyses was done for all the measurement models separately, which were to be fitted within the structural model indicated acceptable fit. Next, in this process will be to test the measurement model's fit that underlies the proposed structural. LISREL 8.8 was used, and the process of robust maximum likelihood estimation was used. As discussed earlier in Chapter 3, the process of random item parcelling was used to specify the overall measurement model (see Appendix B).

The underlying measurement model's fit statistics will be explained in detail in Table 4.46, and the LISREL 8.8 extraction are available in Appendix G.

**Table 4.46**

***Goodness-of-fit indices: Overall measurement model underlying the proposed structural model***

Overall fit measures	Fit statistics results	Discussion
Satorra-Bentler Scaled Chi-Square	137.364 ( $p < 0.01$ )	The $\chi^2$ statistics indicated a significant result ( $p < 0.01$ ). This is an indication that the exact fit hypothesis $H_{07}: RMSEA = 0$ , can therefore be rejected which is strengthened by the alternate hypothesis $H_{a7}: RMSEA > 0$ .
$\chi^2 / df$ (Chi-square / Degrees of Freedom)	$137.364/87 = 1.58$	If the $\chi^2$ is divided by the degrees of freedom, a value between 2 to 5 indicates a good fit. This model shows poor fit.
Root Mean Square Error of Approximation (RMSEA)	.0526	Reasonable fit is illustrated by values between .05 and .08. Thus, this model shows reasonable fit.
P-Value for Test of Close Fit (RMSEA < 0.05)	.382	For a model to indicate close fit a value of greater than .05 is a requirement. In this case the value was higher than .05 which indicate close fit. The close fit null hypothesis $H_{08}: RMSEA \leq .05$ was therefore not rejected in favour of the alternate hypotheses $H_{a8}: RMSEA > .05$ as the model showed close fit.
90% Confidence Interval for RMSEA	0.0351; 0.0689	These values fell within the cut-off points of .08 and zero, which could



Root Mean Square Residual (RMR)	0.0124	be regarded as close fit at a 90% confidence interval.
Standardised Root Mean Square Residual (SRMR)	0.0117	This value of .0124 would be considered as a low value. Low values (<.08) indicates good fit. SRMR values smaller than .05 is an indication of good fit. Therefore, this model shows good fit.

#### Absolute fit index

Goodness-of-fit Index (GFI)	0.895	Values greater than .90 is an indication of good fit. This model showed good fit.
-----------------------------	-------	---

#### Relative fit indices

Normed Fit Index (NFI)	0.991	Values greater than .95 for the relative fit indices is an indication of good fit. In this case all the relative indices were greater than .95. Thus, this could be interpreted as the model fitted the data well.
Non-normed Fit Index (NNFI)	0.996	
Comparative Fit Index (CFI)	0.997	
Incremental Fit Index (IFI)	0.997	
Relative Fit Index (RFI)	0.990	

---

This model can be regarded as a good fitting model when taking the fit indices into consideration, except for RMSEA which marginally missed the criterion for good fit. This was corroborated by the factor loadings of all the item parcels on their respective latent variables. When analysing the factor loadings in Table 4.47 all the scores was above the desired value of .50.

**Table 4.47**

**Completely standardised LAMBDA-X matrix for the overall measurement model underlying the structural model**

Completely Standardised Solutions			
LAMBDA-X			
	ORGLEAD	TRUST	EFFECT
	-----	-----	-----
ORGL1	0.957	- -	- -
ORGL2	0.964	- -	- -
ORGL3	0.951	- -	- -
ORGL4	0.965	- -	- -
ORGL5	0.971	- -	- -
ORGL6	0.970	- -	- -
ORGL7	0.962	- -	- -
ORGL8	0.974	- -	- -
ORGL9	0.963	- -	- -
ORGL10	0.967	- -	- -
TRUST1	- -	0.957	- -
TRUST2	- -	0.961	- -
TRUST3	- -	0.972	- -
EFF1	- -	- -	0.943
EFF2	- -	- -	0.921

**NOTE:** ORGLEAD: Organisational Leadership Behaviour; TRUST: Trust in the Leader; EFFECT: Leader Effectiveness

#### 4.7.6 Phase 10b: Evaluating the fit of the structural model

In the previous section it was indicated that the measurement model underlying the structural model showed good fit. Thus, the next step was to test the fit of the structural model. Table 4.48 illustrates the fit statistics of the structural model and Appendix H contains the extraction of the LISREL 8.8 output.

**Table 4.48**

**Goodness-of-fit indices: Structural Model**

Overall fit measures	Fit statistics results	Discussion
Satorra-Bentler Scaled Chi-Square	137.364 (p < 0.01)	The $\chi^2$ statistics indicated a significant result (p < 0.01). This is an indication that the exact fit hypothesis $H_{09}$ : RMSEA = 0, can therefore be rejected which is strengthened by the alternate hypothesis $H_{a9}$ : RMSEA > 0.

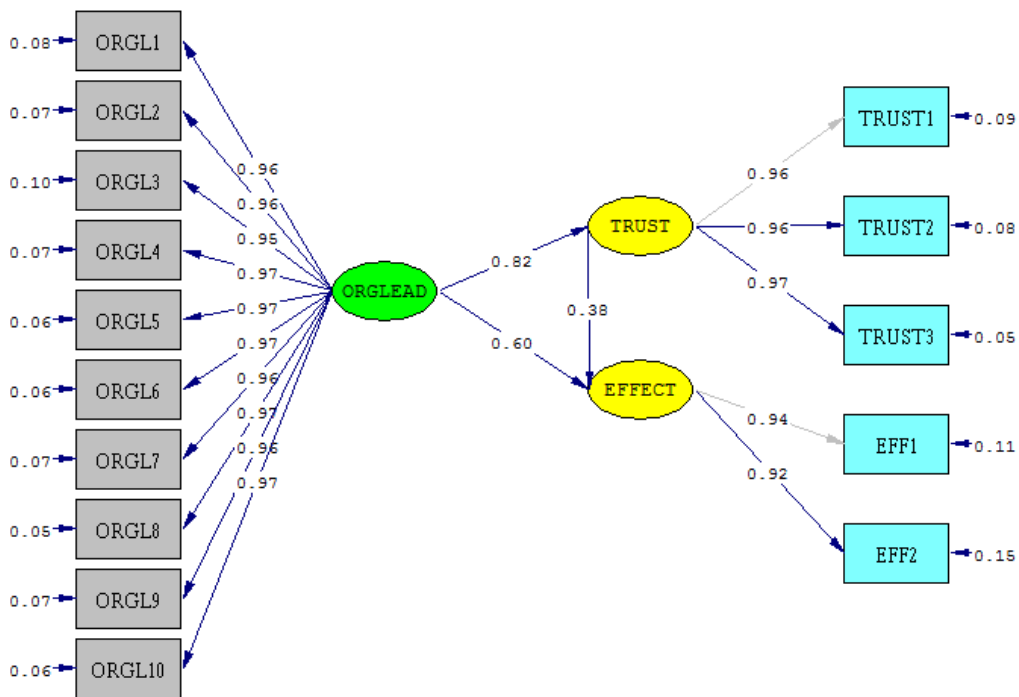
$\chi^2$ /df (Chi-square / Degrees of Freedom)	137.364/87 = 1.6	If the $\chi^2$ is divided by the degrees of freedom, a value between 2 to 5 indicates a good fit. This did not show good fit.
Root Mean Square Error of Approximation (RMSEA)	.0526	Reasonable fit is illustrated by values between .05 and .08. Thus, this model shows reasonable fit.
P-Value for Test of Close Fit (RMSEA < 0.05)	.382	For a model to indicate close fit a value of greater than .05 is a requirement. In this case the value was higher than .05 which indicate close fit. The close fit null hypothesis $H_{010}$ : RMSEA $\leq$ .05 was therefore not rejected in favour of the alternate hypotheses $H_{a10}$ : RMSEA > .05 as the model showed close fit.
90% Confidence Interval for RMSEA	0.0351; 0.0689	These values fell within the cut-off points off .08 and zero, which could be regarded as close fit at a 90% confidence interval.
Root Mean Square Residual (RMR)	0.0124	This value of .0124 would be considered as a low value. Low values (<.08) indicates good fit.
Standardised Root Mean Square Residual (SRMR)	0.0117	SRMR values smaller than .05 is an indication of good fit. Thus, this model shows good fit.
<b>Absolute fit index</b>		
Goodness-of-fit Index (GFI)	0.895	Values greater than .90 is an indication of good fit. This model showed good fit.

**Relative fit indices**

Normed Fit Index (NFI)	0.991	Values greater than .95 for the relative fit indices is an indication of good fit. In this case all the relative indices were greater than .95. Thus, this could be interpreted as the model fitted the data well.
Non-normed Fit Index (NNFI)	0.996	
Comparative Fit Index (CFI)	0.997	
Incremental Fit Index (IFI)	0.997	
Relative Fit Index (RFI)	0.990	

The results of the structural model specifically the RMSEA, P-value of close fit, SRMR and relative fit indices provided evidence that the structural model shows reasonable good fit.

Figure 4.2 illustrates the structural model path diagram resulting from this fit.



**Figure 4.2:** Structural Model Path Diagram

#### 4.7.7 Phase 10c: Evaluating the validity of the hypothesised paths of the structural model

The next step in the validation process is to investigate the validity of the model's fit by assessing the relationships between the variables as proposed in the structural model. Determining the validity of these paths will support the literature study in Chapter 2.

It is important when a researcher determines the pathways' validity to take two important aspects into consideration:

- a) According to Diamantopolous and Siguaw (2000) it is important to focus on the signs between the pathways which can strengthen the hypothesized pathway. If the relationship according to the validation process indicates that the pathway is positive, the hypothesized pathway is supported.
- b) It is important to focus on the magnitudes of the estimated parameters, as it contributes towards the strength of the pathway that the researcher hypothesized (Diamantopolous & Siguaw, 2000). A significant parameter will be indicated by the t-value greater than  $|1.6449|$ .

##### 4.7.7.1 The effect of Organisational Leadership Behaviour on Trust in the Leader

The pathway that represents the relationship ( $\gamma_{11}$ ) between the exogenous variable, Organisational leadership behaviour ( $\xi_1$ ) and the first endogenous variable, Trust in Leader ( $\eta_1$ ) are shown in Table 4.49. After analysis of the GAMMA matrix it was evident that there is a positive relationship between these two variables which indicates that the hypothesised pathway was proven to be significant. The t-value of 15.467, was significant ( $p < .05$ ) as this value is greater than the t-value of  $|1.6449|$ .

This resulted in the rejection of hypothesis  $H_{011}$ :  $\gamma_{11} = 0$  in favour of the alternative hypothesis  $H_{a11}$ :  $\gamma_{11} > 0$ . This relationship between organisational leadership behaviour and trust in the leader also indicated a strong path coefficient of .83 ( $p < .05$ ). Thus, after analysing the data it can be confirmed that the pathway between organisational leadership behaviour and trust in the leader was supported as positively as theorised in Chapter 2.

**Table 4.49**  
**Unstandardised GAMMA Matrix of the Structural Model**

GAMMA	
	GAMMA
	ORGLEAD
	-----
TRUST	<b>0.825</b>
	(0.053)
	<b>15.467*</b>

**NOTE:** Unstandardised path coefficients in bold; standard error estimates in brackets; t-values  $\geq |1.6449|$  indicate significant parameter estimates \*,  $p < .05$

ORGLEAD: Organisational Leadership Behaviour; TRUST: Trust in the leader

#### 4.7.7.2 The effect of Organisational Leadership Behaviour on Leader Effectiveness

The GAMMA matrix in Table 4.50, provides information about the path relationship ( $\gamma_{21}$ ) which represents the hypothesised pathway between organisational leadership behaviour ( $\xi_1$ ) and leader effectiveness ( $\eta_2$ ). The GAMMA matrix indicates that there exists a positive relationship between the variables. This is an indication that the hypothesised pathway, namely that organisational leadership behaviour positively influences leader effectiveness is significant.

The t-value of 6.738 was significant ( $p < .05$ ) as it was greater than  $|1.6449|$ . The hypothesis  $H_{012}$ :  $\gamma_{21} = 0$  could therefore be rejected in favour of the alternative hypothesis  $H_{a12}$ :  $\gamma_{21} > 0$ . Additionally, the relationship between the variables (organisational leadership behaviour and trust in the leader) was strong, as the pathway coefficient was .60 ( $p < .05$ ). The relationship as hypothesised in Chapter 2 between organisational leadership behaviour and trust in the leader was supported by the data.

**Table 4.50**  
**Unstandardised GAMMA Matrix of the Structural Model**

GAMMA	
	ORGLEAD
EFFECT	<b>0.600</b> (0.089) <b>6.738*</b>

**NOTE:** Unstandardised path coefficients in bold; standard error estimates in brackets; t-values  $\geq |1.6449|$  indicate significant parameter estimates \*,  $p < .05$

ORGLEAD: Organisational Leadership Behaviour; EFFECT: Leader Effectiveness

#### 4.7.7.3 The effect of Trust in the Leader on Leader Effectiveness

The BETA matrix as illustrated in Table 4.51, provides information on the path relationship that was hypothesised between the endogenous variable trust in the leader ( $\eta_1$ ) and leader effectiveness ( $\eta_2$ ). This hypothesised pathway was confirmed as a positive relationship between the two variables as shown in Table 4.51. The t-value of 4.528 was significant ( $p < .05$ ) as it was greater than the value of  $|1.6449|$ , thus the hypothesis of  $H_{013}: \beta_{21} = 0$  could be rejected in favour of the alternative hypothesis  $H_{a13}: \beta_{21} > 0$ . It can further be argued that the path coefficient between the two variables was moderate and positive (.38), which supported the positive relationship between the two variables.

**Table 4.51**  
**Unstandardised BETA Matrix of the Structural Model**

BETA		
	TRUST	EFFECT
TRUST	- -	- -
EFFECT	<b>0.375</b> (0.083) <b>4.528*</b>	- -

**NOTE:** Unstandardised path coefficients in bold; standard error estimates in brackets; t-values  $\geq |1.6449|$  indicate significant parameter estimates \*,  $p < .05$

EFFECT: Leader Effectiveness; TRUST: Trust in the leader

#### 4.7.8 Phase 10d: Power Assessment

The statistical power of any model relates to the probability of not making a Type II error. For the power assessment of the structural model it is important that the following elements are specified:

- a) Level of significance (.05)
- b) Sample Size (210)
- c) Degrees of freedom (87)
- d) RMSEA was set to .05 for  $H_0$
- e) RMSEA was set to .08 under  $H_a$

The power assessment of Preacher and Coffman (2006) returned a power value of .9428576 (see Appendix I). This is an indication that the analysis was sufficiently powerful ( $\geq .80$ ) which confirmed the fact that the researcher did not make an error in rejecting an incorrect model. The result of the power assessment supports the decision to accept the close fit null hypothesis.

#### 4.7.9 Phase 10e: Model Modification

In this study, the modification indices showed that there are no possible paths that could be an indication of an alternate pathway which could improve the fit of the model (Diamantopolous & Sigauw, 2000). Model modification was thus not considered as an alternative process of improving the overall fit of the model.

### 4.8 SUMMARY

The purpose of Chapter 4 was to illustrate the results obtained from the statistical analysis of the LBS as a new scale but also the structural model as an inclusion of a nomological network of different variables.

The Chapter commenced with the analysis of the item and factor analysis of the LBS (see Phase 4a and b) and the internal reliability and factor analysis of the two ancillary scales (see Phase 5a and b). All these analyses were done by using SPSS. Next, the researcher analysed the results of the measurement models of the LBS, LTS and LEQ as well as the structural model's underlying measurement model. Next, the final results of the structural model were reported on. Chapter 4 concludes by confirming the fit of the measurement model of the LBS



and the significant positive relationships that exists between organisational leadership behaviour ( $\xi_1$ ) and trust in leader ( $\eta_1$ ) and leadership effectiveness ( $\eta_2$ ), as well as the relationship between trust in leader ( $\eta_1$ ) and leader effectiveness ( $\eta_2$ ).

The next chapter will contain the general conclusions from the overall results of this study as well as the recommendations for future research and possible managerial implications of this study.

## CHAPTER 5

### DISCUSSION OF RESULTS, CONCLUSIONS AND RECOMENDATIONS FOR FURTHER STUDY

#### 5.1 INTRODUCTION

In Chapter 5, the researcher will draw conclusions from the research results discussed in Chapter 4. This chapter will provide an additional discussion regarding these results, with specific reference to the significance of the results for organisational leaders. Furthermore, managerial implications of this study, limitations found during the research process, and suggestions for future research, will be discussed in Chapter 5.

#### 5.2 PURPOSE OF THE STUDY

Chapter 1 provided insight into the state of leadership within South Africa and how important leadership behaviours are within an organisation, to ensure that South African organisations are equipped with effective leaders. It was proposed that South African leaders, through the modelling of effective leadership behaviours, will increase the overall trust between a leader and the followers, and contribute to the effectiveness of the leader within the organisation. For an organisation to operate positively in contributing towards the overall success of an organisation, one needs leaders whose followers can learn from their behaviour as stipulated in the social learning theory (Newman cited in Hendrikz, 2017). It is therefore critical to appoint leaders within organisations that could be role models that display acceptable leadership behaviours. Since leadership behaviour could have a cascading effect on the organisation, it is crucial that a leader's behaviour should be perceived as acceptable, to ensure that this displayed behaviour becomes a standard for the rest of the organisation and the leaders' followers.

For any organisation to be able to have top quality leaders, specifically when we focus on their behaviours, it is important to start with the correct identification process. This should be done by using the correct behavioural tests with a scale developed for this specific purpose. Various leadership theories, namely relationship orientated, task orientated, change orientated, strategic leadership and value-based leadership theories (ethical, transformational, servant, authentic), were proposed as leadership theories that focus on leadership behaviour in general, and they already had scales to measure leadership behaviours in each one of these

leadership dimensions. The behaviours found in these leadership theories provided the researcher with a wide spectrum of desired organisational leadership behaviours, which lead us to the main purpose of this study, namely to develop a new scale, the Leadership Behavioural Scale (LBS). The LBS can be categorised as a holistic leadership behavioural scale, which was developed to measure leadership in middle to top management within organisations.

Furthermore, the study raised the question of how leadership behaviour influences trust in the leader, but also the effectiveness of a leader within an organisation. The researcher wanted to conduct a study that could provide concrete results of the relationship that exists amongst leadership behaviour, trust and leader effectiveness. Thus, in summary it was proposed that organisational leadership is an antecedent of trust in the leader and leader effectiveness, and that trust in the leader positively affects leader effectiveness in the organisation.

The two primary substantive hypotheses, based on Chapter 2, were used to test the assumptions as mentioned above:

- 1) The LBS provides a constructive valid and reliable measure of organisational leadership behaviour of South African leaders.
- 2) The structural model provides a valid description of the way in which organisational leadership behaviour is embedded in a larger nomological network by describing the outcomes of organisational leadership behaviour, as depicted in Chapter 2.

Chapter 3 discussed in detail the research methodology used by the researcher, while chapter 4 discussed the results obtained during the data analyses. Next, the discussion of results found in Chapter 4 and the practical implications thereof, will be discussed in the following sections.

### **5.3 SUMMARY OF THE RESEARCH FINDINGS**

This section on the results obtained during the research will focus on two important aspects:

- 1) Construct validity results of the LBS.

- 2) Structural model results, which is representative of organisational leadership behaviour within a nomological network of variables.

### **5.3.1 Summary of Construct validity results of the LBS**

The main purpose of the research study was to develop a new scale to measure organisational leadership behaviour. Thus, the researcher had to ensure that the overall LBS could be considered as internally reliable and valid. During the data analysis of this study, item analysis (reliability analysis) and factor analysis (exploratory factor analysis) were done using SPSS. Hereafter, LISREL 8.8 was used to test the fit of the LBS measurement model by using confirmatory factor analysis. Before the fit of the measurement model could be tested, random item parcelling of all the items which were included into the LBS, was done.

#### **5.3.1.1 Summary of item analysis and factor analysis of the LBS scale**

For the purpose of item analysis, it is important to obtain Cronbach's alphas of  $\geq .80$ , which according to literature are the desired cut-off value (Nunnally, 1978). After analysis of the subscales of the LBS, it was found that all subscales had Cronbach alpha values above the desired .80, which ranged from .899 to .972 (Nunnally, 1978). It was also found that all subscales had item-total correlations above 0.30. None of the items were deleted after an investigation of possible poor items.

As discussed earlier, the principal factor analysis with oblique rotation was performed on the subscales of the LBS. The purpose of performing this analysis by using EFA, is to test the assumption that each one of the dimensions can be classified as a unidimensional construct, and to determine to what extent each one of the items measures the behaviour dimension that it was intended to measure, as proposed in Chapter 2.

All the subscales except for Employee Empowerment, Monitoring and Strategic Team Leadership, reported one factor with acceptable Eigenvalues of  $> 1$  and factor loadings, which were more than 0.40 for the items, which loaded on their designated dimensions. Employee Empowerment obtained unidimensionality after two poor items were identified and removed from the subscale. All the factor loadings after removing these items were above the cut-off value ( $> 0.40$ ) for the rest of Employee Empowerment subscale. Unidimensionality for Monitoring was obtained after one poor item was deleted. Strategic Team Leadership obtained unidimensionality after one poor item was deleted.

### 5.3.1.2 Summary of Confirmatory Factor Analysis of the LBS

The hypothesis of the exact fit for the measurement model was rejected, but the hypothesis of the close fit could not be rejected ( $p > 0.05$ ). This was an indication that the measurement model of the LBS fits the data closely. After further analysis of the extended fit indices, it was corroborated that the LBS showed reasonable fit (see Table 4.30).

The factor loadings of the indicator variables of each one of the dimensions found in the LAMDA – X matrix, were greater than 0.50 for all the items. It can be concluded from the CFA that the measurement model of the LBS fitted the data used in this study reasonably well, which corroborated the results found in the EFA. This contributed to the evidence of the construct validity of the LBS, which supported the first substantive research hypothesis. This is an indication that the study was successful in the development of a scale, which may measure organisational leadership behaviours as proposed in the literature review.

### 5.3.2 Summary of the construct validity of the structural model

As discussed earlier, an important aspect of this study was to determine the extent to which the construct is embedded in a larger nomological network of latent variables, which provide more information on the construct and not just the internal structure thereof (Kerlinger & Lee, 2000).

The relationship between the LBS and other latent variables was proposed, as included in the second substantive research hypothesis: The structural model provides a valid description of the way in which organisational leadership behaviour is embedded in a larger nomological network by describing the outcomes of organisational leadership behaviour, as depicted in Chapter 2.

After the construct validity and the internal reliability of the ancillary scales were tested and confirmed, the next step was to test the overall fit of the structural model. The fit of the underlying measurement model was evaluated. However, before the measurement model was fitted, the process of random item parcelling was done of all the scales, which the researcher included into the structural model (LBS, LTS and LEQ). The overall measurement model achieved an acceptable fit after the evaluation of the fit indices.

Next, the researcher assessed the fit of the structural model, which indicated that the overall model showed an acceptable fit. After analyses of the GAMMA and BETA matrices, it was

found that the relationships between the latent variables were positive and significant, which supported the proposed structural model. It was found that organisational leadership behaviour had a positive effect on trust in the leader and leader effectiveness, while trust in leader also had a positive effect on leadership effectiveness. The following section focusses on the interpretation of these relationships.

#### 5.3.2.1 The relationship between Organisational Leadership Behaviour and Trust in Leaders

A statistically significant and positive relationship was hypothesised between Organisational leadership behaviour ( $\xi_1$ ) and Trust in Leader ( $\eta_1$ ). Illustrated in Table 4.49, this relationship was confirmed by the statistical analysis with a t-value of 15.467 ( $t > 1.6449$ ). This was an indication of a significant relationship between these two latent variables. Thus, hypothesis 11 ( $H_{011}$ ) was rejected in favour of  $H_{a11}$ :  $\gamma_{11} > 0$ , as it supported the proposed relationship in Chapter 2 between these latent variables.

The relationship between these two constructs is supported by literature – both theoretically and empirically (Anderson, 2017; Engelbrecht & Chamerlain, 2005; Engelbrecht et al., 2017), whereby organisational leadership behaviour correlates strongly with trust in the leader. The behaviour of a leader is very important, especially in determining the level of trust that exists within a group or organisation (Joseph & Winston, 2005).

The rationale that exists behind this relationship is the fact that a leader's behaviour that is consistent, ethical in nature, credible, and can be perceived as trustworthy, will increase the trust that exists among followers. Trust in the leader results in followers who truly believes their leader cares about them and this results in perceptions of procedural justice. Thus, this study supports previous research done, and illustrates a significant positive relationship between these variables.

#### 5.3.2.2 The relationship between Trust in Leaders and Leader Effectiveness

It was found that the relationship between these two latent variables was statistically significant as hypothesised in Chapter 2. As illustrated by the beta matrix in Table 4.51, this hypothesised relationship between trust in leaders ( $\eta_1$ ) and leader effectiveness ( $\eta_2$ ) was significant with a t-value of 4.528 ( $t > 1.6649$ ). Thus, a significant path was found between the

constructs, which resulted in the rejection of hypothesis 13 ( $H_{013}$ ) in favour of  $H_{a13}$ :  $\beta_{21} > 0$ , as it supported the relationship that was proposed between the two latent variables.

This relationship was reflected in numerous studies done, which illustrated that a leader's performance can increase trust as well as the overall effectiveness of the leader (Engelbrecht et al., 2017; Wolmarans 2014; Joseph & Winston, 2015). The creditability of a leader's behaviour increases the trust of followers, which influences the performance and effectiveness of leaders and followers (Yukl, 2013).

The positive significant relationship found between trust in leader and leader effectiveness in this study, was corroborated by the theoretical discussions illustrated in Chapter 2. It can therefore be concluded that a significant positive relationship exists between trust in the leader and leader effectiveness.

#### 5.3.2.3 The relationship between Organisation Leadership Behaviour and Leader Effectiveness

A significant and positive relationship exists between organisational leadership behaviour ( $\xi_1$ ) and leader effectiveness ( $\eta_2$ ) as illustrated in Table 4.50. The t-value of 6.738 was significant ( $p < 0.05$ ) as it was more than  $|1.6449|$ . The hypothesis  $H_{012}$ :  $\gamma_{21} = 0$  could therefore be rejected in favour of the alternative hypothesis  $H_{a12}$ :  $\gamma_{21} > 0$ .

Various studies illustrated the relationship that exists between these two latent variables, where a leader's behaviour can influence the performance and behaviour of the followers within the organisation (De Hoogh & Den hartog, 2008; Engelbrecht et al., 2017; Henning et al., 2004). The behaviour of an organisation's leader is very important and can be used as a tool that positively contributes towards the organisation's culture and the desired behaviours of followers. Leadership behaviour can be seen as a critical determinant of an organisation's overall climate, which can also be seen as an ethical climate (Engelbrecht et al., 2017).

Thus, the positive significant relationship found within this study between these two latent variables was confirmed by previous research done. It can be concluded that a significant and positive relationship exists between organisational leadership behaviour ( $\xi_1$ ) and leader effectiveness ( $\eta_2$ ).

It can be concluded that the structural model was successful in the explanation of the observed covariance, which existed between the latent variables found in the model. This contributes towards the second substantive hypothesis that organisational leadership behaviour is embedded in a larger nomological network, by describing the outcomes of organisational leadership behaviour, which added to the overall construct validity of the study. The second substantive research hypothesis could therefore be accepted.

In the next section of this chapter, the researcher will focus on the practical managerial implications and limitations of the study and research results.

#### **5.4 MANAGERIAL IMPLICATIONS OF THE STUDY**

The scope of this study was widespread which left the researcher with numerous implications that could be used by managers within an organisation. Thus, it is important for organisational leaders to focus on their behaviour, to determine whether or not they display behaviour that is acceptable within the organisation and whether this could be a contributing factor towards the organisational effectiveness and successes.

This links up to the importance of electing leaders that are fit for a specific position, and by doing that, the importance of evaluating them comes into play. A high standard selection process in an organisation plays a crucial role in the appointment of leaders. Organisations should be able to use these selection methods to make decisions on the behaviour of a potential leader. The LBS was developed to assist organisations with their selection process by evaluating the overall behaviour of the possible leadership candidates.

As discussed in the previous section, it was found that the LBS is a construct valid measure of organisational leadership behaviour. The LBS could therefore be used to test the level of organisational leadership behaviour within the management levels of their organisation, which can be used to develop the organisational leadership behaviour in the areas where the behaviours are not up to standard.

The LBS, being an 'other-rating' scale, can be used to assess the organisational leaders to establish the level of displayed behaviour within their management position. This can be used to identify possible gaps with regard to their behaviour, by taking their followers' perceptions into consideration, which becomes a platform for the leaders' development. It is therefore



proposed by the researcher, that the results obtained by the LBS, should be used as one of the steps to assist the leader with self-awareness regarding their behaviour, which will guide them in their personal development within their leadership positions.

The results obtained in the analysis of the relationships between the constructs in the structural model provided the researcher with valuable information and implications of the effects that exist between the constructs. Because there were significant relationships between the constructs, it can be useful for business managers to take the actual underlying elements of these constructs into consideration. Organisational leaders could pursue various initiatives to develop and enhance these constructs within the organisation for the benefit of the organisation and its employees, if it leads to the outcome of an effective and successful organisation.

Thus, when an organisation invests in the assessment, recruiting and development of the organisation's leadership, specifically their organisational-related behaviours, it can be an example of cascading towards lower levels within the organisation. In time, this organisation and its leaders should manage to set an example of acceptable organisational behaviour, which will lead to a more productive and effective workforce.

Thus, organisations and their leaders should strive for an organisation which fosters a culture where effective and acceptable behaviour is the key to overall success.

## **5.5 LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH**

This study was successful in the development of the Leadership Behavioural Scale, specifically with the good results it produced for the internal reliability and construct validity. The study also managed to provide valuable insight into the constructs of organisational leadership behaviour, trust in the leader, and leader effectiveness, in that the relationships between these constructs had a positive effect on one another. However, certain limitations were encountered during the course of this study, which the researcher would like to acknowledge and should be considered for future research.

The first point to consider would be the demographics of the study, which specifically relates to the sampling method. All the participants were from South Africa. However, the limitation with regards to the racial demographics of South Africa should be taken into consideration.

This is one of the limitations of the procedure of non-probability sampling. It would therefore be recommended that better representation of the racial demographics should be addressed.

The next point that needs to be taken into consideration, is the language aspect used in the LBS. The development of the LBS attempted to assist the participants by expanding difficult words and concepts to ensure that the questionnaire would be more accessible to individuals whose first language is not necessarily English. However, it would be recommended that the LBS should be translated into other languages that are mostly used in South Africa.

A third point to consider is the fact that the LBS only focussed on an 'other-rating' scale, which made this a 'single source study'. It would be recommended to expand the LBS to a self-rating scale, which can then be used to correlate data with the 'other-rating' scale. It could be useful to implement this into an organisation as a 360-assessment tool, which allows the organisation to assess the leader's self-perception with the perceptions of the followers. The fact that the LBS would be expanded to a self-rating scale, includes a few benefits such as (1) it increases development opportunities and (2) it makes this assessment tool more useable in selection processes, especially when someone is not already working for the organisation.

Finally, two of the LBS's dimensions during the EFA process produced multi-dimensionality, until some of the items were deleted. Even though the final study provided results that were highly acceptable regarding the reliability and factor analysis, it would be recommended for future researchers to do a further analysis of the LBS items, where there is no item parcelling present, which makes the items load freely onto the overall (second-order) concept of organisation leadership behaviour. Additionally, it would be recommended that for further investigation into the structural model, the individual path way relationships of the ten LBS dimensions, should be analysed. To substantiate this claim, the researcher suggests that the structural model should be expanded, by incorporating other antecedents, mediators/moderators and outcomes of organisational leadership. A valuable study would be to incorporate this structural model with constructs such as principled leadership, moral intelligence, cultural intelligence, organisational justice and outcomes such as organisational citizenship behaviour (OCB) and employee engagement.

## **5.6 CONCLUSION**

It could be concluded that this study successfully added value since it presented a reliable and valid leadership behavioural assessment tool that was developed within the South African context. The aim of the study, which was to develop a scale that included different aspects of leadership behavioural theories into one overall measurement scale, was achieved successfully.

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## APPENDICES

### APPENDIX A – SPSS Computation of item parcels

```
COMPUTE EE1=MEAN(Q8,Q12,Q16,Q20) .  
EXECUTE .
```

```
COMPUTE EE2=MEAN(Q9,Q13,Q17,Q21) .  
EXECUTE .
```

```
COMPUTE EE3=MEAN(Q10,Q14,Q18) .  
EXECUTE .
```

```
COMPUTE EE4=MEAN(Q11,Q15,Q19) .  
EXECUTE .
```

```
COMPUTE SUPCON1=MEAN(Q22,Q25,Q28) .  
EXECUTE .
```

```
COMPUTE SUPCON2=MEAN(Q23,Q26,Q29) .  
EXECUTE .
```

```
COMPUTE SUPCON3=MEAN(Q24,Q27,Q30) .  
EXECUTE .
```

```
COMPUTE DEV1=MEAN(Q31,Q34,Q37) .  
EXECUTE .
```

```
COMPUTE DEV2=MEAN(Q32,Q35,Q38) .  
EXECUTE .
```

```
COMPUTE DEV3=MEAN(Q33,Q36,Q39) .  
EXECUTE .
```

```
COMPUTE CONS1=MEAN(Q41,Q44,Q47) .  
EXECUTE .
```

```
COMPUTE CONS2=MEAN(Q42,Q45,Q48) .  
EXECUTE .
```

```
COMPUTE CONS3=MEAN(Q43,Q46,Q49) .  
EXECUTE .
```

```
COMPUTE TASKGOAL1=MEAN(Q50,Q53,Q56,Q59) .  
EXECUTE .
```

```
COMPUTE TASKGOAL2=MEAN(Q51,Q54,Q57) .  
EXECUTE .
```

```
COMPUTE TASKGOAL3=MEAN(Q52,Q55,Q58) .  
EXECUTE .
```

```
COMPUTE MONITORING1=MEAN(Q60,Q63,Q66) .  
EXECUTE .
```

```
COMPUTE MONITORING2=MEAN(Q61,Q64,Q67) .  
EXECUTE .
```

```
COMPUTE MONITORING3=MEAN(Q62,Q65) .  
EXECUTE .
```

```
COMPUTE NETWORKING1=MEAN(Q68,Q71,Q74) .  
EXECUTE .
```

```
COMPUTE NETWORKING2=MEAN(Q69,Q72,Q75) .  
EXECUTE .
```

```
COMPUTE NETWORKING3=MEAN(Q70,Q73,Q76) .  
EXECUTE .
```

```
COMPUTE CHANGE1=MEAN(Q77,Q81,Q85,Q89) .  
EXECUTE .
```

```
COMPUTE CHANGE2=MEAN(Q78,Q82,Q86) .  
EXECUTE .
```

```
COMPUTE CHANGE3=MEAN(Q79,Q83,Q87) .  
EXECUTE .
```

```
COMPUTE CHANGE4=MEAN(Q80,Q84,Q88) .  
EXECUTE .
```

```
COMPUTE ETHICAL1=MEAN(Q90,Q94,Q98,Q102) .  
EXECUTE .
```

```
COMPUTE ETHICAL2=MEAN(Q91,Q95,Q99,Q103) .  
EXECUTE .
```

```
COMPUTE ETHICAL3=MEAN(Q92,Q96,Q100,Q104) .  
EXECUTE .
```

```
COMPUTE ETHICAL4=MEAN(Q93,Q97,Q101) .  
EXECUTE .
```

```
COMPUTE STRATTEAM1=MEAN(Q105,Q109,Q113,Q117,Q121) .  
EXECUTE .
```

```
COMPUTE STRATTEAM2=MEAN(Q106,Q110,Q114,Q118) .  
EXECUTE .
```

```
COMPUTE STRATTEAM3=MEAN(Q107,Q111,Q115,Q119) .  
EXECUTE .
```

```
COMPUTE STRATTEAM4=MEAN(Q108,Q112,Q116,Q120) .  
EXECUTE .
```

**APPENDIX B – SPSS Computation of item parcelling**

```
COMPUTE ORGL1=MEAN(Q8,Q18,Q28,Q38,Q48,Q58,Q68,Q78,Q88,Q98,Q108,Q118) .  
EXECUTE .
```

```
COMPUTE ORGL2=MEAN(Q9,Q19,Q29,Q39,Q49,Q59,Q69,Q79,Q89,Q99,Q109,Q119) .  
EXECUTE .
```

```
COMPUTE ORGL3=MEAN(Q10,Q20,Q30,Q40,Q50,Q60,Q70,Q80,Q90,Q100,Q110,Q120) .  
EXECUTE .
```

```
COMPUTE ORGL4=MEAN(Q11,Q21,Q31,Q41,Q51,Q61,Q71,Q81,Q91,Q101,Q111,Q121) .  
EXECUTE .
```

```
COMPUTE ORGL5=MEAN(Q12,Q22,Q32,Q42,Q52,Q62,Q72,Q82,Q92,Q102,Q112) .  
EXECUTE .
```

```
COMPUTE ORGL6=MEAN(Q13,Q23,Q33,Q43,Q53,Q63,Q73,Q83,Q93,Q103,Q113) .  
EXECUTE .
```

```
COMPUTE ORGL7=MEAN(Q14,Q24,Q34,Q44,Q54,Q64,Q74,Q84,Q94,Q104,Q114) .  
EXECUTE .
```

```
COMPUTE ORGL8=MEAN(Q15,Q25,Q35,Q45,Q55,Q65,Q75,Q85,Q95,Q105,Q115) .  
EXECUTE .
```

```
COMPUTE ORGL9=MEAN(Q16,Q26,Q36,Q46,Q56,Q66,Q76,Q86,Q96,Q106,Q116) .  
EXECUTE .
```

```
COMPUTE ORGL10=MEAN(Q17,Q27,Q37,Q47,Q57,Q67,Q77,Q87,Q97,Q107,Q117) .  
EXECUTE .
```

```
COMPUTE TRUST1=MEAN(Q122,Q125,Q128,Q131,Q134) .  
EXECUTE .
```

```
COMPUTE TRUST2=MEAN(Q123,Q126,Q129,Q132) .  
EXECUTE .
```

```
COMPUTE TRUST3=MEAN(Q124,Q127,Q130,Q133) .  
EXECUTE .
```

```
COMPUTE EFF1=MEAN(Q135,Q137,Q139) .  
EXECUTE .
```

```
COMPUTE EFF2=MEAN(Q136,Q138,Q140) .  
EXECUTE .
```

**APPENDIX C – LBS Measurement model fit statistics**

## Goodness of Fit Statistics

Degrees of Freedom = 482  
 Minimum Fit Function Chi-Square = 1192.086 (P = 0.0)  
 Normal Theory Weighted Least Squares Chi-Square = 1220.787 (P = 0.0)  
 Satorra-Bentler Scaled Chi-Square = 778.590 (P = 0.00)  
 Estimated Non-centrality Parameter (NCP) = 296.590  
 90 Percent Confidence Interval for NCP = (224.238 ; 376.850)

Minimum Fit Function Value = 5.704  
 Population Discrepancy Function Value (F0) = 1.419  
 90 Percent Confidence Interval for F0 = (1.073 ; 1.803)  
 Root Mean Square Error of Approximation (RMSEA) = 0.0543  
 90 Percent Confidence Interval for RMSEA = (0.0472 ; 0.0612)  
 P-Value for Test of Close Fit (RMSEA < 0.05) = 0.157

Expected Cross-Validation Index (ECVI) = 4.807  
 90 Percent Confidence Interval for ECVI = (4.460 ; 5.191)  
 ECVI for Saturated Model = 5.694  
 ECVI for Independence Model = 270.856

Chi-Square for Independence Model with 561 Degrees of Freedom = 56540.898  
 Independence AIC = 56608.898  
 Model AIC = 1004.590  
 Saturated AIC = 1190.000  
 Independence CAIC = 56756.700  
 Model CAIC = 1495.813  
 Saturated CAIC = 3776.529

Normed Fit Index (NFI) = 0.986  
 Non-Normed Fit Index (NNFI) = 0.994  
 Parsimony Normed Fit Index (PNFI) = 0.847  
 Comparative Fit Index (CFI) = 0.995  
 Incremental Fit Index (IFI) = 0.995  
 Relative Fit Index (RFI) = 0.984

Critical N (CN) = 150.561

Root Mean Square Residual (RMR) = 0.0819  
 Standardized RMR = 0.0595  
 Goodness of Fit Index (GFI) = 0.744  
 Adjusted Goodness of Fit Index (AGFI) = 0.684  
 Parsimony Goodness of Fit Index (PGFI) = 0.603

**APPENDIX D – Power assessment LBS measurement model**

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)

R is free software and comes with ABSOLUTELY NO WARRANTY.  
 You are welcome to redistribute it under certain conditions.  
 Type 'license()' or 'licence()' for distribution details.

R is a collaborative project with many contributors.  
 Type 'contributors()' for more information and  
 'citation()' on how to cite R or R packages in publications.

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.2494.%03d.png")
Rweb:>
Rweb:> #Power analysis for CSM
Rweb:>
Rweb:> alpha <- 0.05 #alpha level
Rweb:> d <- 482 #degrees of freedom
Rweb:> n <- 210 #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:>
```

**Compute Power for RMSEA**

Alpha	.05
Degrees of Freedom	482
Sample Size	210
Null RMSEA	.05
Alt. RMSEA	.08

Generate R Code

```
pow <- pchisq(cval,d,ncp=ncpa,lower.tail=F)
}
if(rmsea0>rmseaa) {
  cval <- qchisq(1-alpha,d,ncp=ncp0,lower.tail=F)
  pow <- 1-pchisq(cval,d,ncp=ncpa,lower.tail=F)
}
print(pow)
```

Submit above to Rweb      Erase R code

**APPENDIX E – Revised LTS measurement model fit**

## Goodness of Fit Statistics

Degrees of Freedom = 54  
 Minimum Fit Function Chi-Square = 169.630 (P = 0.00)  
 Normal Theory Weighted Least Squares Chi-Square = 182.028 (P = 0.00)  
 Satorra-Bentler Scaled Chi-Square = 113.483 (P = 0.000)  
 Chi-Square Corrected for Non-Normality = 105.551 (P = 0.000)  
 Estimated Non-centrality Parameter (NCP) = 59.483  
 90 Percent Confidence Interval for NCP = (32.696 ; 94.028)

Minimum Fit Function Value = 0.812  
 Population Discrepancy Function Value (F0) = 0.285  
 90 Percent Confidence Interval for F0 = (0.156 ; 0.450)  
 Root Mean Square Error of Approximation (RMSEA) = **0.0726**  
 90 Percent Confidence Interval for RMSEA = (0.0538 ; 0.0913)  
 P-Value for Test of Close Fit (RMSEA < 0.05) = 0.0255

Expected Cross-Validation Index (ECVI) = 0.773  
 90 Percent Confidence Interval for ECVI = (0.644 ; 0.938)  
 ECVI for Saturated Model = 0.746  
 ECVI for Independence Model = 35.058

Chi-Square for Independence Model with 66 Degrees of Freedom = 7303.164  
 Independence AIC = 7327.164  
 Model AIC = 161.483  
 Saturated AIC = 156.000  
 Independence CAIC = 7379.329  
 Model CAIC = 265.813  
 Saturated CAIC = 495.074

Normed Fit Index (NFI) = 0.984  
 Non-Normed Fit Index (NNFI) = 0.990  
 Parsimony Normed Fit Index (PNFI) = 0.805  
 Comparative Fit Index (CFI) = 0.992  
 Incremental Fit Index (IFI) = 0.992  
 Relative Fit Index (RFI) = 0.981

Critical N (CN) = 150.304

Root Mean Square Residual (RMR) = 0.0335  
 Standardized RMR = 0.0285  
 Goodness of Fit Index (GFI) = 0.873  
 Adjusted Goodness of Fit Index (AGFI) = 0.817  
 Parsimony Goodness of Fit Index (PGFI) = 0.605

**APPENDIX F – Revised LEQ measurement model fit**

Degrees of Freedom = 2  
 Minimum Fit Function Chi-Square = 5.456 (P = 0.0654)  
 Normal Theory Weighted Least Squares Chi-Square = 5.218 (P = 0.0736)  
 Satorra-Bentler Scaled Chi-Square = 4.565 (P = 0.102)  
 Chi-Square Corrected for Non-Normality = 5.130 (P = 0.0769)  
 Estimated Non-centrality Parameter (NCP) = 2.565  
 90 Percent Confidence Interval for NCP = (0.0 ; 12.951)

Minimum Fit Function Value = 0.0261  
 Population Discrepancy Function Value (F0) = 0.0123  
 90 Percent Confidence Interval for F0 = (0.0 ; 0.0620)  
 Root Mean Square Error of Approximation (RMSEA) = **0.0783**  
 90 Percent Confidence Interval for RMSEA = (0.0 ; 0.176)  
 P-Value for Test of Close Fit (RMSEA < 0.05) = 0.226

Expected Cross-Validation Index (ECVI) = 0.0984  
 90 Percent Confidence Interval for ECVI = (0.0861 ; 0.148)  
 ECVI for Saturated Model = 0.0957  
 ECVI for Independence Model = 3.561

Chi-Square for Independence Model with 6 Degrees of Freedom = 736.185  
 Independence AIC = 744.185  
 Model AIC = 20.565  
 Saturated AIC = 20.000  
 Independence CAIC = 761.573  
 Model CAIC = 55.342  
 Saturated CAIC = 63.471

Normed Fit Index (NFI) = 0.994  
 Non-Normed Fit Index (NNFI) = 0.989  
 Parsimony Normed Fit Index (PNFI) = 0.331  
 Comparative Fit Index (CFI) = 0.996  
 Incremental Fit Index (IFI) = 0.997  
 Relative Fit Index (RFI) = 0.981

Critical N (CN) = 422.734

Root Mean Square Residual (RMR) = 0.0278  
 Standardized RMR = 0.0133  
 Goodness of Fit Index (GFI) = 0.988  
 Adjusted Goodness of Fit Index (AGFI) = 0.938  
 Parsimony Goodness of Fit Index (PGFI) = 0.198

**APPENDIX G – Measurement model underlying the structural model fit**

## Goodness of Fit Statistics

Degrees of Freedom = 87  
 Minimum Fit Function Chi-Square = 185.296 (P = 0.00)  
 Normal Theory Weighted Least Squares Chi-Square = 183.173 (P = 0.00)  
 Satorra-Bentler Scaled Chi-Square = 137.364 (P = 0.000469)  
 Chi-Square Corrected for Non-Normality = 213.709 (P = 0.00)  
 Estimated Non-centrality Parameter (NCP) = 50.364  
 90 Percent Confidence Interval for NCP = (22.394 ; 86.263)

Minimum Fit Function Value = 0.887  
 Population Discrepancy Function Value (F0) = 0.241  
 90 Percent Confidence Interval for F0 = (0.107 ; 0.413)  
 Root Mean Square Error of Approximation (RMSEA) = 0.0526  
 90 Percent Confidence Interval for RMSEA = (0.0351 ; 0.0689)  
 P-Value for Test of Close Fit (RMSEA < 0.05) = 0.382

Expected Cross-Validation Index (ECVI) = 0.973  
 90 Percent Confidence Interval for ECVI = (0.839 ; 1.145)  
 ECVI for Saturated Model = 1.148  
 ECVI for Independence Model = 77.099

Chi-Square for Independence Model with 105 Degrees of Freedom = 16083.683  
 Independence AIC = 16113.683  
 Model AIC = 203.364  
 Saturated AIC = 240.000  
 Independence CAIC = 16178.889  
 Model CAIC = 346.818  
 Saturated CAIC = 761.653

Normed Fit Index (NFI) = 0.991  
 Non-Normed Fit Index (NNFI) = 0.996  
 Parsimony Normed Fit Index (PNFI) = 0.821  
 Comparative Fit Index (CFI) = 0.997  
 Incremental Fit Index (IFI) = 0.997  
 Relative Fit Index (RFI) = 0.990

Critical N (CN) = 184.486

Root Mean Square Residual (RMR) = 0.0124  
 Standardized RMR = 0.0117  
 Goodness of Fit Index (GFI) = 0.895  
 Adjusted Goodness of Fit Index (AGFI) = 0.856  
 Parsimony Goodness of Fit Index (PGFI) = 0.649



**APPENDIX H – Structural model fit**

## Goodness of Fit Statistics

Degrees of Freedom = 87

Minimum Fit Function Chi-Square = 185.296 (P = 0.00)

Normal Theory Weighted Least Squares Chi-Square = 183.173 (P = 0.00)

Satorra-Bentler Scaled Chi-Square = 137.364 (P = 0.000469)

Chi-Square Corrected for Non-Normality = 213.709 (P = 0.00)

Estimated Non-centrality Parameter (NCP) = 50.364

90 Percent Confidence Interval for NCP = (22.394 ; 86.263)

Minimum Fit Function Value = 0.887

Population Discrepancy Function Value (F0) = 0.241

90 Percent Confidence Interval for F0 = (0.107 ; 0.413)

Root Mean Square Error of Approximation (RMSEA) = 0.0526

90 Percent Confidence Interval for RMSEA = (0.0351 ; 0.0689)

P-Value for Test of Close Fit (RMSEA &lt; 0.05) = 0.382

Expected Cross-Validation Index (ECVI) = 0.973

90 Percent Confidence Interval for ECVI = (0.839 ; 1.145)

ECVI for Saturated Model = 1.148

ECVI for Independence Model = 77.099

Chi-Square for Independence Model with 105 Degrees of Freedom = 16083.683

Independence AIC = 16113.683

Model AIC = 203.364

Saturated AIC = 240.000

Independence CAIC = 16178.889

Model CAIC = 346.818

Saturated CAIC = 761.653

Normed Fit Index (NFI) = 0.991

Non-Normed Fit Index (NNFI) = 0.996

Parsimony Normed Fit Index (PNFI) = 0.821

Comparative Fit Index (CFI) = 0.997

Incremental Fit Index (IFI) = 0.997

Relative Fit Index (RFI) = 0.990

Critical N (CN) = 184.486

Root Mean Square Residual (RMR) = 0.0124

Standardized RMR = 0.0117

Goodness of Fit Index (GFI) = 0.895

Adjusted Goodness of Fit Index (AGFI) = 0.856

Parsimony Goodness of Fit Index (PGFI) = 0.649

## APPENDIX I – Power assessment of structural model

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 'license()' or 'licence()' for distribution details.

R is a collaborative project with many contributors.  
 Type 'contributors()' for more information and  
 'citation()' on how to cite R or R packages in publications.

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.17174.%03d.png")
Rweb:>
Rweb:> #Power analysis for CSM
Rweb:>
Rweb:> alpha <- 0.05 #alpha level
Rweb:> d <- 87 #degrees of freedom
Rweb:> n <- 210 #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<=rmseaa) {
+   pchisq(cval,d,ncp="ncp0,lower.tail=F)" } else {
+   cval <- qchisq(1-alpha,d,ncp=ncp0,lower.tail=F)
+   pow <- 1-pchisq(cval,d,ncp=ncpa,lower.tail=F)
+ }
Rweb:> print(pow)
[1] 0.9428576
Rweb:>
Rweb:
```

### Compute Power for RMSEA

Alpha	.05
Degrees of Freedom	87
Sample Size	210
Null RMSEA	.05
Alt. RMSEA	.08
Generate R Code	
<pre>#Power analysis for CSM alpha &lt;- 0.05 #alpha level d &lt;- 87 #degrees of freedom n &lt;- 210 #sample size rmsea0 &lt;- 0.05 #null hypothesized RMSEA rmseaa &lt;- 0.08 #alternative hypothesized RMSEA</pre>	
Submit above to Rweb	Erase R code

**APPENDIX J – PHI matrix used for discriminant validity**

PHI	EMPOWER	SUPCON	DEVELOP	CONSULTI	TASKGOAL	MONITORI
EMPOWER	1.000					
SUPCON	0.882 (0.020)	1.000				
DEVELOP	43.318 0.868 (0.022)	49.858 0.898 (0.018)	1.000			
CONSULTI	40.103 0.869 (0.018)	43.679 0.881 (0.020)	40.153 0.872 (0.022)	1.000		
TASKGOAL	47.192 0.639 (0.051)	43.679 0.728 (0.038)	40.153 0.766 (0.034)	15.058 0.690 (0.046)	1.000	
MONITORI	12.648 0.546 (0.060)	18.999 0.529 (0.063)	22.239 0.549 (0.066)	15.058 0.481 (0.068)	0.803 (0.040)	1.000
NETWORKI	9.104 0.630 (0.048)	8.343 0.660 (0.046)	8.324 0.708 (0.047)	7.020 0.695 (0.043)	20.286 0.629 (0.050)	0.526 (0.063)
CHANGE	13.051 0.813 (0.029)	14.413 0.838 (0.025)	15.017 0.850 (0.032)	16.095 0.840 (0.025)	12.675 0.789 (0.035)	8.319 0.681 (0.049)
ETHICAL	28.265 0.799 (0.026)	33.505 0.876 (0.018)	26.537 0.848 (0.023)	33.448 0.836 (0.023)	22.665 0.738 (0.041)	13.922 0.557 (0.065)
TEAM	30.710 0.811 (0.030)	47.607 0.831 (0.026)	37.123 0.857 (0.036)	36.381 0.807 (0.031)	17.930 0.787 (0.038)	8.536 0.699 (0.049)
	27.474	32.442	23.962	26.050	20.967	14.165

PHI

	NETWORKI	CHANGE	ETHICAL	TEAM
NETWORKI	1.000			
CHANGE	0.804 (0.034) 23.435	1.000		
ETHICAL	0.711 (0.042) 16.988	0.862 (0.024) 36.567	1.000	
TEAM	0.780 (0.034) 22.732	0.916 (0.020) 46.774	0.871 (0.021) 41.550	1.000