THE INFLUENCE OF INTEGRITY AND ETHICAL LEADERSHIP ON TRUST AND EMPLOYEE WORK ENGAGEMENT

by

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DECLARATION

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ABSTRACT

This study investigated the emerging concept of work engagement and how organisational leaders can exert influence on it. It was therefore important to obtain understanding of and deeper insight into the impact of these key stakeholders on the employee's work engagement and related concepts.

The aim of the study was to investigate existing relationships between constructs that play a significant role in the relationship between leader and follower in the organisation. These constructs include integrity, ethical leadership and trust in the leader, and the effect these constructs have on employee work engagement. The study thus was undertaken to obtain more clarity about these aspects. Based on research on the existing literature, a theoretical model depicting how the different constructs are related to one another was developed and various hypotheses were formulated.

Data for the purpose of the quantitative study were collected by means of an electronic web-based questionnaire. A total of 204 completed questionnaires were returned. The final questionnaire comprised four subscales, namely the 17-item Utrecht Work Engagement Scale (UWES), the 14-item Leader Trust Scale (LTS), the 17-item Leadership of Ethics Scale (LES), and the 9-item Behavioural Integrity Survey (BIS).

The postulated relationships and the conceptual model were empirically tested using various statistical methods. Reliability analysis was done on all the measurement scales and adequate reliability was found. The content and structure of the measured constructs were investigated by means of confirmatory and exploratory factor analyses. The results indicated that good fit was achieved for all the refined measurement models. Subsequently, Structural Equation Modelling (SEM) was used to determine the extent to which the conceptual model fitted the data obtained from the sample and to test the relationships between the constructs. The results indicated positive relationships between trust in the leader and work engagement; ethical leadership and work engagement; ethical leadership and trust in the leader; integrity and ethical leadership; and integrity and trust in the leader.

The present study contributes to existing literature on work engagement and ethical leadership by providing insights into the nature of the relationships among these constructs. The study also identifies practical implications to be considered in management practices in order to enhance and encourage these constructs, as well as the relationships between these constructs in the workplace. The limitations and recommendations present additional insights and possibilities that could be explored through future research studies.

OPSOMMING

Die huidige studie is gebaseer op die belangrikheid van werkstoewyding in die werkplek en op hoe leiers in die organisasie dit beïnvloed. Dit was dus belangrik om insig te verwerf rakende die invloed van hierdie belangrike rolspelers op die werknemer se werkstoewyding.

Die studie het ten doel gehad om die verwantskappe tussen konstrukte wat binne die organisasie 'n beduidende rol in die verhouding tussen die leier en ondergeskikte speel, te ondersoek. Hierdie konstrukte omvat integriteit en etiese leierskap, asook die vertroue tussen leier en ondergeskikte, en die graad van invloed wat die veranderlikes op die werknemer se werkstoewyding uitoefen. Die studie is dus uitgevoer om meer duidelikheid oor hierdie aspekte te verkry. 'n Teoretiese model wat voorstel hoe die verskillende konstrukte aan mekaar verwant is, is op grond van die navorsing oor die bestaande literatuur ontwikkel. Verskeie hipoteses is geformuleer.

Data vir die doel van die kwantitatiewe studie is deur middel van 'n elektroniese web-gebaseerde vraelys ingesamel. 'n Totaal van 204 voltooide vraelyste is terugontvang. Die finale vraelys is uit vier subvraelyste saamgestel, te wete die 17-item *Utrecht Work Engagement Scale* (UWES), die 14-item *Leader Trust Scale* (LTS), die 17-item *Leadership of Ethics Scale* (LES), en die 9-item *Behavioural Integrity Survey* (BIS).

Die gepostuleerde verwantskappe en die konseptuele model is empiries met behulp van verskeie statistiese metodes getoets. Betroubaarheidsanalise is met behulp van die betrokke meetinstrumente uitgevoer en voldoende betroubaarheid is gevind. Die inhoud en die struktuur van die konstrukte wat deur die instrumente gemeet is, is verder deur middel van verkennende en bevestigende faktorontledings ondersoek. Die resultate het goeie passings vir al die hersiene metingsmodelle getoon. Daarna is struktuurvergelykings-modellering (SVM), gebruik om te bepaal tot watter mate die konseptuele model die data pas, en om die verwantskappe tussen die verskillende konstrukte te toets. Die resultate het positiewe verwantskappe tussen vertroue in die leier en werkstoewyding; etiese leierskap en

werkstoewyding; etiese leierskap en vertroue; integriteit en etiese leierskap; en integriteit en vertroue in die leier aangedui.

Hierdie studie dra by tot die bestaande literatuur aangaande beide werkstoewyding en etiese leierskap deurdat dit insig bied in die aard van verhoudings tussen hierdie konstrukte. Die studie identifiseer ook praktiese implikasies om in bestuurspraktyke in aanmerking geneem te word om die betrokke konstrukte, asook die verwantskappe tussen die veranderlikes, te versterk en aan te moedig. Die beperkings en aanbevelings van die studie dui op verdere insig en moontlikhede wat in toekomstige navorsing ondersoek kan word.

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CHAPTER 1

INTRODUCTION, RESEARCH OBJECTIVE AND OVERVIEW OF THE STUDY

1.1 Introduction

Organisations strive to be successful and productive in the competitive global market. This implies that organisations in developing countries, such as South Africa, have to work hard to be successful. Productivity is therefore the drive behind every organisation's performance goal. Productivity depends on a wide range of factors inside and outside the work environment. One of the factors or motivators of productivity and performance that is discussed on a continuously basis in the literature is work engagement (Bakker & Demerouti, 2008; Rich, Lepine & Crawford, 2010; Saks, 2006; Tims, Bakker & Xanthopoulou, 2011). According to Gruman and Saks (2011, p. 124), work engagement is the "key to an organisation's success and competitiveness". An employee will be productive and perform well in the company when he/she is really engaged in the work. This means that the employee enjoys the work, is committed to the work and is more efficient and involved in the work (Schaufeli & Bakker, 2004).

Work engagement is perceived as an important construct in the workplace because it is likely to increase pro-organisational work behaviour and decrease counterproductive conduct (Den Hartog & Belschak, 2012). It is widely studied by researchers in order to identify the most important elements that cause employees to become engaged in their jobs. Work engagement indicates an employee's commitment to the job and how the employee is energised while experiencing a sense of significance by executing the work (Bakker & Demerouti, 2008). This is a valuable asset for an employer, because engagement implies that the employee will take full responsibility for the job and go the extra mile to reach high performance targets.

Since work engagement instigates productive and efficient employee work performance, it is likely to contribute to the effectiveness of the organisation. Macey, Schneider, Barbera and Young (2009) have stated that an engaged workforce has superior Return on Assets (ROA), profitability and shareholder value. They explained that the behavioural energy from engaged

employees goes through a process by which it is translated into the financial outcomes of the organisation.

Figure 1.1 illustrates the translation process. The high performance work environment refers to the conditions in the organisation that facilitate and allow employees to be engaged in their work. Engagement is then divided into psychological engagement and behavioural engagement. Employee engagement leads to certain outcomes such as tangible performance and intangible assets including customer loyalty and intellectual capital. Engagement also lowers the risk profile of the organisation because employees are more dedicated to create value for the company and be consistent in their interactions with shareholders. All these outcomes have an impact on the cash flow and shareholder value (Macey et al.). The employee value chain illustrated in Figure 1.1 gives an indication of the importance of work engagement for the organisation.

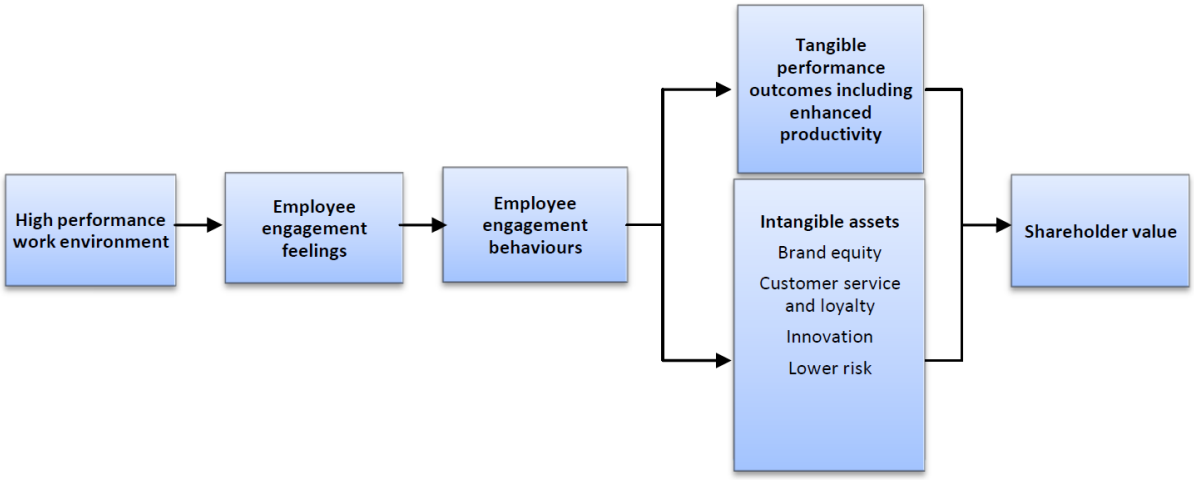

Figure 2.1 **Employee engagement value chain**

(Macey, Schneider, Barbera, & Young, 2009, p. 8)

Identifying the situations that foster work engagement of employees is vital for the sustainability and growth of organisations (Lin, 2009). Previous studies have indicated different factors that have an influence on employee work engagement. According to Bakker and Demerouti (2008), certain job resources such as social support from peers and supervisors,

performance feedback, skill variety, autonomy and learning opportunities are positively associated with work engagement. These job resources are instrumental to achieving work goals and therefore play a role in the employee's work engagement. Rich et al. (2010) conducted a study with the purpose of explaining the relationships between different individual characteristics and organisational factors. Their theorising undertook an attempt to understand the three antecedents of engagement, namely value congruence, perceived organisational support and core self-evaluations, and why relationships between these antecedents and job performance can be found.

According to Lin (2009), one of the situations that are critical in strengthening work engagement, is organisational trust. Because employees are more likely to engage in their work if they are drawn upon themselves to perform their roles, trust on the part of management is essential. Excessive monitoring and enforcement from management can hamper employees' tendency to engage in their work. The significance of interpersonal trust should therefore be acknowledged. Trust is a core element in the relationship between employer and employee or leader and follower and has an influence on how the employee will perceive the work environment.

In today's workplace change is prevalent. The nature of the relationship between leader and follower requires trust in order to last and remain sustainable (Storr, 2004). Trust is a concept that interests many researchers and different studies have been conducted in order to analyse the complexity of the construct (Schoorman, Mayer & Davis, 2007). These studies have indicated the important role trust plays in organisational relationships and the different effects it has on the quality of the relationships, as well as the outcomes of different organisational functions.

It is therefore likely that trust between the leader and follower will have a significant impact on how the employee will engage in the work. The leader has a strong influence on the performance of the follower and how the follower perceives the job. How the leader executes his/her leadership can have an influence on the extent to which the follower will trust the leader. Different leadership styles can lead to trust in the leader. Numerous value-based

leadership styles such as charismatic, transformational, authentic, servant and ethical leadership are linked with trust (Joseph & Winston, 2005; Schlechter & Strauss, 2008; Sendjaya & Pekerti, 2010; Conger, Kanungo & Menon, 2000; Gardner, Avolio, Luthans, May & Walumbwa, 2005; Dadhich & Bhal, 2008; Engelbrecht & Chamberlain, 2005). Value-driven leadership influences the follower's self-concept and beliefs, which, in turn, affect their motivation, attitudes and behaviours. Value-driven leaders engage in communicative processes to strengthen certain values and identities, and they suggest linkages between behaviours they expected from their followers, the values and identities and their vision for a better future (Den Hartog & Belschak, 2012).

Trust can, however, only be built through patience, commitment and honesty. One of the leadership styles that comprise these elements is ethical leadership. Ethical leadership is critical to a leader's credibility and his/her potential to exert meaningful influence (Piccolo, Greenbaum, Den Hartog, & Folger, 2010). This credibility of ethical leaders is likely to have a significant influence on trust between a leader and follower (Bellingham, 2003).

Ethical leadership is important because of the impact leaders may have on the conduct of employees in the organisation and ultimately on organisational performance. Ethical leadership therefore is likely to have a significant influence on trust between leader and follower. And because ethical leadership has an immense influence on different organisational functions, the effect on work engagement cannot be ignored.

If ethical leadership has such an influence on the trust between leader and follower, one should also consider the effect ethical leadership has on work engagement. Ethical leadership leads to valuable outcomes in itself. It has an impact on organisational effectiveness by increasing top management effectiveness, follower performance and job satisfaction (Eisenbeiß & Giessber, 2012). Because ethical leadership affects the relationships in the organisation, as well as other organisational outcomes, it is likely to also have an effect on employee work engagement.

The drive supporting ethical leadership is also an interesting phenomenon in the working environment. In order to adopt an ethical leadership style, ethical values have to be considered important. In this regard, ethical values such as altruism and integrity (Van Aswegen &

Engelbrecht, 2009) are some of the values that contribute to the motivation behind the value-based leadership styles. One ethical value that is essential for ethical leadership and trust is integrity (Palanski & Yammarino, 2011). Integrity, which refers to adherence to moral values (Fields, 2007), captures the essence of ethical values and therefore can be seen as an important driver of ethical leadership. One can also consider the impact it has on the concept of trust in that followers have confidence in leaders who are perceived as high on integrity (Mayer, Davis & Schoorman, 1995).

If one would be able to show that ethical leadership, which is motivated through integrity, and trust have a positive influence on work engagement, there should be an increasingly demand for ethical leaders in the workplace, because of the value that work engagement gains for the organisation.

1.2 The contextual antecedents and consequences of ethical leadership

Eisenbeiß and Giessber (2012) investigated various empirical studies conducted on the antecedents and consequences of ethical leadership. Through their research, they developed a contextual framework consisting of factors that affect the development and maintenance of ethical leadership. These contextual antecedents of ethical leadership refer to the societal, industry and organisational characteristics that impact ethical leadership. Societal characteristics present the contextual factors that influence people's belief about ethical leadership. These antecedents include the implementation and spirit of human rights in a society and its ethical cultural values. The proposition is that these antecedents are positively related to the development and maintenance of ethical leadership.

Industry characteristics refer to the type of industry, stakeholder networks and organisational environment in which the specific organisation operates. Eisenbeiß and Giessber (2012, p. 12) argue that "the complexity of the environment, the ethical content of the organisational mandate and the ethical interest of stakeholder network is likely to influence the development and maintenance of ethical leadership".

The intra-organisational characteristics refer to organisational structures and systems that may influence or guide ethical leadership. The factors on this level are the organisational ethical infrastructure and the leader's peer group ethical behaviour (Eisenbeiß & Giessber, 2012). All these contextual antecedents of ethical leadership manifested in three levels are depicted in Figure 1.2.

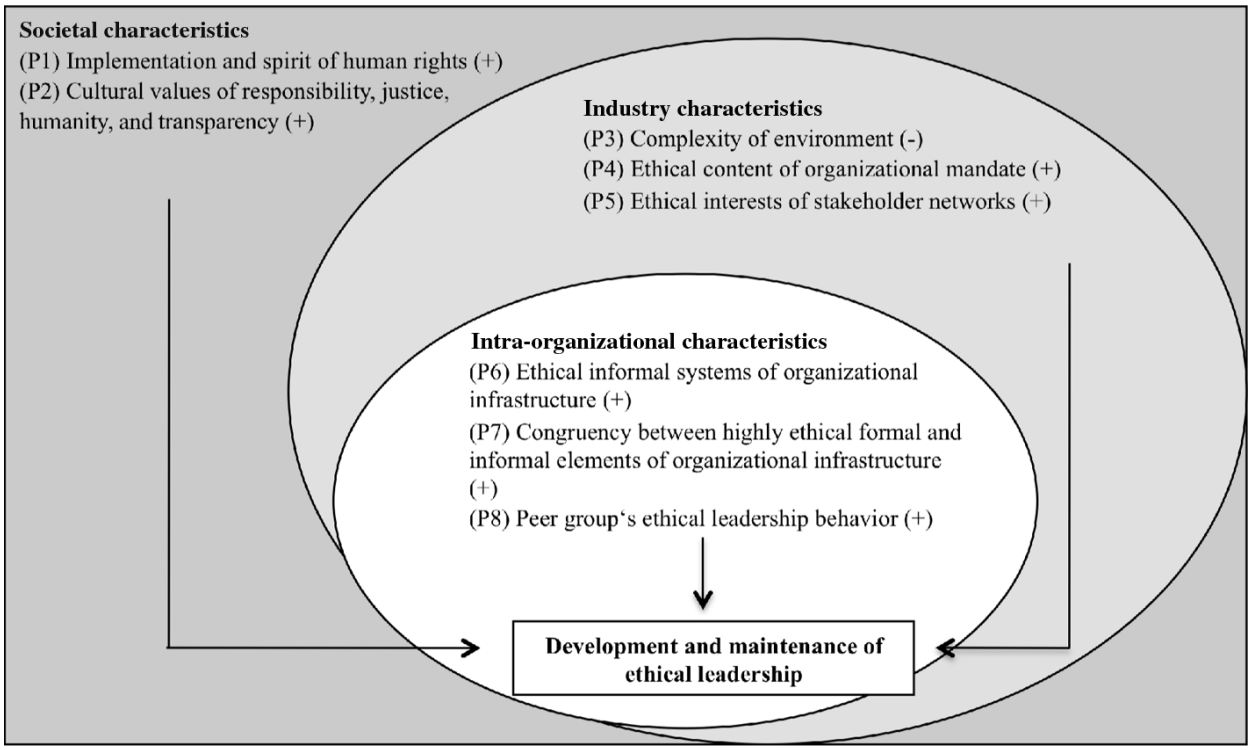

Figure 1.2 **Contextual antecedents of ethical leadership**

(Eisenbeiß & Giessber, 2012, p. 11)

Additional to the contextual factors, Eisenbeiß and Giessber (2012) also found that a large number of studies on ethical leadership deal with its consequences, particularly the influence ethical leaders have on their followers' behaviours and attitudes. The authors reported that positive relationships, as evident in recent studies, exist between ethical leadership and employee satisfaction; employee willingness to make an extra effort; employee motivation; trust; and subordinate optimism. Furthermore, it is also indicated that ethical leadership has a positive influence on employee work engagement (Den Hartog & Belschak, 2012).

1.3 Research objective

Economic pressures that are changing work processes and global competitiveness make it necessary for organisations to utilise the workforce optimally by investing in the employees and providing a productive and satisfying work environment. As previously mentioned, work engagement is the drive behind an organisation's competitiveness and success, in that an engaged employee demonstrates the willingness to put extra effort into the work and to reach optimal performance. The importance of work engagement has to be emphasised in order to encourage organisations to invest in this valuable phenomenon, as well as in the different elements that contribute to and enrich work engagement. Because the relationship between leaders and followers is so important in the company, trust and leadership are key aspects that should be considered in this case, especially when it can contribute to the presence of employee work engagement.

Ethical leadership is considered important, because, together with integrity, it promotes effective interaction between leader and follower by focusing on ethical behaviour in the workplace. According to Brown and Trevino (2006), ethical leaders are perceived as honest and trustworthy, which is necessary for healthy working relationships and may have a positive impact on work outcomes. The research objective of this study therefore was to make use of sound theoretical research and logical reasoning to analyse the influence of integrity and ethical leadership on trust and employee work engagement.

1.4 Overview of this study

Chapter 1 provides a contextual background for investigating the relationship between integrity, ethical leadership, trust and work engagement in terms of the importance of these constructs and the value it can bring to the organisation. The chapter also offers an outline of the research problem and objectives of this study.

Chapter 2 provides a comprehensive review of the literature, with the main concepts of the study being discussed in detail. Definitions and measuring instruments for work engagement,

trust, ethical leadership and integrity are elaborated on. The chapter proceeds to the hypothesised relationships between the constructs and concludes with the construction of a theoretical structural model developed on the basis of the available literature presented in the chapter.

Chapter 3 provides a detailed description of the research design, the sample and the data collection procedure. The measuring instruments for each of the variables considered in the study are defined and described. Furthermore, the statistical analyses used to analyse the data are discussed.

Chapter 4 presents the research results. It outlines the data analysis in detail, providing the results of the analyses and testing the proposed hypotheses.

In Chapter 5, the research results are interpreted and discussed. The limitations and suggestions for future research are also addressed in this chapter. Finally, managerial implications and concluding remarks are presented.

CHAPTER 2

REVIEW OF RESEARCH REGARDING THE INFLUENCE OF INTEGRITY AND ETHICAL LEADERSHIP ON TRUST AND WORK ENGAGEMENT

2.1 Introduction

Chapter 1 argued the importance of work engagement in the organisational context and presented an accurate understanding of the manner in which ethical behaviour, integrity and the manifestation of trust in the leader are interrelated for the purpose of positively influencing the employee's engagement in his/her work. This chapter provides a review of the literature that deals with the constructs focused on in this study. In this chapter, each of the four constructs will be discussed in terms of their definition and measurement. The chapter concludes by proposing the theoretical structural model by hypothesising specific causal relationships between the latent variables of integrity, ethical leadership, trust in the leader and work engagement.

2.2 The definition and measurement of work engagement

An important construct in the field of industrial and organisational psychology is work engagement. It is a construct that portrays the variation across individuals and the amount of energy and dedication they contribute to the job (Kahn, 1990). The work environment in which the South African employee finds him-/herself today consists of demanding situations and functions as a result of the increasingly competitive industry (Rothmann, 2003). Different factors contribute to the work experience of employees. They have to cope with many demands and limited resources that can often affect an employee's wellbeing. Work engagement, together with attitudes and dedication, can determine the way in which the employee manages all these resources in the work environment. This will involve how they perceive the complex demands of the work. Many writers emphasise that work engagement is a vital driver of individual attitudes, behaviours and performance (Gruman & Saks, 2011). Strong evidence also exists between the relationship of an employee's work engagement and

organisational outcomes (Simpson, 2009). It is therefore clear that work engagement will influence the wellbeing and performance of the employee, as well as the productivity of the organisation.

Different perspectives exist regarding engagement in the context of the work environment (Macey & Schneider, 2008; Saks, 2006). Simpson (2009) elaborated on four overlapping lines of research on engagement in his study. This included personal engagement (Kahn, 1990), burnout/engagement, work engagement and employee engagement. Welch (2011) allocated certain lines of research to time intervals and refers to it as evolutionary waves in the development of the concept of engagement.

According to Kahn (1990, p. 694), personal engagement refers to employees who "employ and express themselves physically, cognitively and emotionally during role performances". This concept was developed because of the earlier lack of constructs' ability (such as job involvement, organisational commitment and intrinsic motivation) to explain employees' day-to-day experiences with their work. Kahn (1990) indentified meaningfulness, safety and availability as three psychological conditions which influence personal engagement. The way in which an employee will experience tasks, roles and work interactions as meaningful will have an impact on the employee's personal engagement. In this regard, safety refers to the degree to which an employee feels safe to become engaged without the fear of negative consequences. Psychological availability refers to the employee's sense of acquiring the physical, emotional and psychological resources needed for investing in the work role (Simpson, 2009). May, Gilson and Harter (2004) developed a Likert format questionnaire to measure personal engagement. This measurement consists of a 13-item scale that builds on Kahn's (1990) three psychological conditions which influence personal engagement. The measurement demonstrated a good reliability with an alpha of 0.77 and demonstrated a significant positive relationship between all three psychological conditions and engagement (May et al., 2004).

Welch (2011) refers to Kahn's (1990) personal engagement as wave one and considers Kahn as the "academic parent of the employee engagement movement" (Welch, 2011, p. 332). This

decade, from 1990 to 1999, is characterised by the beginnings of practitioner interest in the concept and term.

The second line of research refers to the concepts of burnout and engagement, which are seen as opposite poles on a continuum. Employees can find themselves somewhere along this continuum. Leither and Maslach (cited in Simpson, 2009) defined burnout as a psychological syndrome which is characterised by exhaustion, cynicism and inefficacy. Engagement is here defined as the opposite of burnout and is characterised by high energy (opposite of exhaustion or low energy), high involvement (opposite of cynicism or low involvement) and high efficacy (opposite of inefficacy or low efficacy). This line of research, as well as the following two, fall into the second wave (2000 – 2005) and are characterised by the emergence of positive psychology which transferred the focus from negative consequences to positive drivers such as engagement (Welch, 2011).

The Maslach Burnout Inventory (MBI) was developed to measure burnout and engagement; low scores on exhaustion and cynicism, and high scores on efficacy are an indication of engagement. The MBI was developed specifically for the service professions, because burnout was originally studied as an occupational issue among people working in this profession (Storm & Rothmann, 2003). Three different versions were developed, namely the MBI-HSS (Human Service survey), the MBI-ED (Educators) and the MBI-GS (General survey) (Rothmann, 2003). The three-factor (emotional exhaustion, depersonalisation/cynicism and personal accomplishment/efficacy) structure of the MBI-HSS has been confirmed by exploratory and confirmatory analysis (Rothmann, 2003). So far, numerous studies have been undertaken on the MBI by using South African samples and satisfactory internal consistencies and factor validity have been found for all three versions (Storm & Rothmann, 2003).

The third line of research, according to Simpson (2009), is work engagement. Schaufeli, Salanova, Gonzalez-Roma and Bakker (2002, p. 74), defined work engagement as a “positive, fulfilling work-related state of mind that is characterised by vigour, dedication, and absorption”. Vigour refers to the willingness to invest efforts in one’s work and is characterised by high levels of energy and mental resistance during the process of working. Dedication is

characterised by “enthusiasm, inspiration, pride and challenge”, while absorption can be seen as “being fully concentrated and happily engrossed in one’s work” (Schaufeli & Bakker, 2004, p. 295).

Schaufeli and his colleagues therefore partly agree with Leiter and Maslach’s description of engagement, but take a different perspective. Work engagement and burnout are still seen as opposite concepts, but should be measured separately, using different instruments (Rothmann, 2003). Schaufeli et al. (2002) indicated that two dimensions of work engagement, namely vigour and dedication, are related and opposite the exhaustion and cynicism dimensions of burnout. Absorption is the third component of work engagement which is less related to the burnout dimensions.

Here it is also important to note that engaged employees are not addicted to their work. They work hard because working is pleasurable, but they can also enjoy things outside the work environment (Bakker & Demerouti, 2008).

The 17-item Utrecht Work Engagement Scale (UWES) was developed by Schaufeli et al. (2002) to measure work engagement. This instrument includes vigour, absorption and dedication as the three dimensions of work engagement. The three scales are found to be moderately to strongly related and factor validity was demonstrated through confirmatory factor analysis (Schaufeli et al., 2002). Studies on the UWES in South Africa supported the high correlations between the three dimensions and indicated that work engagement probably is a one dimensional construct. Cronbach’s alpha coefficients were also found to be acceptable acceptable (Rothmann, 2003; Naudé, 2003). A shorter 9-item version (UWES-9) in which only three items per dimension were included was also developed (Schaufeli, Bakker & Salanova, 2006).

The last line of research is employee engagement. Harter, Schmidt & Hayes (2002, p. 269) refer to employee engagement as the “individual’s involvement and satisfaction as well as enthusiasm for work”. Harter, Schmidt and Keyes (cited in Simpson, 2009) developed a model of employee engagement and refer to four antecedents necessary for engagement to take place in the workplace: a) the clarity of expectations and basic materials and equipment being

provided; b) feelings of contribution to the organisation; c) feeling a sense of belonging to something beyond oneself; and d) feeling as though there are opportunities to discuss progress and grow. The instrument that was used for Harter et al.'s employee engagement is the Gallup Workplace Audit (GWA) which focuses on the four antecedents mentioned above. It comprised 12 items that measure employee perceptions of work characteristics and one overall satisfaction item. The GWA has a Cronbach's alpha of .91, which is seen as satisfactory (Harter et al., 2002).

Welch (2011) refers to the third wave of engagement as a time that is characterised by an increased academic interest among researchers such as Saks (2006), and Macey and Schneider (2008). Saks (2006) supports the work of Kahn (1990) and includes job engagement as well as organisational engagement in the concept of employee engagement. Macey and Schneider (2008) refer to engagement as a multidimensional construct and show in their study how the concept of work engagement is used in different ways to describe psychological states, traits and behaviours.

It is important to know that certain expressions that are used to describe engagement can lead to confusion because of the closeness of the meanings of these terms and definitions. Schaufeli and Bakker (2010) indicated that they prefer the phrase "work engagement" because it refers specifically to the employee's relationship with his/her work while the phrase "employee engagement" can indicate the relationship between the employee and the organisation.

Sometimes work engagement can be confused with other known constructs such as organisational commitment and organisational citizenship behaviour (OCB) (Saks, 2006). Robinson, Perryman and Hayday (cited in Saks, 2006) stated that engagement may include some of the elements of these constructs but is not the same as either of them. The cited authors elaborated on engagement as of a two-way nature, which refers to the two-way relationship between employer and employee. Saks (2006) explains it as "bringing oneself more fully into one's work roles and devoting greater amounts of cognitive, emotional and physical resource is a very profound way for individuals to respond to an organisation's actions". Saks also refers to the social exchange theory (SET) as one of the models of work engagement. SET

argues that certain rules should be present in a relationship between employer and employee which, over time, develops into trusting and committed interactions. These rules refer to the actions of one party that will lead to a response or action by the other party (Saks, 2006). Certain desirable actions of an employer may therefore result in employee work engagement.

Although different theories exist about the phenomenon of work/employee engagement, it, in the end, comes down to the employee who is associated with the job, who is dedicated to the work and in the process also experiences personal fulfilment through his/her work.

2.3 The definition and measurement of trust

The importance of trust in leadership has been recognised by several researchers in the field of organisational and industrial psychology, as well as in other related disciplines (Bews & Uys, 2002; Burke, Sims, Lazzara & Salas, 2007; Colquitt, Scott & Lepine, 2007; Schoorman, Mayer & Davis, 2007). Trust emerged as a significant concept in organisations, as relationships became important in flat, team-orientated structures where more employees have the responsibility to make decisions. In addition, the role of interpersonal trust relationships in promoting employee wellbeing and organisational effectiveness has increasingly become a topic of interest. Especially in South Africa, organisational success seems to be dependent on mutual trust (Engelbrecht & Chamberlain, 2005; Engelbrecht & Cloete, 2000). Given its significant role in relationships within organisations, researchers and practitioners are interested in discovering the mechanisms through which trust in leadership can be improved, as well as the factors that moderate the relationship (Burke et al., 2007). Different opinions and arguments can be found in the literature about the significance of trust, the definition of trust and the variables that influence and can be influenced by trust.

Trust is a complex construct that varies in nature and in importance according to the context, people, situation and tasks involved (Connell, Ferres & Travaglione, 2003). Trust is important in every relationship where two or more human beings are in interaction with each other and can therefore be seen as a vital element of a relationship. It differs across relationships and also varies within people (Schoorman, Mayer & Davis, 2007).

Trust occurs when someone is willing to put his life or his work in the hands of someone else and believe that the other person will handle it with consideration and with his best interest in mind. It reflects the expectation that the other party will act generously and according to the first party's belief. Trust therefore refers to a "willingness to be vulnerable" (Mayer, Davis & Schoorman, 1995; Rousseau, Sitkin, Burt & Camerer, 1998). To trust someone, a person has to take the risk that the other party may not fulfil the expectation. One will also be able to trust someone when that person is perceived as trustworthy.

Mayer et al. (1995) developed a model which separates trust from trustworthiness and indicated three characteristics which are necessary for the trustee to be trustworthy. The three important factors of perceived trustworthiness are ability, benevolence and integrity. Ability refers to a "group of skills, competencies, and characteristics that enable a party to have influence within some specific domain" (Mayer et al., p. 717). A person will therefore be trusted when he/she displays ability in specific competencies that are needed in the position concerned. Benevolence refers to the leader's willingness to do good to the follower. Here there is a positive orientation towards the follower which makes trust in this relationship possible. Integrity is the third factor which represents the follower's perception that the leader adheres to a set of standards and principles that are acceptable (Mayer et al.). Mayer et al.'s model separated trust from trustworthiness. The factors of perceived trustworthiness (depicted in Figure 2.1) therefore have a strong impact on the trust between leader and follower.

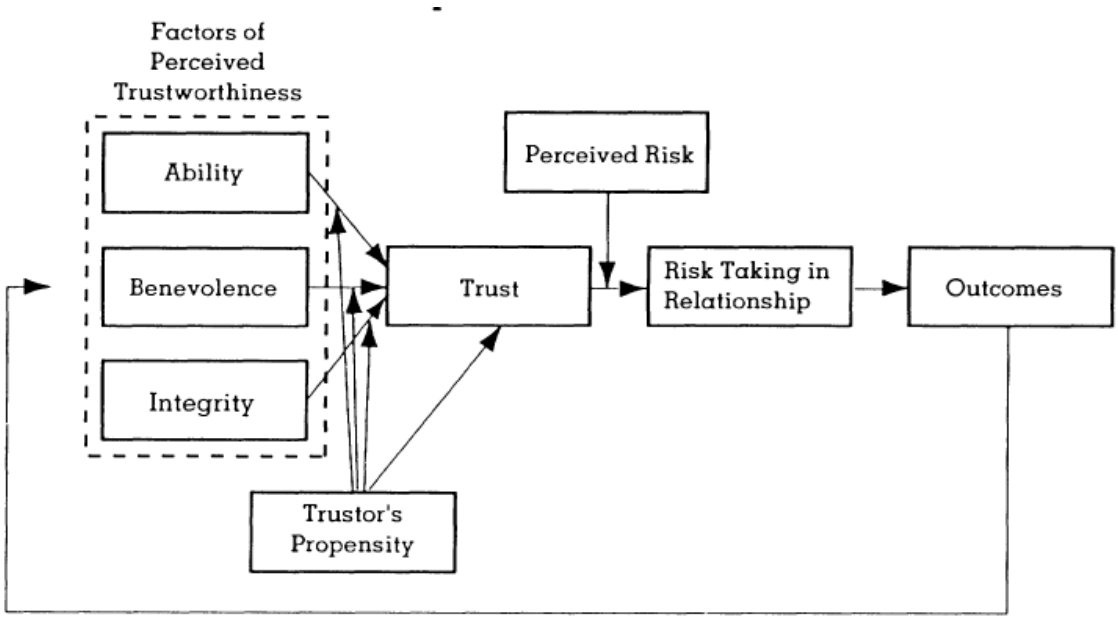

***Figure 2*.1 Model of organisational trust**

(Mayer, Davids & Schoorman, 1995, p. 715)

Engelbrecht and Cloete (2000) undertook a study in order to test and validate Mayer et al.'s (1995) model of organisational trust in the South African context and found a significant positive relationship between interpersonal trust and the factors of perceived trustworthiness.

Bews and Uys (2002) also based their work on the studies by Mayer et al. (1995). According to them, trust refers to the "willingness of the trustor (an employee), based on an evaluation process, to expose her/himself to risk when relying on the trustee (a manager/supervisor) to act in her or his interests, even when unable to monitor the actions of the trustee" (p. 22). This "evaluation process" refers to the evaluation of the trustee's trustworthiness. If the leader is therefore seen as trustworthy, the follower is likely to trust the leader. Bews and Uys (2002) identified five facilitators of trustworthiness, namely benevolence, competency, integrity, personality factors and openness. The first three are similar to Mayer et al.'s factors of trustworthiness: benevolence, ability and integrity. Personality factors refer to the Big Five personality factors and include agreeableness, conscientiousness, emotional stability, extroversion and openness to experience. The last facilitator, openness, refers to the flow of

information on a personal and functional level. According to Bews and Uys, the follower will evaluate the trustworthiness of the leader through the interrelationship of the above five facilitators. If the leader is trustworthy, there will be trust between leader and follower because of the significant relationship that ability, benevolence and integrity have with trust (Colquitt et al., 2007).

Zeffane (2010) also argued that trust and trustworthiness is not part of the same dimension. According to him, trust is an important part of the emotional relationship between the leader and the follower and a good leader should establish trustworthiness. Trustworthiness therefore precedes trust. He has identified six characteristics that are related to trustworthiness and seven separate leader behaviours that are associated with trust. Personality traits such as honesty, generosity, forgiveness, tolerance, wisdom and compassion are linked with trustworthiness

The construct of trust is more related to leadership behaviours such as competence, ambition, courage, confidence, fairness, innovativeness and discipline, which, according to Zeffane (2010), still require the basis of trustworthiness. In this way he elaborated on the two-factor approach which argues that the two concepts are not necessarily part of the same construct. Figure 2.2 is an illustration of this approach.

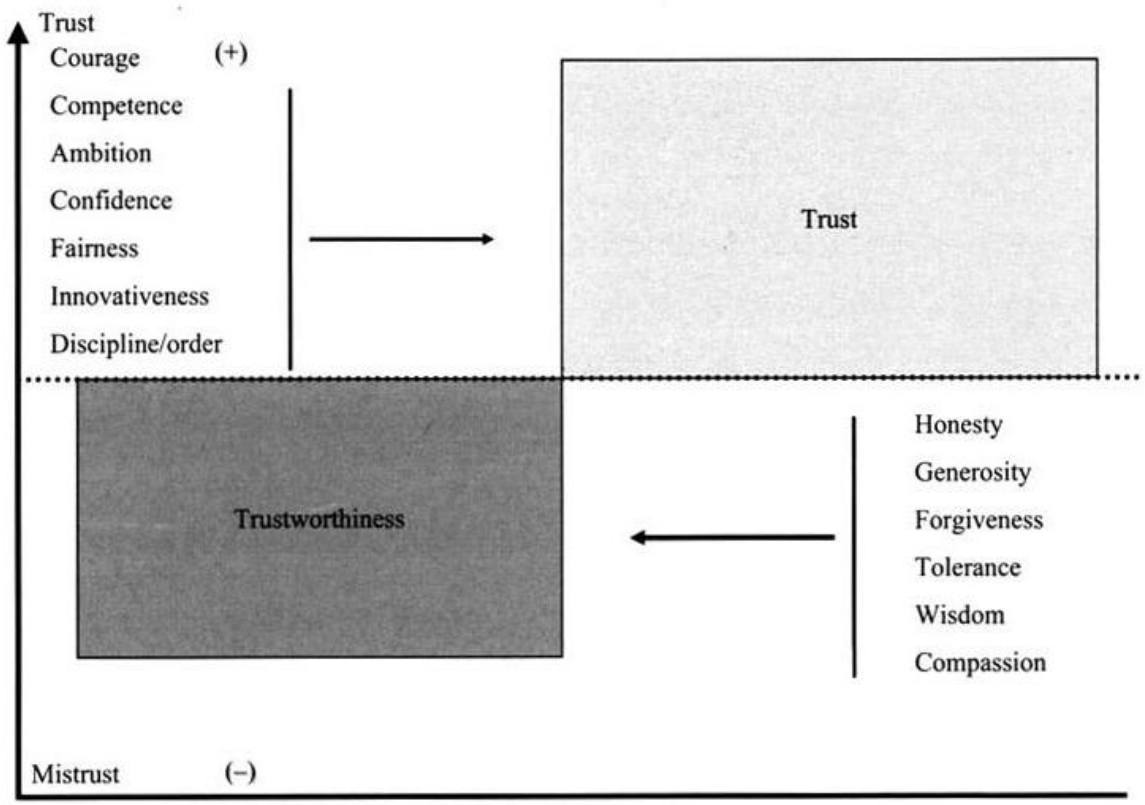

Figure 2.2 **Trust in leadership: The two-factor approach**

(Zeffane, 2010, p. 254)

Zeffane (2010) further refers to the cognitive and affective foundations of trust. Cognition-based trust refers to the decision that a follower makes to trust the leader based on definite evidence of trustworthiness. There should be good reasons for the follower to trust the leader and the follower should have sufficient knowledge of the leader to trust him or her (McAllister, 1995). Affective conditions refer to the emotional bonds between individuals where care and concern for welfare is present. Here the trusting relationship between leader and follower is seen as an emotional investment (Zeffane, 2010). This emotional link between the two parties can be a foundation for the presence of trustworthiness. Based on the work of McAllister (1995), Zeffane, argued that cognition-based trust is required for affect-based trust to develop.

According to the definition by Whitener, Brodt, Korsgaard and Werner (1998), trust involves three aspects. Trust in someone is firstly a reflection of the belief that that person will act

benevolently. Secondly, trust leads to the "willingness to be vulnerable" (Whitener et al., 1998, p. 513), because one cannot compel the person that is trusted to fulfil that expectation. Lastly, trust involves some level of dependency on the person (the trustee), so that the actions by one individual are influenced by another. This definition therefore implies that trust can be seen as the follower's attitude towards the leader. This attitude is derived from the follower's perceptions of, beliefs about and attitudes towards the leader, and is based on the observation of the leader's behaviour (Whitener et al., 1998).

Van den Akker, Heres, Lasthuizen and Six (2009, p. 105) define trust as "a psychological state comprising the positive expectation that another party will perform particular actions that are important to oneself, coupled with a willingness to accept vulnerability which may arise from the actions of that other party". These authors further indicate that the trustor's expectation of the trustee's behaviour is an important characteristic of trust. If those expectations are met, trust will increase.

As stated above, the literature contains many explanations and arguments of what trust is and the important role it plays in an organisation. Regardless of all the disciplines, certain components such as confident expectations and a willingness to be vulnerable are presented as critical elements in the majority of research studies (Rousseau et al., 1998). Various instruments have been developed and adapted in order to measure the concept of trust.

The Conditions of Trust Inventory (CTI), which was developed by Butler (1991), is often used as an instrument to measure trustworthiness and interpersonal trust (Engelbrecht & Cloete, 2000; Werbel & Henriques, 2009). This instrument consists of 10 conditions of trust which include availability, competence, consistency, discreetness, fairness, integrity, loyalty, openness, promise fulfilment, receptivity and an overall trust scale. The items for this measure were chosen through a range of confirmatory factor analyses and the factor pattern confirmed the content and construct validity of the CTI (Butler, 1991). This measurement was adapted and used in a South African study by Engelbrecht and Cloete (2000). The adapted version showed high internal consistency (α = .80 to .93). The overall trust subscale of the CTI which is used to

measure interpersonal trust indicated a high coefficient alpha of 0.93 (Engelbrecht & Cloete, 2000).

An instrument designed to operationalise the integrative model of organisational trust by Mayer et al. (1995) was developed by Schoorman, Mayer and Davis (cited in Mayer & Davis, 1999). The instrument measures the three conditions of trust (integrity, benevolence and ability), as well as trust itself. A four-item trust scale with high reliability (Cronbach's alpha of .82) was reported. Through confirmatory factor analysis it was indicated that all the factors of trust are distinct. McEvily and Tortoriello (2011, p.62) commented that these measures (trust and conditions of trust scales) are "fairly comprehensive in their inclusion of dispositional trust, trustworthiness, trust and risk-taking in relationship".

Mayer & Gavin (2005) developed a trust scale to partly measure trust in the plant manager (direct manager) and in the top management team. The scale consists of four pre-existing items which were used by Mayer and Davis (1999) and six items developed additionally. The ten items were subjected to exploratory factor analysis (EFA). Cronbach's alphas for the ten-item scale were .82 and .72 for the plant manager and top management team respectively. Five items that loaded together were retained and the Cronbach's alphas for these five items were .81 for the plant manager and .72 for the top management team. Mayer and Gavin decided to use the five-item measure for their study. Palanski and Yammarino (2011) also used this scale in their study to measure follower trust in each leader and leader trust in each follower.

McAllister (1995) focused on the cognitive and affective foundations of interpersonal trust. Cognition-based trust refers to the knowledge, evidence or reasons the follower has of the competence or reliability of the leader in order to trust him/her. Affect-based trust refers to the emotional bond between individuals. McAllister developed the Managerial Interpersonal Trust Instrument to measure affective and cognitive based trust. Exploratory factor analysis was utilised to reduce the measure to 11 strongest-loading items. The instrument therefore consists out of six cognition-based trust items and five affect-based trust items. The instrument is seen as reliable, as the Cronbach's alphas for the cognition- and affect-based measures are .91 and .89, respectively. Dadhich and Bhal (2008) utilised this instrument in their study to measure the

degree to which ethical leadership predicts affective and cognitive trust. They also found high internal consistency with Cronbach's alphas of .89 and .88 respectively.

Bews (2000) developed an 11-item instrument to measure employee trust in the supervisor. This was developed and tested in the South African context. Sound psychometric properties were reported. A high internal consistency with Cronbach's alpha of .936 was confirmed and all the items were loaded on the intended factors. This measurement was also used by Engelbrecht and Chamberlain (2005), who established uni-dimensionality and satisfactory item loadings. They reported a Cronbach's alpha of .96.

Trust can also be measured by the workplace trust survey (WTS) which was developed and validated by Ferres and Travaglione (2003). This instrument consists of three dimensions which include trust in the leader, trust in the organisation and trust between co-workers. Support for the internal reliability, construct validity and divergent/convergent validity was obtained for the WTS (Ferres & Travaglione). The instrument was also subjected to further psychometric evaluation through research in Australia and in South Africa (Ferres, Connell & Travaglione, 2004). In these studies, Cronbach's alpha coefficients ranged between .90 and .97 (trust in supervisors = .90). It has thus been found to be satisfactorily reliable (Schlechter & Strauss, 2008).

The concept of trust is important for effective relationships in the organisation. It is a complex construct and is present in a relationship consisting of caring, compassion, honesty and other positively orientated traits. It is important, however, to note that trust should also be earned through acts and behaviours. In order to be fully trustworthy, one cannot rely on the personality factors that are likely to lead to trust. The leader can comprise certain trust-related characteristics, but it is his or her displayed behaviour that should prove that a person is worthy of trust. In this way it is more likely that the follower will put trust in the leader on the basis of a perception that the leader deserves this trust.

2.4 The definition and measurement of ethical leadership

Leadership is a thoroughly researched topic in the field of industrial and organisational psychology. Researchers and practitioners acknowledge the importance of leadership in the workplace and the tremendous effects it has on different aspects of the organisation. Theories of leadership have been developed with the aim of distinguishing different leadership domains on the basis of traits and behaviours. Ethical leadership currently is a popular research topic in demand in most organisations (Brown & Trevino, 2006). Organisations have a need to recruit and develop ethical leaders to contribute to an ethical way of doing business and because of the positive effect it has on organisational performance.

Brown, Trevino and Harrison (2005, p.120) have defined ethical leadership 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". Interpersonal relationships between the leader and the follower and caring for people are significant aspects in this definition of ethical leadership. From the definition, two aspects can be distinguished. The first part concerns the moral person which refers to ethical leaders as fair and principled decision makers who are honest and trustworthy (Brown & Trevino, 2006). These leaders will behave ethically in the execution of their management responsibilities. Johnson, Shelton and Yates (2012) indicated, however, that personal morality is not enough to create an ethical vision and culture in the organisation.

This leads to the second aspect of ethical leadership: the moral manager dimension.

> Moral managers make ethics an explicit part of their leadership agenda by communicating an ethics and value message, by visibly and intentionally role modelling ethical behaviour, and by using the reward system (rewards and discipline) to hold followers accountable for ethical conduct (Brown & Trevino, 2006, p. 597).

Van den Akker, Heres, Lasthuizen and Six (2009) state that moral managers demonstrate ethical behaviour energetically and set a good example in the organisation. They also facilitate

communication about ethics and values on a continuous basis to promote ethical awareness. A moral manager is therefore not only a leader who is fair, honest and behaves ethically, but someone who will integrate ethical values into his leadership style so that his/her management strategy is focused on ethics.

Ethical leaders therefore are leaders who will behave in a way that is socially acceptable with a focus on developing ethical conduct by interacting with employees in effective ways. One can also say that ethical leaders strive to increase the effective interaction between them and the employees by engaging in these three dimensions: communication, reinforcement and decision-making.

Brown and Trevino (2006) also stated that ethical leaders are perceived as honest and trustworthy. Through the use of structured interviews, they found that ethical leaders are fair and will make decisions that are based on strong principles. Here they also refer to the care and consideration that ethical leaders display for their employees, as well as for the broader society. Ethical leaders are committed to ethical values and will behave in a way that promotes these ethical standards (Tanner, Brügger, Van Schie & Lebherz, 2010).

The Ethical Leadership Scale (ELS) was developed by Brown et al. (2005) to measure ethical leadership. The instrument is frequently used in the field of industrial and organisational psychology (Piccolo, Greenbaum, Den Hartog & Folger, 2010; Den Hartog & Belschak, 2012; Mayer, Aquino, Greenbaum & Kuenzi, 2012; Kalshoven & Boon, 2012). The scale combines different leader behaviours such as acting fairly and honestly and rewarding ethical conduct. The instrument was developed through seven different studies and systematic procedures to ensure that the measure was psychometrically sound. All the studies showed that the ELS demonstrate excellent internal consistency ($\alpha > .90$). The instrument also demonstrated high reliability and stable uni-dimensionality (Brown et al., 2005).

De Hoogh and Den Hartog (2008) distinguished three elements of ethical leadership which are similar to Brown et al.'s (2005). They also perceive ethical leaders as leaders who make principled and fair choices and structure the work environment in a just manner. Their first dimension therefore refers to the concern for morality and fairness. The second dimension of

ethical leadership is role clarification, because ethical leaders are transparent, engage in open communication and promote and reward ethical conduct among the employees. The third dimension refers to power sharing where the ethical leader involves employees in decision making and listens to their ideas (De Hoogh & Den Hartog).

These researchers also developed a questionnaire to measure ethical leadership in top management teams. However, this questionnaire had different limitations, such as items of multiple components, unclear phrasing and a mixing of positively and negatively worded items which led to confusion (Yukl, Mahsud, Hassan & Prussia, 2011). Kalshoven, Den Hartog & De Hoogh, (2011) conducted follow-up research which resulted in the Ethical Leadership at Work Questionnaire (ELW). The ELW consists of seven dimensions, namely fairness, power sharing, role clarification, people orientation, integrity, ethical guidance and concern for sustainability. The first three dimensions refer to the work of De Hoog and Den Hartog (2008), which was mentioned previously. Kalshoven et al. (2011) stated that these dimensions also reflect the work of Brown et al. (2005).

The ELW shows good variability and high reliability on all scales with Cronbach's alphas above .80 (Kalshoven et al., 2011). Kalshoven et al. also investigated the correlations between the ELW and the ELS and found significant and positive correlations on all seven scales of the ELW. The ELS and ELW therefore measure similar constructs, which supports the construct validity of the ELW.

Den Hartog and De Hoogh (2009) developed two ethical leader behaviour scales with the items based on the work of Den Hartog (cited in Den Hartog & De Hoogh, 2009). The first scale measures leaders' empowering behaviour and consists of fourteen items. Seven items measure fairness and integrity. Cronbach's alphas were .95 and .92 respectively. Confirmatory factor analysis was used to confirm the underlying factor structure of the two leadership scales (Den Hartog & De Hoogh).

Bass and Steidlmeier (cited in Spangenberg & Theron, 2005) proposed three pillars of ethical leadership. These are the moral character of the leader and the concern for self and others; embedded ethical values in the leader's vision; and the morality of the choices and actions of

leaders and their followers. It is clear that ethical leaders strive to contribute positively to the wellbeing of the organisation and the employees by committing to moral principles in every aspect of their work. This is possible through acting as a role model, creating an ethical culture and by facilitating trust in the organisation (Jose & Thibodeaux, 1999).

Spangenberg and Theron (2005) emphasised the ethical vision of ethical leadership. They stated that ethical leadership involves the "creation and sharing of an ethical vision"; the preparing of the organisation for implementing the vision; and the actual implementation of the vision. Spangenberg and Theron developed the Ethical Leadership Inventory (ELI). They used the structure of the Leadership Behavioural Inventory (LBI) as a basis for the development of the ELI. The Leadership Behavioural Inventory is based on the process model which comprises the creation and sharing of an ethical vision; preparing the leader, followers and organisation for implementing the vision; and the actual implementation process. The ELI interprets leadership as "a complex, continuous process expressing itself in an extensive array of inter-dependent behavioural actions" (Spangenberg & Theron, 2005, p. 16).

The ELI consists of 19 latent leadership dimensions which are used to assess the ethics of middle, senior and executive managers in public, private and non-profit organisations (Spangenberg & Theron, 2005). The ELI contains sound psychometric properties with eighteen of the subscales indicating Cronbach's alpha values higher than .80 and one subscale with a value of .79. The relatively high values that are indicated by Cronbach's alpha are regarded as satisfactory (Spangenberg & Theron, 2005). The ELI can therefore be regarded as a reliable instrument.

Yukl et al. (2011) investigated existing instruments that attempt to measure ethical leadership. They found that honesty and integrity; behaviour focused on the communication of ethical standards; "fairness in decisions and the distribution of rewards"; and behaviour that demonstrates "kindness, compassion and concern for the needs and feelings of others" are the main topics in the research of ethical leadership (Yukl et al., 2011, p. 3). They developed and tested the Ethical Leadership Questionnaire (ELQ) in order to provide a more useful and valid measure. The questionnaire consists of 15 items which describe numerous aspects of ethical

leadership. Some of the items have been adapted from other ethical leadership instruments (Yukl et al., 2011). The ELQ has high reliability and discriminant validity was assessed and confirmed through exploratory and confirmatory factor analyses. Evidence for criterion-related validity was provided through regression analyses (Yukl et al.).

It is regarded highly that ethical leadership matters. When a leader exhibits ethical behaviour and uses appropriate rewards and punishments to ensure suitable behaviour among the employees in the organisation, unethical behaviour, as well as conflict between co-workers, is less likely to occur (Mayer et al., 2012).

2.5 The definition and measurement of integrity

Integrity is a complex construct and difficult to define. The literature outlines different perspectives of integrity which indicates that integrity cannot be encapsulated in one single definition (Six, De Bakker & Huberts, 2007). Broadly speaking, there are two perspectives. Integrity firstly is mostly described as personal consistency. It refers to consistency in what a person thinks, says and does. This is also referred to as the wholeness perspective (Six et al.). The problem with his definition is that not all people with personal consistency are people with integrity, because integrity contains a considerable aspect of goodness (Koehn, 2005). This means that a person may have personal consistency even though not displaying good or moral behaviour.

The second important definition thus is that integrity can be perceived as a concept that complies with moral norms or expectations (Koehn, 2005). This perspective therefore adds a moral component to the concept of integrity. Koehn also pointed out a problem with this definition: compliance with moral rules may lead to people only conforming to the social standards of the group, which does not necessarily make them people of integrity.

Palanski and Yammarino (2007) classified all the different perspectives of integrity into five categories which also include the above-mentioned approaches: integrity as wholeness; integrity as consistency in words and actions; integrity as consistency in adversity; integrity as being true to oneself; integrity as moral or ethical behaviour.

Integrity as wholeness refers to integrity which is part of a person's character. Worden (2003, p. 34) refers to integrity as "an integrated self in line with one's convictions, rather than being torn apart by conflicts". Integrity is therefore not only a specific characteristic, but can be seen as a description of the overall person.

Integrity as consistency in words and actions refers to a consistency with social behaviours (Palanski & Yammarino, 2007). What the person says matches what the person does. Worden (2003) refers to this as the consistency between word and deed, in line with a constant set of principles or commitments.

Integrity as consistency in adversity refers to the adversity, challenge or temptation that has to be present for the person to display integrity. Worden (2003, p.34) states that "the hallmark of integrity is an acted out commitment to principled behaviour in the face of adversity or temptation at great cost of oneself". In this challenging situation, the person will have to make a decision and will therefore choose a certain action or behaviour on the basis of integrity (Palanski & Yammarino, 2007). According to this perspective, a challenging situation is necessary for the behaviour of integrity to be present.

Integrity as being true to oneself refers to acting in accordance with one's own conscience. This dimension of integrity can also be linked to authenticity, whereby a person owns his/her personal experiences and behaves accordingly (Palanski & Yammarino, 2007).

The last dimension refers to integrity as moral ethical behaviour. It refers to integrity that is associated with ethical and moral behaviour and doing what is acceptable (Palanski & Yammarino, 2007). The moral component is therefore important in this perspective.

For the purpose of this study, it is important to state that integrity refers to someone with personal consistency whose behaviour speaks of acts of goodness and moral standards (Six et al., 2007).

Barnard, Schurink and De Beer (2008) developed a conceptual framework of integrity and from their data identified categories that were clustered together to form ten competencies of integrity. These competencies include self-motivation and drive; moral courage and

assertiveness; honesty; consistency; commitment; diligence; self-discipline; responsibility; trustworthiness; and fairness. Barnard et al. (2008, p. 46) further stated that "people with a high integrity can be described as people who have and live according to a core set of moral principles" and that these people will "stand firm on their values, beliefs and principles".

Simons (2002, p. 19) refers to behavioural integrity in his research and defines it as "the perceived pattern of alignment between an actor's words and deeds". Behavioural integrity therefore involves the follower's perception of their leaders' pattern of word-deed alignment. Simons, Friedman, Lui and Parks (2007) developed and validated an eight-item instrument in order to measure followers' perception of their manager's integrity. The items were measured on a five-point Likert-type scale (1 = strongly disagree, 5 = strongly agree). Evidence of scale reliability was demonstrated by the Cronbach's alpha = .87 and confirmatory factor analysis was used to ensure that all scales measured different concepts (Simons et al.). Sample statements of this instrument include, "There is a match between my manager's words and actions", "My manager does what he/she says he/she will do", and "When my manager promises something, I can be certain that it will happen", which comprise the essence of integrity. Palanski and Yamarino (2011) also used this integrity scale developed by Simons et al. and found high internal consistency (α = .98).

Earlier, Craig and Gustafson (1998) had developed the Perceived Leader Integrity Scale (PLIS) to measure integrity. According to them, the purpose of this measurement is to generalise so that it will be applicable to a wide range of organisational settings; for this, it uses items that evaluate leader integrity that can be observed by the followers. The measurement comprises 31 items that describe different types of unethical behaviour. Items are presented in the form of phrases such as "Would lie to me" or "Lacks high morals" and a four-point Likert scale was used (McCann & Holt, 2008).

Cronbach's alpha for the PLIS is .97, which indicates high internal consistency. Exploratory factor analysis was used and it appeared that the instrument is uni-dimensional. Yukl et al. (2011), however, stated the fact that the lack of positively worded items is one limitation of this measurement.

Butler's (1991) Conditions of Trust Inventory includes a scale that can also be used to measure integrity. It is a four-item scale that forms part of 10 conditions of trust. Van Aswegen and Engelbrecht (2009) used the items from three of these conditions, namely honesty, consistency and promise fulfilment, to form a 12-item integrity scale. Scheps (cited in Van Aswegen & Engelbrecht, 2009) reported high internal consistency for this 12-item integrity scale ($\alpha = .93$).

Instruments to measure the three factors of trustworthiness (ability, benevolence and integrity) were also developed by Schoorman, Mayer and Davis (cited in Mayer & Davis, 1999). A thirteen-item integrity scale was included and high reliability (Cronbach's alpha of .96) was reported. Through confirmatory factor analysis, it was indicated that all the factors of trust were distinct. Mayer and Davis (1999) thereupon refined these scales and designed a six-item integrity scale. Mayer and Gavin (2005) also studied the factors of trustworthiness and measured ability, benevolence and integrity using these refined scales. Cronbach's alpha of .89 was confirmed.

The role of integrity in the organisational context signifies the importance of the alignment of words and deeds of leaders. Integrity has a considerable impact on employment decisions in the organisational context (Barnard et al., 2008). In an organisation where interactions between employees are unavoidable, the importance and promotion of this phenomenon cannot be overlooked.

2.6 The relationship between trust and work engagement

As previously indicated, work engagement is the phenomenon that is present when an employee is fully committed to the work through focused energy and a "positive fulfilling, work related state of mind" (Schaufeli et al., 2002, p. 74). Work engagement therefore is an indication that the employee is intrigued by the job and has a true willingness to contribute to the organisation's success (Albrecht, 2010).

Rousseau et al. (1998, p. 395) view trust as "a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behaviour of another". When an employee trusts the leader he/she therefore has the expectation that the

leader will behave in a way that is favourable and acceptable to the employee and that the employee can entrust his/her work-life to the control of the leader.

When employees trust their leaders, they also assume the assurance that their leaders are fair in their behaviour and decisions. Perceived fairness is therefore an important part of the trust relationship between leader and follower. This fairness can be divided into distributive and procedural fairness. Distributive fairness refers to the employee's perception of the fairness of the outcomes and treatment of their effort. Trust in the leader will therefore be affected by comparison with the treatment and outcomes of other employees (Saunders, 2011). When the employee perceives the leader as fair in the distribution of outcomes, trust in the leader will increase. Employees will be more willing to engage in their work when they are certain of the organisation's sense of the relationship between effort and the outcome (Albrecht, 2010).

Procedural justice refers to the employee's perception of the fairness of the procedures and processes of the organisation. If the employee believes that everything in the organisation is done in a fair manner, trust in the leader will increase. Albrecht (2010) proposes that employees will engage in their work when the systems in the organisation are perceived as trustworthy, predictable and sensible. Work engagement will therefore increase when the employee trusts the leader to be fair in the distribution of outcomes and in systematic procedures.

In a study that was done on the effect that downsizing had on trust in the organisation, it was found that employees who experience an increase in trust also experience an increase in work engagement. The process that developed trust therefore contributed to higher levels of work engagement (Buckley, 2011). This indicates a clear relationship between trust and engagement. If an employee trusts the leader, there will be an atmosphere of trust in the organisation and the employee will be more willing to engage in the job.

Wong, Spence Laschinger and Cummings (2010) through their study confirmed that trust has a direct positive effect on work engagement ($\beta = 0.19$, $p < 0.001$). They indicated that increased trust includes the free exchange of knowledge, ideas and information and that this trust will lead to a climate in which employees are engaged in their work. Trust in leaders is critical for

enhancing positive employee behaviour and attitudes in the workplace (Yang & Mossholder, 2010). It can therefore be hypothesised that an employee's trust in the leader has a positive influence on employee work engagement.

2.7 The relationship between ethical leadership and work engagement

Work engagement refers to a "positive, fulfilling, work-related state of mind that is characterised by vigour, dedication and absorption" (Schaufeli & Bakker, 2004, p. 295). An employee will experience work engagement when he or she is committed to the work, enjoys the work and will go to extra trouble for the work. Employees therefore experience high levels of energy while doing the work, are willing to invest in their jobs and have pride in their work (Schaufeli & Bakker). This means that employees are dedicated and happy in their jobs and experience intrinsic enjoyment through their work.

Work engagement is possible when the employee can relate to the job and when the workplace and job contribute to his or her positive wellbeing. Macey, Schneider, Barbera and Young, (2009) propose that work engagement results when employees have the capacity, the motivation, the freedom and the knowledge to engage. To be an ethical leader one has to consider the employees' physical, emotional, intellectual and spiritual needs (Bellingham, 2003). Ethical leadership therefore presents different characteristics which can be associated with work engagement in terms of Macey et al.'s (2009) line of reasoning.

Employees firstly have the capacity to engage when organisations provide the necessary information and training opportunities to do the job well, as well as a supporting structure which contributes to the employee's ability to perform.

Ethical leaders provide certain job resources for the employees which assist them in the execution of their work. These resources can also include effective performance feedback and necessary information to do the job. According to Bakker and Demerouti (2008), these resources are positively associated with work engagement because they provide employees with the necessary assistance to be exceptional in their jobs.

Secondly, employees will be motivated to engage in their work when they are treated with respect and are valued by the organisation. It is also important that the job should be meaningful and propose goals that present a challenge to the employee. Under these circumstances the employee is more likely to produce energy to engage in the job that is intrinsically interesting (Macey et al., 2009). The employee's motivation to perform in the job and to be interested in the intrinsic value of the job is therefore necessary for work engagement.

According to Kim and Brymer (2011), the behaviour of ethical leaders leads to the follower's work satisfaction because they are treated fairly, which leads to positive follower attitudes. When the employee knows the goal of the job and how it fits into the organisation's plan; experiences care and support; and has the knowledge of how to do the work in an efficient way, it is most likely that the employee will experience job satisfaction. Ethical behaviour by leaders will therefore lead to high job satisfaction for employees. Highly satisfied employees will be more willing to apply extra effort because they are more committed to delivering high quality work (Kim & Brymer, 2011). This means that they will be motivated and have the knowledge to engage in their work.

Thirdly, when an employee has the freedom to make decisions and take action without consulting the supervisor all the time, it can result in work engagement. To be proactive and innovative in the job without the fear of doing something wrong or to be punished, will increase the degree of work engagement. Freedom in one's work is a result of the mutual trust that exists in the organisation (Macey et al., 2009). Leaders should therefore be able to show confidence in the follower. Under such circumstances, leaders will be more willing to give the employee freedom to make decisions and to trust that these decisions are made with the organisation's best interest in mind.

Bellingham (2003) states that ethical leaders want to inspire people through their vision; they want to empower employees through training and support; and they want to provide freedom to their employees to show initiative through responsibility and authority. This provides a clear indication that ethical leaders provide the freedom for employees to engage in their work.

Lastly, as indicated by Macey et al. (2009), employees will engage in their work when they know what the strategic priorities of the organisation are and how they contribute to the company's goals through their work. It will also help if there is alignment between the goals of the organisation and the employee's goal. The employee will understand the bigger picture and know how the role he/she is playing fits into the organisation.

Ethical leaders care about their followers and engage in frequent communication with their employees (Brown & Trevino, 2006). These leaders take their followers into consideration and through frequent communication make it clear what the organisation's goals are and what is expected from them. The ethical leader therefore through frequent communication ensures that there is no job ambiguity.

In addition, ethical leaders make emotional investments in their relationships with employees. They express genuine care and concern for the welfare of their subordinates and know the value that these truthful relationships offer (Dadhich & Bhal, 2008). This presents a support structure for employees; they have the assurance that their leaders care about them and that they have the necessary support in their jobs. The employees will therefore engage in their work because of the work atmosphere where they are guaranteed that their leaders will behave with employees' best interests in mind.

Tims, Bakker and Xanthopoulou (2011) found that there is a positive relationship between transformational leadership and the follower's daily work engagement ($t = 2.33$, $p < 0.05$). They further refer to transformational leadership as practised by a leader with "individual consideration and support" for the employee (Tims et al., p.122). This can also be associated with the definition of ethical leadership because it is value-based leadership, which has an influence on the follower's work engagement. Wong, Spence, Laschinger and Cummings (2010) indicated the relationship between authentic leadership and engagement and emphasised how the strength of the leader-follower relationship, as well as the social identification with the job, can influence work engagement in a significant way.

Through regression analysis, Den Hartog and Belschak (2012) confirmed that ethical leadership has a significantly positive relationship with work engagement ($\beta = 0.54$; $p < 0.01$). They argue

that the "emphasis on shared moral values and the honesty, caring and fairness modelled by ethical leaders will foster employees' work engagement" (Den Hartog & Belschak, 2012, p. 35). They found that followers tend to report higher engagement in their work, when they perceive their leaders as acting ethically.

It can therefore be hypothesized that ethical leadership has a significant influence on the employee's work engagement.

2.8 The relationship between ethical leadership and trust in the leader

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 (Rousseau et al., 1998). An employee will trust a leader if the leader is trustworthy and if the leader displays characteristics of trustworthiness such as honesty, kindness, generosity and acceptance (Zeffane, 2010). Mayer et al. (1995) proposed that the benevolence of a leader is needed for trust to be present in the relationship. A benevolent leader will be seen as more trustworthy when he/she shows genuine affection and care toward the employee. This authentic concern for the employee will produce a motivated worker that trusts the leader with his own interests (Burke et al., 2007).

Ethical leadership is a value-based leadership style which comprises different characteristics that are evident in the trust relationship between leader and follower. According to Brown and Trevino (2006, p. 597), ethical leaders are characterised as "honest, caring and principled individuals who make fair and balanced decisions". They further indicate that such leaders communicate ethics to their employees and set clear standards regarding how things should be done in the organisation. Ethical leadership is therefore not only about fostering ethical behaviours but is focused on employees' moral awareness and moral self-actualisation. Ethical leaders also have the courage to transform their moral intentions into ethical behaviours, which can be referred to as a high behavioural consistency (Zhu, May & Avolio, 2004). When employees perceive this consistency, trust in the leader will result.

Ethical leadership acquires characteristics that are needed for the necessary presence of trust in the relationship between leader and follower. Ethical leadership seeks the fulfilment of self-

interest but involves employees in decision-making procedures and facilitates well-being and potential growth of the employees (Zhu et al., 2004). Employees will be inclined to trust ethical leaders because of their credibility and trustworthy behaviour. Dadhich and Bhal (2008) found that affective trust (the emotional bond between individuals) and cognitive trust (where trust is required in cases of imperfect knowledge) are predicted by ethical leadership. Van der Akker et al. (2009) found that ethical leadership is significantly related to the level of trust the follower has in the leader.

Johnson et al. (2012) measured the relationship between ethical leadership and organisational trust and reported a significant positive relationship ($r = .796$; $p < 0.01$). They found that people reporting to ethical leaders are more willing to be vulnerable in their interactions with others in the organisation. Although this refers to organisational trust, trust in the leader can also be included because of the important role leaders play in organisational interactions.

Wong et al. (2010) found that authentic leadership has a significant positive direct effect on trust ($\beta = 0.43$, $p < 0.001$). This authentic leadership is displayed by leaders who strive to relate to their followers with openness and truthfulness. These characteristic are also part of ethical leadership, which indicates the possible positive influence of ethical leadership on trust.

When employees exhibit the willingness to trust the leader and when an ethical leader establishes a basis of trust, the employee will also be inclined to trust the work environment and the organisation. This happens because of the ethical leader who sets the tone of atmosphere and the quality of work in the organisation.

It can therefore be hypothesised that ethical leadership leads to employee trust in the leader.

2.9 The relationship between integrity and trust

It is clear from the relationship between ethical leadership and trust that integrity also plays a major role in the concept of trust. Mayer et al. (1995) stated it clearly when they said that, in order to be trustworthy, integrity has to be present. They said that “the relationship between integrity and trust involves the trustor’s perception that the trustee adheres to a set of

principles that the trustor finds acceptable" (p. 719). A leader with integrity will therefore be consistent in his/her behaviours. If these behaviours are based on principles and values that are acceptable to the follower, the follower will be likely to trust the leader and the leader's behaviour in the future. Mayer and Gavin (2005) also studied Mayer et al.'s model of trust (1995) and reported integrity as significantly and positively related to trust in the plant manager ($r = 0.76$; $p < 0.01$) and in the top management team ($r = 0.71$; $p < 0.01$).

According to Lind (cited in Colquitt et al., 2007), integrity offers a very logical reason to trust someone. A feeling of fairness or moral character provides a sort of predictability that can help individuals cope with uncertainty. A leader with integrity will therefore be perceived as trustworthy, which will lead to trust in that leader. Simons (cited in Palanski & Yammarino, 2011) also clearly stated that a leader's integrity will provide followers with a sense of certainty regarding the behaviour of the leader. With this sense of certainty, a follower is more likely to trust the leader.

Burke et al. (2007) also refer to the link between leader integrity to the trust the followers have in their leaders. "If followers believe their leaders to have a great deal of integrity, they will be more inclined to engage in riskier behaviour" Burke et al. (2007, p. 617). Palanski and Yammarino (2011) also proposed and found that leader behavioural integrity has a positive impact on followers' trust in the leader ($\beta = 0.33$, $p < 0.05$).

Kannan-Narasimhan and Lawrence (2012) found that an increase in an individual's perception of the leader's behavioural integrity will result in an increase of trust in that leader ($\beta = 0.43$, $p < 0.01$). Simons (2002, p. 22), who did major work in the field of behavioural integrity, also proposes that "increases or decreases in behavioural integrity will increase or decrease trust, respectively". He further indicates that behavioural integrity is a key antecedent to trust. Engelbrecht and Cloete (2000) also reported a high and significant positive relationship between interpersonal trust and integrity ($r = 0.92$; $p < 0.01$).

Yukl (2010, p. 331) refers to integrity as "honesty and consistency between a person's espoused values and behaviour". Van Aswegen and Engelbrecht (2009) elaborated on this definition and

see a person with integrity as honest and trustworthy. It can therefore be hypothesised that leader integrity has a significant positive influence on trust in the leader.

2.10 The relationship between integrity and ethical leadership

Ethical leadership is motivated by moral values. One of the important moral values is integrity. Six et al. (2007, p. 186) define integrity as "acting in accordance with relevant moral values and norms". Leaders with integrity always encourage open and honest communication while valuing individual viewpoints (Parry & Proctor-Thomson, 2002).

According to Parry and Proctor-Thomson, value-based leadership such as transformational leadership is consistent with moral values. Engelbrecht, Van Aswegen and Theron (2005) reported that integrity is a significant predictor of transformational leadership ($t = 6.5$; $p \leq 0.001$). They further state that integrity is a core value of leadership and refer to a leader who is committed to ethical principles as someone who possess integrity. Toor and Ofori (2009) confirmed that ethical leadership is significantly and positively related with transformational leadership ($r = 0.58$, $p < 0.01$), which leads to the assumption that integrity has a positive effect on ethical leadership.

Ethical leadership is based on moral values. Brown et al. (2005) propose that the combination of integrity, ethical standards and fair treatment of employees are the foundation of ethical leadership. Integrity can therefore be described as a component of ethical leadership, but the concept of integrity is such a comprehensive construct that it in itself also has an important impact on ethical leadership. Integrity is seen as a value, whereas ethical leadership is a behaviour in the process of creating an ethical climate. The focus of ethical leadership is therefore on the management of ethics.

If a person is rated highly on integrity, he/she will show personal consistency in behaviour which is based on moral values (Palanski & Yammarino, 2007). This characteristic of integrity will be a significant drive for the person to engage in ethical behaviour and ethical leadership in an attempt to influence followers.

Van Aswegen and Engelbrecht (2009) noted that leaders with integrity "always encourage open and honest communication" and that they "value the individual's viewpoint and the feedback that results from shared decision making" (p. 223). Brown et al.'s (2005, p. 120) definition of ethical leadership emphasises the importance of the relationship between leader and follower and the promotion of "two-way communication, reinforcement and decision-making".

According to Palanski and Yammarino (2011), different theories of leadership refer to a conceptual link between integrity and leadership. Den Hartog and Belschak (2012) also stated that ethical leaders integrate integrity, trust and shared values into their own identity. It is evident that ethical leaders are leaders with integrity and it can therefore be hypothesised that integrity has a significantly positive effect on ethical leadership.

2.11 Proposed conceptual structural model

Based on the literature review presented above, a structural model was formulated showing the postulated relationships between integrity, ethical leadership, trust and work engagement. This structural model, which is illustrated in Figure 2.5, reflects the linkages between the different constructs.

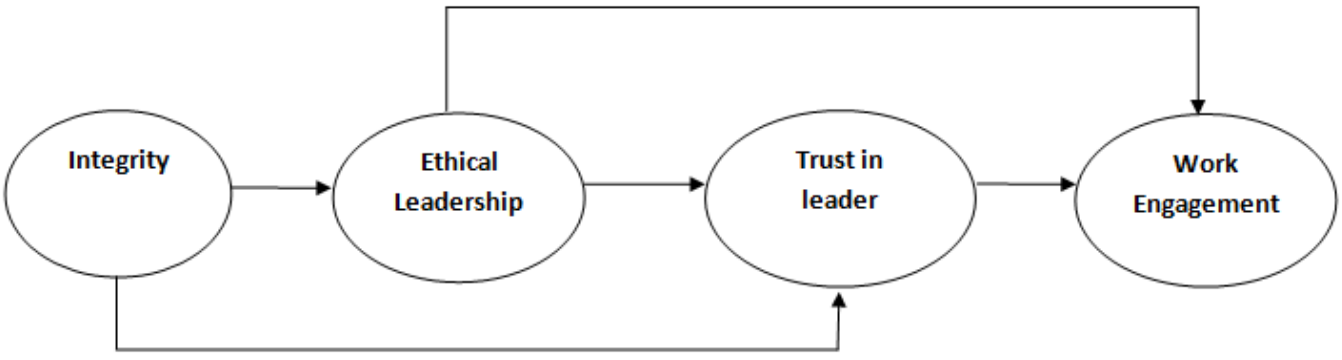

Figure 2.5 **The conceptual structural model representing the relationship between integrity, ethical leadership, trust in the leader and work engagement**

2.12 Summary

This chapter presented a theoretical and empirical review of integrity, ethical leadership, trust in the leader and work engagement. The focus was on the various definitions found in the literature and the instruments that were used to measure these constructs. Possible hypotheses were developed from the research conducted on these constructs and based on the relationships derived. The following chapter focuses on the research methodology used to empirically measure the credibility of the proposed hypotheses.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

After an in-depth study on the respective constructs that were highlighted in the literature overview (Chapter 2), relationships between integrity, ethical leadership, trust and work engagement were suggested. These relationships are based on indirect and direct associations between these concepts outlined in the literature. The theoretical argument presented in the literature review led to a conceptual model with structural relationships between the latent variables and is depicted in Figure 2.5. In order to determine the specific nature of these relationships, it was necessary to fit the conceptual structural model and to empirically investigate the hypotheses. Suitable methods to analyse and explore the data were also necessary for accurate inferences. During the scientific method of investigation careful reflection is required at various points in the process of analysing the data. It is also essential to take appropriate steps where the soundness of the explanations is potentially threatened in order to maximise the possibility of valid findings (Babbie & Mouton, 2001).

This chapter presents the research design, method of sampling, measuring instruments and statistical analysis procedure that were used to establish the model fit and the strength and paths of the envisaged hypotheses.

3.2 Research design

The conceptual structural model of this study (Figure 2.5) represents and hypothesizes specific structural relationships between the latent variables in the model. To empirically test the merit of structural relationships requires a plan or strategy that will guide the empirical evidence to test the operational hypotheses.

This plan or strategy refers to the research design (Kerlinger & Lee, 2000). The research design is a plan, guideline or blueprint of how research is to be performed (Babbie & Mouton, 2001). The research problem and the type of evidence that is required to address the problem

determine the design that will best suit the intended research. The function of the research design is to attempt to ensure empirical evidence that can be interpreted explicitly for or against the hypothesis being tested.

An ex post facto correlational research design was used in this study to test the substantive research hypotheses. With the ex post facto correlational design, the researcher acquires measures on the observed variables and calculates the observed covariance matrix (Kerlinger & Lee, 2000). The ex post facto correlational design can be used where the independent and the dependent variables are only observed by individuals to confirm the degree to which they co-vary. This design was used in this structural model because the latent variables could not be manipulated. Estimates for the structural and measurement model parameters were obtained in a repetitive manner with the objective of reproducing the observed covariance matrix as closely as possible (Diamantopoulos & Siguaw, 2000).

3.3 Sampling

There are two types of method that can be utilised for sampling. The first is probability sampling. Babbie and Mouton (2001) refer to probability sampling as “the selection of a random sample from a list containing the names of everyone in the population you are interested in studying”. This is the most accurate and most used sampling method, especially for research containing large, representative samples, but is not always practical or attainable. Non-probability sampling therefore sometimes is the most appropriate sampling method to use as an alternative to probability sampling.

This study also made use of non-probability convenience sampling as a way of obtaining the appropriate sample.

3.3.1 The data collection procedure

The research hypotheses described in Chapter 2 were empirically tested using a sample size of 204 respondents. The sample consisted of employees operating within various organisations in South Africa. In order to measure the influence of ethical leadership on trust and work

engagement, data concerning managers of South African companies were analysed by means of appropriate measuring instruments. To ensure the validity of the study, it was decided to include organisations with more than 30 employees in the research, as well as an overall sample of at least 200 employees.

A questionnaire designed to gather data was distributed through the internet and was sent to the identified participants. Participants were required to accept the conditions specified in the instructions of the online version. Confidentially was maintained by assuring participants that their responses would be treated as anonymous and no names would be revealed in the study. Participants were also guaranteed that the study envisaged no potential risks or discomfort and that responses would not be revealed to managers, but would be stored directly on the Stellenbosch University database.

Respondents evaluated their own work engagement and the trust they have in their direct manager. They also assessed their manager's perceived integrity and ethical leadership. The raw data was generated and imported into a Microsoft Excel database. The data were then used as input for the statistical analysis programmes. Kelloway (1998) has stated that a sample size of 200 observations is suitable for most SEM submissions, but that it also depends on the amount of parameters to be estimated.

3.3.2 The demographic profile of the sample

The overall sample consisted of 81 males (37.9%) and 123 females (60.3%). The sample presented an average age of 37.53, which indicates that the majority of respondents were aged between 31 and 40. The race distribution of the sample was as follows: African (5.4%), Coloured (2%), Indian (34.8%) and White (57.8%). The sample was also compiled from respondents from different companies and industries. The majority of respondents came from middle level management (58.3%) and from the retail industry (80.4%). The manufacturing and financial industries were also represented in the sample but in smaller quantities. These descriptive statistics are presented in Tables 3.1 and 3.2.

Table 3.1

Demographic variables

DEMOGRAPHIC VARIABLES	N	% IN SAMPLE
Gender		
Male	81	39.7
Female	123	60.3
Age		
Below 20	0	0
21 – 30	56	27.5
31 – 40	65	31.9
41 – 50	62	30.4
Above 50	20	9.8
Race distribution		
Black	11	5.4
Coloured	4	2
Indian	71	34.8
White	118	57.8
Job level		
Non-managerial	25	12.3
Lower level management (First line manager)	38	18.6
Middle level management	119	58.3
Upper level management (Senior manager)	22	10.8

Table 3.2

Breakdown according to Industry

INDUSTRY	N	% IN SAMPLE
Manufacturing	20	9.8
Retail	164	80.4
Financial Services	15	7.4
Education	1	0.5
Engineering	1	0.5
Mining	1	0.5
Petroleum	1	1

3.4 Missing values

It is important to address missing values before data are analysed. The method that is used is dependent on the number of missing values, as well as the nature of the data. This is the case especially where data follow a multivariate normal distribution. Missing values are the result of the unwillingness of a respondent to answer a particular item in the questionnaire.

There are different methods for addressing missing values. List-wise deletion is one of the most popular methods for dealing with missing values. In this instance, all cases which contain missing values are excluded from the analysis (Byrne, 2001). The final sample to be used in the analysis will therefore only include complete data records. One of the disadvantages of this method is the decrease in sample size.

Pair-wise deletion refers to the deletion of cases only on the variables where the values are missing. The case is therefore not deleted on the entire set of analysis but only on the particular analysis involving variables for which there are no observed scores (Byrne, 2001).

Another method for dealing directly with missing values is to replace them with some estimated value. Mean imputation is one strategy whereby the arithmetic mean is substituted for a missing value. This method can be problematic, because the arithmetic mean represents

the most likely score, which may reduce the variance of the variable (Byrne, 2001). A second imputation strategy is regression-based imputation. Here every missing value is replaced by a predicted score using multiple regression based on the values of the other variables (Kline, 2011).

Although there are various options that could be used to address missing values, the intention was to solve this problem of missing values through the imputation by matching procedure. In this method the missing values are replaced by substitute values which are derived from other cases with similar response patterns (Theron, Spangenberg & Henning, 2004). The PRELIS program can be used for this purpose (Jöreskog & Sörbom, 1996).

3.5 Measuring instruments

Four measuring instruments were used to measure the constructs of ethical leadership, integrity, trust and work engagement. The instrument measuring work engagement was the only one that was used in its original intended form while the others were developed to fit the purpose of this study.

3.5.1 Work engagement

Work engagement was measured by the original 17-item Utrecht Work Engagement Scale (UWES). Schaufeli and Bakker (2003) develop this scale in order to measure the broad scope of this construct. The UWES originally consisted of 24 items, but unsound items were eliminated after psychometric evaluation and 17 items that describe the three dimensions of work engagement remained. These items consequently comprise six vigour items, five dedication items and six absorption items (Schaufeli & Bakker).

The UWES has demonstrated sound psychometric properties where the three factor structure of the UWES fits well in the data of various samples and therefore confirms factorial validity. The three scales are highly internally consistent, with Cronbach's alphas exceeding .70 (Schaufeli & Bakker, 2003). In testing the construct validity of the UWES, Seppälä et al. (2009) found that the UWES consists of three correlated factors which support the postulated three

dimensions. The internal consistency, factorial validity, structural equivalence and bias of the UWES were also studied in South Africa. It was found that the correlations between the three dimensions were high and the Cronbach's alpha coefficients of the scales were acceptable, compared to the guideline of 0.70 (Rothmann, 2003).

3.5.2 Trust in the leader

Trust in the leader was measured by the 14-item Leader Trust Scale (LTS) developed by Engelbrecht and Heine (2012a). The items of the LTS were adapted from the trust instrument by Bews (2000), and the Workplace Trust Survey (WTS) developed by Ferres and Travaglione (2003).

Twelve items of the trust measure devised by Bews (2000) was included in the LTS. The relevance of Bews's trust scale is confirmed by the fact that it was developed and tested in the South African context and sound psychometric properties were reported (Bews, 2000; Engelbrecht & Chamberlain, 2005).

Two items were added to the LTS for the purpose of the present study. These two items were generated from the Workplace Trust Survey and read as follows: "I proceed on the basis that my supervisor/manager will act in good faith" and "I feel that my supervisor/manager keeps personal discussions confidential".

The Workplace Trust Survey (WTS) was developed and validated by Ferres and Travaglione (2003). Support for the internal reliability, construct validity and divergent/convergent validity were obtained for the WTS (Ferres, Connell & Travaglione, 2004).

3.5.3 Ethical leadership

Ethical leadership was measured by the 17-item Leadership of Ethics Scale (LES) which was specifically developed by Engelbrecht and Heine (2012b) for the purpose of this study. The objective of the LES was to develop an ethical leadership measure that can be differentiated conceptually from a measure of behavioural integrity (one of the latent variables of this study).

The LES was based on items from different measures of ethical leadership (Brown, Trevino & Harrison, 2005; Spangenberg & Theron, 2005; Yukl, Mahsud, Hassan & Prussia, 2011).

All 10 items of the Ethical Leadership Scale (ELS) developed by Brown et al. (2005) were included in the LES. The ELS combines different leader behaviours such as acting fairly and honestly and rewarding ethical conduct. Different studies showed that the ELS demonstrated high internal consistency and stable uni-dimensionality (Brown et al., 2005; Walumbwa & Scaubroeck, 2009; Walumbwa et al., 2011).

Three items of the Ethical Leadership Inventory (ELI) were integrated in the LES. The ELI developed by Spangenberg and Theron (2005) placed emphasis on the ethical vision of an ethical leader. The developers of the ELI stated that ethical leadership involves the creation and sharing of an ethical vision; the preparing of the organisation for implementing the vision; and the actual implementation of the vision. The ELI interprets leadership as "a complex, continuous process expressing itself in an extensive array of inter-dependent behavioural actions" (Spangenberg & Theron, 2005, p. 16). The three items of this scale were included because they introduce the dimension of a vision and the transferring of ethical leadership into the organisation.

Four items from Yukl et al. (2011) were also included in the LES. Yukl et al. (2011) developed and tested the Ethical Leadership Questionnaire (ELQ) in order to provide a useful and valid measure. This questionnaire consists of 15 items which describe numerous aspects of ethical leadership. It has high reliability and discriminant validity and was assessed and confirmed through exploratory and confirmatory factor analyses. Evidence for the criterion-related validity was provided through regression analyses (Yukl et al., 2011). The four items included in the LES elaborate on the ethical practices of ethical leaders and were therefore considered appropriate to contribute to the constitution of the final questionnaire.

3.5.4 Integrity

Integrity was measured by the 9-item Behavioural Integrity Survey (BIS) developed by Engelbrecht and Heine (2012c) for the purpose of this study. Four items from an integrity

measure developed and validated by Simons, Friedman, Lui and Parks (2007) were included in the BIS. Evidence of scale reliability has been demonstrated by the Cronbach's alpha (α = .87) (Simons et al.).

Four items from a 12-item integrity measure developed by Van Aswegen and Engelbrecht (2009) were also included in the BIS. These four items were adapted from the honesty, consistency and promise fulfilment subscales of the Butler's (1991) Conditions of Trust Inventory.

An additional item was developed for inclusion in the BIS. This item places emphasis on the moral values the leader should regard as important in order to exhibit integrity. The BIS was thus designed to measure the word-action consistency (three items), promise fulfilment (two items) and honesty/morality (four items) dimensions of integrity (Palanski & Yammarino, 2007).

3.6 Statistical analyses of data

After all the data on the four constructs had been gathered, statistical analysing of the data followed. The statistical techniques that were utilised in this study were item analysis; exploratory factor analysis (EFA); and confirmatory factor analysis (CFA) to evaluate the fit of the measurement models; and structural equation modelling (SEM) to measure the fit of the structural model. It was made possible through utilising the Statistical Package for the Social Sciences (SPSS), version 20.

3.6.1 Item Analysis

The structural model comprises latent variables and various scales were used to measure specific dimensions in the model. The purpose of item analysis is to determine whether a measurement is reliable and to identify items in these scales that do not represent the specific latent variable. These items are referred to as poor items because of their inability to differentiate between various states of the latent variable they are meant to reflect and states that do not reflect the latent variable. Elimination of these items is then considered (Theron, Spangenberg & Henning, 2004). Nunnally (1978) stated that a measurement is reliable to the

extent to which a measurement provides the same result regardless of any opportunities for variation that might occur.

Coefficient alphas were calculated to determine the reliability of these scales based on internal consistency. The size of the reliability coefficient is based on both the average correlation among items (internal consistency) and the number of items (Nunnally, 1978). Cronbach's alphas range from 0 to 1 and the closer the values are to 1, the greater the internal consistency of the items in the scale. According to Kline (cited in Field, 2009), items with a Cronbach's alpha of .70 are satisfactory. Every scale and subscale underwent item analysis through the SPSS Reliability Procedure (version 20) to identify and possibly eliminate the poor items.

Item-total correlations for specific items can be determined to further ensure that the measuring instruments are internally consistent. Item-total correlations were calculated for all the scales. Item-total correlations above 0.20 were seen as satisfactory and those below 0.20 qualified for elimination (Nunnally, 1978). It is important to note that, while a high value of Cronbach's alpha indicates good internal consistency of all items in the measurement instrument, it is not a given that the scale is uni-dimensional. A method to determine the uni-dimensionality of the scale is exploratory factor analysis (EFA).

3.6.2 Exploratory Factor Analysis

The purpose of exploratory factor analysis (EFA) is to determine whether the dimensionality of each scale contributes to an internally consistent description of the relevant measuring model. Exploratory factor analysis can further be used as a process to refine and reduce items by identifying and removing items with inadequate factor loadings (Pallant, 2007). Nunnally (1978, p. 327) refers to factor analysis as a "broad category of approaches to conceptualizing groupings (or clusterings) of variables and an even broader collection of mathematical procedures for determining which variables belong to which group".

The first step was to perform an Exploratory Factor Analysis (EFA) on all the items comprising the sub-scale. Exploratory Factor Analysis (EFA) was done to examine the uni-dimensionality of the sub-scale and identify items contributing to the lack of coherency. The purpose was to

confirm the uni-dimensionality of each scale and subscale and to remove items with inadequate factor loadings (Theron et al., 2004). SPSS (Version 20) was used to perform the uni-dimensionality test.

Principal axis factor analysis was used as the extraction technique. This technique was chosen rather than the principal components analysis because the statistical calculation of the Principal factor analysis allows for the presence of measurement error. The extracted solution was then subjected to oblique rotation. Although oblique rotation is slightly more difficult than orthogonal rotation, it allows the underlying factors to be correlated (Pallant, 2007).

Once the number of significant factors had been determined, the factor loadings on the rotated matrix were studied. Poor items had to be identified and subjected to elimination according to the EFA decision criteria. A factor loading was considered acceptable if $\lambda ij > 0.30$ (Tabachnick & Fidell, 2001).

3.6.3 Confirmatory Factor Analysis

Confirmatory factor analysis (CFA) is a technique for testing hypotheses or theories relating to the structure underlying a set of variables (Pallant, 2007). LISREL 8.80 (Jöreskog & Sörbom, 1996) was used to perform confirmatory factor analysis (CFA) separately on the different sub-scales used in this study. The results from CFA are discussed per dimension in terms of important fit indices.

A good fit is indicated when $p > 0.05$ and $RMSEA < 0.08$. When this is the case, each item should be evaluated in terms of its completely standardised factor loadings (LAMDA-X). Acceptable items will have a value > 0.30, which will indicate that the item contributes successfully to the coherency of the sub-scale. If all items load significantly on the latent variable, the factor analysis procedure is completed. When an item does not load significantly on the variable, the item is deleted.

3.6.4 Structural Equation Modelling

The statistical technique that was used in this study is Structural Equation Modelling (SEM). This technique is also referred to as covariance structure analysis or covariance of structure modelling (Kline, 2011). SEM is a confirmatory technique and is performed by means of a computer program, namely LISREL 8.80. Kelloway (1998) provided three reasons for this statistical technique being used increasingly in social science research. Firstly, SEM deals directly with how the measure reflects the intended constructs through confirmatory factor analysis. It is also used to evaluate the measurement properties of certain scales. SEM secondly allows for the specification and testing of complete path models. Lastly, SEM is used to simultaneously assess the quality of measurement and examine the predictive relationships among constructs by performing confirmatory factor analysis and path analysis. Kelloway (1998) further stated that SEM allows researchers to "frame increasingly precise questions about the phenomena in which they are interest" and to "test these questions". In this way, complex questions about data can be answered.

The purpose of SEM is to summarise the interrelationships between variables (Western & Gore, 2006). Through SEM, the unreliability of measurement in the model can be captured, which allows the structural relationships between the latent variables to be accurately estimated. Researchers can develop complex relationships and test it through SEM if the relationships are reflected in the sample data. If any weaknesses are found, the researcher would explore further, using a modified model and a new sample (Western & Gore, 2006). The Structural Equation Modelling was implemented by using LISREL 8.80.

SEM consists of five stages:

1. Model specification
2. Identification
3. Estimation
4. Testing fit
5. Re-specification

Model specification refers to the representation of the hypotheses in the form of a structural equation model. The model can be portrayed as a series of equations which relate to the presumed relations among variables (Kline, 2011). According to Diamantopoulos and Siguaw (2000), model specification involves describing the number and nature of the parameters to be estimated and it is an important step that has to be fully constructed before any data analysis can be done.

Model identification involves a process through which the information provided by the data is examined to determine whether it is sufficient for parameter estimation. A model is identified when it is possible for the computer to obtain a unique estimate of every parameter of the model (Kline, 2011). A single unique value for every parameter should be obtained from the observed data.

After the model is thoroughly identified, parameter estimation can take place. For this the LISREL programme attempts to calculate and obtain the implied covariance matrix which is compared to the observed covariance matrix and adjusts till it is equivalent to the actual covariance matrix (Diamantopoulos & Siquaw, 2000).

The assessment of model fit follows parameter estimation where it is determined that the implied covariance matrix is equivalent to the covariance matrix of the observed data. There are various fit indices to determine the model fit via LISREL. The model fit will be discussed in the following section.

Model modification follows when the model is examined to determine whether it is necessary to modify the model according to the results obtained through the investigation of model fit. Kelloway (1998) refers to model re-specification, for which the researcher may delete non-significant paths from the model or add paths to the model based on empirical results. This is necessary when the fit of the model in the previous step is poor and implies that model identification to testing the fit should be repeated.

3.6.5 The structural model

The structural model consists of a set of linear structural equations which "specifies the causal relationships among the latent variables, describes the causal effects and assigns the explained and unexplained variance" (Jöreskog & Sörbom, 1996, p. 1).

The structural model illustrated in Figure 3.1 is based on the theoretical arguments presented in Chapter 2. Integrity is the independent or exogenous variable in the study and is indicated by the symbol KSI (ξ). Ethical leadership, trust in the leader and work engagement are the endogenous variables and are indicated by the symbol ETA (η).

The structural model also consists of various paths between the variables. These paths represent the relationships between different constructs. The paths between the exogenous and endogenous variables are indicated with the symbol GAMMA (γ), while the paths between the endogenous variables are indicated with BETA (β). ZETA (ζ) represents the errors in structural equations and describes the error terms of η_1, η_2, η_3. ZETA therefore represents residual error in the latent endogenous variables.

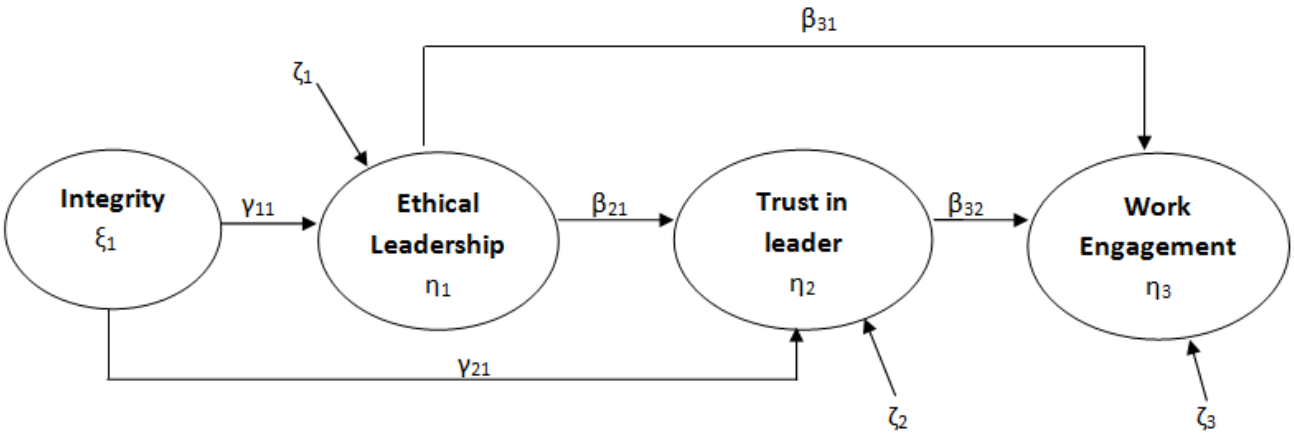

Figure 3.1. **The structural model representing the relationships between integrity, ethical leadership, trust and work engagement with LISREL symbols**

The structural model in matrix form

The matrix equation can be developed when looking at the exogenous and endogenous variables. The gammas and betas should also be taken into consideration in the matrix equation.

$$\begin{pmatrix}\eta_1\\ \eta_2\\ \eta_3\end{pmatrix} = \begin{pmatrix}0 & 0 & 0\\ \beta_{21} & 0 & 0\\ \beta_{31} & \beta_{32} & 0\end{pmatrix}\begin{pmatrix}\eta_1\\ \eta_2\\ \eta_3\end{pmatrix} + \begin{pmatrix}\gamma_{11}\\ \gamma_{21}\\ 0\end{pmatrix}\begin{pmatrix}\xi_1\end{pmatrix} + \begin{pmatrix}\zeta_1\\ \zeta_2\\ \zeta_3\end{pmatrix}$$

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

3.6.6 The statistical hypotheses

The overarching substantive research hypothesis of this study was to investigate the nature of the influence of a leader's integrity and ethical leadership on the follower's trust in the leader and on the follower's work engagement. Existing research has provided a substantive basis on which this research study was based. The theoretical argument presented in the literature study resulted in integrity, ethical leadership (a value-based leadership style), trust, and work engagement as latent variables in the structural model depicted in Figure 3.1.

If the overarching substantive research hypothesis would be interpreted to indicate that the structural model provides a perfect explanation of the manner in which integrity and ethical leadership influence the trust between the leader and the follower, as well as the work engagement of the follower in the organisation, the substantive research hypothesis would translate into the following exact fit null hypothesis:

H_{01}: RMSEA = 0

H_{a1}: RMSEA > 0

If the overarching substantive research hypothesis would be interpreted to indicate that the structural model provides an approximate account of the way in which integrity and ethical

leadership influence the trust between the leader and follower, as well as the work engagement of the employee in the organisation; the substantive research hypothesis would translate into the following close fit null hypothesis:

H_{02}: RMSEA ≤ 0.05

H_{a2}: RMSEA > 0.05

The overarching substantive research hypothesis was divided into five more detailed, specific substantive research hypotheses. These five detailed research hypotheses were converted into the following path coefficient statistical hypotheses:

Hypothesis 3

Trust in the leader (η_2) has a significantly positive influence on the follower's work engagement (η_3).

H_{03}: $\beta_{32} = 0$

H_{a3}: $\beta_{32} > 0$

Hypothesis 4

Ethical leadership (η_1) has a significantly positive influence on the follower's work engagement (η_3).

H_{04}: $\beta_{31} = 0$

H_{a4}: $\beta_{31} > 0$

Hypothesis 5

Ethical leadership (η_1) has a significantly positive influence on the trust in the leader (η_2).

H_{05}: $\beta_{21} = 0$

H_{a5}: $\beta_{21} > 0$

Hypothesis 6

Integrity (ξ_1) has a significantly positive influence on the trust in the leader (η_2).

H_{06}: $\gamma_{21} = 0$

H_{a6}: $\gamma_{21} > 0$

Hypothesis 7

Integrity (ξ_1) has a significantly positive influence on ethical leadership (η_1).

H_{07}: $\gamma_{11} = 0$

H_{a7}: $\gamma_{11} > 0$

Table 3.3

The statistical hypotheses

Hypothesis 3	**Hypothesis 4**	**Hypothesis 5**
H_{03}: $\beta_{32} = 0$	H_{04}: $\beta_{31} = 0$	H_{05}: $\beta_{21} = 0$
H_{a3}: $\beta_{32} > 0$	H_{a4}: $\beta_{31} > 0$	H_{a5}: $\beta_{21} > 0$
Hypothesis 6	**Hypothesis 7**	
H_{06}: $\gamma_{21} = 0$	H_{07}: $\gamma_{11} = 0$	
H_{a6}: $\gamma_{21} > 0$	H_{a7}: $\gamma_{11} > 0$	

3.7 Assessing Model fit

Structural Equation Modelling is mostly used to asses model fit. A wide range of goodness-of-fit statistics that can be used to assess a model's overall fit has been developed over the years. Kelloway (1998) refers to goodness-of-fit indices for assessing absolute, comparative and parsimonious fit.

3.7.1 Absolute fit

Absolute fit indices are explained as "proportions of the covariances in the sample data matrix explained by the model" (Kline, 2011, p. 195). Tests of absolute fit therefore directly assess how well a model reproduces the sample data. These indices concern model to data matrix correspondence. The first measure of fit is the chi-square statistic, which is a traditional measure for evaluating overall fit. It provides a test of perfect fit. A statistically significant chi-square leads to the rejection of the model (Diamantopoulos & Siguaw, 2000). The null hypothesis tested by the chi-square is H_0: $\Sigma = \Sigma(\theta)$.

The aim here is to not reject H_0 and the Satorra Bentler χ^2 statistic is used to test this hypothesis. Kelloway (1998) stated that "a non-significant χ^2 indicates that the model fits the data well in that the model can reproduce the population covariance matrix". The null hypothesis of exact fit is unrealistic, however, and therefore it is more appropriate to test the close fit null hypothesis.

The chi-square is sensitive to sample size, however, and in order to avoid an increase in the χ^2 with an increase in sample size, the χ^2 should be expressed in terms of its degrees of freedom (i.e. χ^2/df). Disagreement about the interpretation of the values for χ^2/df exists in the literature, but good fit is generally indicated by values between 2 and 5. A value less than 2 indicates over fitting (Kelloway, 1998).

LISREL reports a number of Absolute fit indices. The Goodness-of-fit Index (GFI) directly assesses how well the covariances predicted from the parameter estimates reproduce the sample covariance. The GFI ranges from 0 (poor fit) to 1 (perfect fit), with values exceeding 0.9 assumed to indicate a good fit of the model to the data (Kelloway, 1998).

The Root Mean Square Residual (RMR) is a measure of the average value of the difference between the sample covariance matrix and a fitted covariance matrix reproduced by the theoretical model (Diamantopoulos & Siguaw, 2000). It is generally accepted that the lower the index, the better the fit of the model to the data. The standardised RMR represents fitted residuals divided by their estimated standard errors and has a lower bound of 0 and an upper

bound of 1, with values less than 0.05 interpreted as indicating a good fit to the data (Kelloway, 1998).

The Root Mean Square Error of Approximation (RMSEA) is regarded as one of the most informative fit indices. Smaller values indicate a better fit to the data. Values lower than 0.08 indicate a reasonable fit and a value lower than 0.05 indicates a good fit, while values below 0.01 indicate outstanding fit to the data (Diamantopoulos & Siguaw, 2000).

Another absolute fit index is the Expected Cross Validation Index (ECVI). The ECVI focuses on the overall error. It measures the difference between the fitted covariance matrix in the analysed sample and the expected covariance matrix that would be obtained in another comparable sample. Smaller ECVI values indicate better fitting models that are believed to have the greatest potential for replication (Diamantopoulos & Siguaw, 2000).

3.7.2 Comparative fit

Comparative fit (also called incremental fit) represents the relative improvement in fit of the model compared to the statistical baseline model. The baseline model refers to the independence (null) model. According to Kelloway (1998), the null model indicates no relationship between the variables composing the model. Comparative fit measures reported are the Normed-Fit Index (NFI), the Non-Normed Fit Index (NNFI), the Incremental Fit Index (IFI), the Comparative Fit Index (CFI), the Relative Fit Index (RFI) and the Adjusted Goodness-of-Fit Index (AGFI). All of these fit indices have a range of 0 to 1. Values closer to one, especially values > 0.90, represent good fit (Kelloway, 1998).

3.7.3 Parsimonious fit

Kelloway (1998) contends that parsimonious indices of goodness-of-fit are based on the recognition that one can always obtain a better fitting model by means of estimating more parameters. This index has a built-in correction in its formula for model complexity.

The goodness-of-fit indices as described above are summarised in Table 3.4. These indices were used for the purpose of reaching a meaningful conclusion regarding model fit.

Table 3.4

Criteria of goodness-of-fit indices

Goodness-of-fit indices	Criteria
Absolute fit measures	
Minimum fit function Chi-Square	A non-significant result indicates model fit.
χ^2/df	Values between 2 and 5 indicate good fit.
Root Mean Square Error of Approx (RMSEA)	Values of 0.08 or below indicate acceptable fit, those below 0.05 indicate good fit, and values below 0.01 indicate outstanding fit.
P-Value for Test of Close Fit (RMSEA < 0.05)	Values > 0.05 indicate good fit.
90% Confidence Interval for RMSEA	This is a 90% confidence interval of RMSEA testing the closeness of fit *i.e., testing the hypothesis H_0: RMSEA < 0.05).
Root Mean Square Residual (RMR)	Lower values indicate better fit, with values below 0.08 indicative of good fit.
Standardised RMR	Lower values indicate better fit, with values less than 0.05 indicating good fit.
Goodness of Fit Index (GFI)	Values closer to 1 and > 0.90 represent good fit.
Incremental fit measures	
Normed Fit Index (NFI)	Values closer to 1 indicate better fit, with values > 0.09 indicative of good fit.
Non-Normed Fit Index (NNFI)	Higher values indicate better fit, with values > 0.90 indicative of good fit.
Adjusted Goodness of Fit (AGFI)	Values closer to 1 indicate better fit, with values > 0.90 indicative of good fit.
Comparative Fit Index (CFI)	Values closer to 1 indicate better fit, with values > 0.90 indicative of good fit.
Incremental Fit Index (IFI)	Values closer to 1 indicate better fit, with values > 0.90 indicative of good fit.
Relative Fit Index (RFI)	Values closer to 1 indicate better fit, with values > 0.09 indicative of good fit.
Parsimonious Fit Measures	
Parsimony Normed Fit Index (PNFI)	Values closer to 1 indicate better fit, with values > 0.09 indicative of good fit.
Parsimony Goodness of Fit Index (PGFI)	Values closer to 1 indicate better fit, with values > 0.09 indicative of good fit.

(Diamantopoulos & Siguaw, 2000; Kelloway, 1998)

3.8 Summary

After the review of the literature regarding the constructs of integrity, ethical leadership, trust and work engagement and the relationships between them in Chapter 2, this chapter has provided an overview of the methodology that was used to statistically analyse the data obtained to test the postulated relationships. It also included the sampling procedure, statistical hypotheses, information about the measurement instruments and the measures to establish the model fit and the strength and paths of the envisaged hypotheses. The results of this research will be provided in the following chapter (Chapter 4), while the interpretation of the results and the inferences thereof will be included in the last chapter (Chapter 5).

CHAPTER 4

RESEARCH RESULTS

4.1 Introduction

The thoroughly discussed theoretical model acquired in Chapter 2 is based on relationships obtained from investigating the literature. Hypotheses were subsequently formed which, together with the measurement and structural model, were subjected to the methodology explained in Chapter 3. Chapter 4 deals with an in depth description of the results obtained through analysing the data by means of the statistical analysis process. The measurement models of the four underlying constructs, namely work engagement, trust, ethical leadership and integrity were taken through reliability analysis and confirmatory factor analysis in order to determine the reliability and fit of the measurement models. The structural model containing the different relationships between constructs also underwent the statistical analysis to determine if the model fits. Hypotheses identified in Chapter 2 were tested to determine the relationships between the constructs. This chapter provides a discussion of the outcomes of the statistical analysis of all the models and the end findings thereof.

4.2 Missing values

Given the format of the online questionnaire, that permitted participants to proceed only if the previous answer was filled out, missing values did not present a problem and only questionnaires that were completed were used in the analysis.

4.3 Item analysis

Item analysis was performed on all four measurement scales in order to ensure internal reliability and to identify the items that do not contribute to the internal description of the latent variables. It was necessary to ensure that these instruments definitely reflect the variables they were intended to reflect within this study. Item analysis was performed by means of SPSS (Version 20). The reliability of each scale was therefore determined. Cronbach's alpha is the

indicator of the reliability of the scale. According to a number of researchers, Cronbach's alpha should preferably exceed the values of .70 in order to be seen as 'n reliable item (Kerlinger & Lee, 2000; Pallant, 2007). In this study, Cronbach's alpha of .70 was regarded as satisfactory and reliability values below 0.70 qualified for elimination.

The Corrected Item-Total Correlation is information to be examined as it is an indication of the degree to which each item correlates with the total score. Values lower than 0.30 may indicate that the item is not measuring the specific scale (Pallant, 2007). The removal of these items should be considered as it may lead to a higher Cronbach's alpha.

4.3.1 Reliability analysis: Utrecht Work Engagement Scale (UWES)

The Utrecht Work Engagement Scale consists of 17 items which are related to the three subscales namely Absorption, Dedication and Vigour. Each of these subscales was subjected to item analysis.

4.3.1.1 Reliability results: Absorption subscale

Table 4.1 represents the reliability results for the Absorption subscale which consists of 6 items. Cronbach's alpha of this subscale was found to be .89. This was satisfactory as it is above the recommended value of .70 (Pallant, 2007). From the item-total statistics it was evident that the item-total correlations of all items > 0.30. It is also of interest to note that there was no significant increase in the alpha if any of the items (which are all highly correlated) was deleted.

Table 4.1

Reliability and Item-Total statistics of the Absorption subscale

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.890	.893	6

Item-Total Statistics					
Absorption Items	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
WE 3	23.73	24.870	.616	.483	.885
WE 6	24.38	21.497	.737	.555	.866
WE 9	23.79	23.734	.684	.529	.875
WE 11	23.94	22.759	.783	.636	.860
WE 14	24.27	21.166	.796	.693	.856
WE 16	24.65	21.686	.664	.500	.881

The results of the item analysis of the Absorption subscale did not raise any concerns. No items were flagged as problematic and no items were therefore deleted.

4.3.1.2 Reliability results: Dedication subscale

Table 4.2 represents the reliability and correlation results for the 5-item Dedication subscale. The Cronbach's alpha of this subscale was .91 which is highly acceptable because it is far above the recommended value of .70. All items presented an item-total correlation above the recommended cut-off value (0.30). No items were therefore flagged as problematic. The results of the item analysis of the Dedication subscale did not raise any concerns and no items were deleted.

Table 4.2

Reliability and Item-Total statistics of the Dedication subscale

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.913	.916	5

Item-Total Statistics					
Dedication Items	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
WE 2	20.10	15.606	.800	.693	.889
WE 5	19.99	14.571	.878	.803	.872
WE 7	20.27	14.395	.838	.742	.881
WE 10	19.70	17.306	.717	.532	.908
WE 13	20.34	15.240	.692	.491	.915

4.3.1.3 Reliability results: Vigour subscale

With regard to the 6-item Vigour dimension, the final sub-scale of the UWES, the Cronbach's alpha was found to be .88. This was satisfactory and above the recommended value. All items appeared to have item-total correlations > 0.30 and no items were flagged as problematic. The results of the item analysis of the Vigour subscale did not raise any concerns and no items were deleted. The reliability and item-total results for the Vigour subscale is presented in Table 4.3.

Table 4.3

Reliability and Item-Total statistics of the Vigour subscale

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.882	.881	6

Item-Total Statistics					
Vigour Items	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
WE 1	24.76	18.555	.650	.590	.868
WE 4	24.59	17.277	.780	.682	.847
WE 8	24.74	16.018	.770	.609	.848
WE 12	24.41	18.036	.670	.474	.864
WE 15	24.59	17.771	.679	.496	.863
WE 17	24.24	18.637	.607	.416	.874

4.3.2 Reliability analysis: Leader Trust Scale (LTS)

The LTS consists of 13 items and no subscales. The LTS was also subjected to item analysis and the results for the internal reliability are portrayed in Table 4.4. The Cronbach's alpha of this scale was reported to be .972. This was highly satisfactory as it is far above the recommended value of .70. All items presented item-total correlations of above 0.3. No items were flagged as poor and therefore no items were deleted. The results of the item analysis did not raise any concerns.

Table 4.4

Reliability and Item-Total statistics of the LTS

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.972	.973	13

Item-Total Statistics

Trust Items	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Trust 27	63.23	115.368	.792	.667	.971
Trust 28	63.42	114.945	.707	.565	.973
Trust 29	63.16	113.877	.868	.830	.970
Trust 30	63.22	112.003	.891	.812	.969
Trust 31	63.06	114.543	.851	.833	.970
Trust 32	63.09	113.716	.891	.828	.969
Trust 33	63.17	113.995	.860	.771	.970
Trust 34	63.21	114.066	.874	.826	.970
Trust 35	63.22	113.562	.829	.740	.971
Trust 36	63.21	114.312	.810	.707	.971
Trust 37	63.28	111.700	.874	.800	.970
Trust 38	63.23	113.400	.870	.800	.970
Trust 39	63.22	112.981	.857	.794	.970

4.3.3 Reliability analysis: Leadership of Ethics Scale (LES)

The reliabilities for each item comprising the Leadership of Ethics Scale (LES) were calculated and are provided in Table 4.5. This scale consists of 17 items and no subscales. The Cronbach's alpha of the LES was reported to be .966, indicating internal consistency of the Ethical Leadership construct. This is satisfactory as it exceeded the recommended value of .70. No items were flagged as poor, based on the high item-total correlations and therefore no items were deleted. The results of the item analysis on the ethical leadership scale also did not raise any concerns.

Table 4.5

Reliability and Item-Total statistics of the LES

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.966	.966	17

Item-Total Statistics

EL Items	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
EL 10	80.84	197.516	.630	.510	.966
EL 11	80.81	197.594	.645	.529	.965
EL 12	80.45	197.530	.725	.597	.965
EL 13	80.93	190.985	.785	.709	.964
EL 14	80.89	191.214	.776	.652	.964
EL 15	80.64	190.892	.808	.758	.963
EL 16	80.92	189.777	.814	.737	.963
EL 17	80.70	190.299	.845	.789	.963
EL 18	80.86	189.065	.856	.775	.962
EL 19	80.80	191.735	.793	.689	.963
EL 20	80.85	190.422	.855	.803	.962
EL 21	80.80	190.575	.875	.850	.962
EL 22	81.08	189.348	.765	.674	.964
EL 23	80.77	190.218	.848	.796	.963
EL 24	80.70	195.188	.650	.519	.966
EL 25	80.95	190.209	.743	.662	.964
EL 26	80.90	190.930	.793	.733	.963

4.3.4 Reliability analysis: Behavioural Integrity Survey (BIS)

The BIS consists of 9 items and no subscales. Item analysis was performed on the BIS and the results for the internal reliability are portrayed in Table 4.6. The BIS revealed a Cronbach's alpha of .957, which greatly exceeds the minimum cut-off score of .70. It is of interest to note that all items constituted a high item-total correlation and were well correlated with each other. If, for instance, item 1 (Integrity 1) with the lowest item-total correlation was subjected for deletion, the Cronbach's alpha would have increased by 0.001. This is not a significant increase and therefore deemed unnecessary to delete this item. No items were therefore flagged as poor and no items were deleted. The results of the item analysis did not raise any concerns.

Table 4.6

Reliability and Item-Total statistics of the BIS

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.957	.957	9

Item-Total Statistics

Integrity Items	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Integrity 1	41.21	58.167	.690	.560	.958
Integrity 2	41.19	55.653	.781	.654	.954
Integrity 3	41.30	54.063	.849	.739	.951
Integrity 4	41.28	54.725	.883	.815	.949
Integrity 5	41.11	55.332	.895	.829	.949
Integrity 6	41.25	54.422	.850	.841	.951
Integrity 7	41.21	54.598	.863	.851	.950
Integrity 8	41.23	55.220	.801	.706	.953
Integrity 9	41.13	54.992	.813	.691	.953

4.3.5 Summary of the item analysis results

The results of the item analysis performed on the various scales are summarized in Table 4.7. After examination of all the scales it was concluded that all the Cronbach's alpha values exceed the required .70 cut-off and all items present high item-total correlations. No items were consequently deleted. Each scale was therefore considered to be internally consistent and reliable.

Table 4.7

Summary of the item analysis results

Scale	Mean	Std deviation	Cronbach's alpha	Number of items deleted	Number of items retained
Work engagement: Absorption	28.95	5.645	0.890	0	6
Work engagement: Dedication	25.10	4.857	0.913	0	5
Work engagement: Vigour	29.47	4.992	0.882	0	6
Leader Trust Scale (LTS)	68.48	11.540	0.972	0	13
Leadership of Ethics Scale (LES)	85.87	14.706	0.966	0	17
Behavioural Integrity Survey (BIS)	46.36	8.339	0.957	0	9

4.4 Dimensionality analysis

The purpose of the dimensionality analysis is to evaluate the success with which each item, along with the rest of the items in the particular scale or subscale, measures the specific latent variable it was designed to reflect. Exploratory Factor Analysis (EFA) was therefore performed to examine the uni-dimensionality assumption. The objective was therefore to confirm the uni-dimensionality of each scale and subscale and to remove items with inadequate factor loadings (Theron, Spangenberg, & Henning, 2004). SPSS (version 20) was used to perform the uni-dimensionality test. Unrestricted Principal Axis Factor analyses with oblique rotation were performed on the various scales and subscales.

The Kaiser-Meyer-Olkin (KMO) measure of sample adequacy assists with the measuring of the factorability of the data. When the KMO value exceeds 0.60, the correlation matrix can be regarded as adequate for factor analysis (Pallant, 2007). Investigating the eigenvalues was imperative because it determined which factors remains in the analysis. Any factors with an

eigenvalue of less than 1 were excluded (Kinnear & Gray, 2004). Factor loadings of items on the factor they were designated to reflect was considered satisfactory if they were greater than 0.50. The higher the value of the loading, the more the factor explains the total variance of scores on the variable concerned (Kinnear & Gray).

The sufficiency of the extracted solution was evaluated by calculating the percentage large residual correlations (> 0.05). The residuals indicate the differences between the reproduced correlations and the original correlations (Kinnear & Gray, 2004). It is regarded that smaller residuals indicates a better fit. Thus, a low percentage (< 50%) of large residuals would support the uni-dimensionality of the scale (Kinnear & Gray, 2004).

4.4.1 Dimensionality analysis: Utrecht Work Engagement Scale

Work Engagement is a latent variable that was conceptualised as a construct comprising three latent dimensions that was measured through the Utrecht Work Engagement scale. These dimensions are Absorption, Dedication and Vigour. Each of these subscales was subjected to Exploratory Factor Analysis (EFA). All three latent dimensions were conceptualised as uni-dimensional constructs that are not further dividable into more specific factors.

4.4.1.1 Dimensionality analysis: Absorption subscale

The suitability of the data for factor analysis was assessed using the Keiser-Meyer-Olkin (KMO) measure of sampling adequacy. The KMO was found to be 0.867, which is above the required 0.6 level and this suggests that factor analysis could be performed on the data (Pallant, 2007). After inspection of the eigenvalues, only one factor obtained an eigenvalue greater than 1 (3.917), which imply that only one factor was extracted. The factor matrix is presented in Table 4.8.

Table 4.8

Factor matrix for the Absorption subscale

	Factor 1
WE 3	.661
WE 6	.787
WE 9	.732
WE 11	.841
WE 14	.850
WE 16	.705

The exploratory factor analyses results indicate that only one underlying factor was needed to adequately explain the observed inter-item correlation matrix for the *Absorption* subscale. The factor matrix demonstrates that all six items in the Absorption subscale loaded reasonably satisfactory (> 0.50) on the single underlying factor. There were 5 (33%) non-redundant residuals that obtained absolute values greater than 0.05. This did not raise a concern and the factor solution was considered to provide a credible explanation for the observed correlation matrix (< 50%).

4.4.1.2 Dimensionality analysis: Dedication subscale

Dedication was conceptualised as a uni-dimensional latent dimension of the Work Engagement construct that is not further dividable into more specific factors. The KMO value obtained was 0.875, which indicates that factor analysis could be performed on the data. The exploratory factor analysis results indicated that a single underlying factor explained the observed correlations between the items in the subscale. Only one factor obtained an eigenvalue greater than 1 (3.751), and the scree plot also suggested the extraction of a single factor. The extracted factor structure is shown in Table 4.9. All five items in the Dedication subscale loaded reasonably satisfactory (> 0.5) on the single underlying factor. Only 1 (10%) non-redundant residual with an absolute value greater than 0.05 was reported.

Table 4.9

Factor matrix for the Dedication subscale

	Factor 1
WE 2	.848
WE 5	.940
WE 7	.888
WE 10	.747
WE 13	.720

4.4.1.3 Dimensionality analysis: Vigour subscale

Vigour is a uni-dimensional latent dimension of the Work Engagement construct. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy for this scale was 0.859, which surpassed the normative 0.60 level. The exploratory factor analysis results indicated that a single underlying factor explained the observed correlations between the items in the subscale. Only one factor obtained an eigenvalue greater than 1 (3.782) and the scree plot also suggested the extraction of a single factor. The extracted factor structure is shown in Table 4.10.

The six items in the Vigour subscale loaded satisfactory (> 0.5) on the single underlying factor. Furthermore, the results indicated that there were 8 (53%) non-redundant residuals with absolute values greater than 0.05. This is marginally above the cut-off level of 50% which causes some concern regarding the uni-dimensionality of the Vigour subscale.

Table 4.10

Factor matrix for the Vigour subscale

	Factor 1
WE 1	.707
WE 4	.849
WE 8	.836
WE 12	.713
WE 15	.721
WE 17	.641

4.4.2 Dimensionality analysis: Leader Trust Scale (LTS)

Trust is a latent variable that were conceptualised as a uni-dimensional construct measured through the LTS. The KMO was found to be 0.957, which implies that factor analysis was appropriate to use on this scale. The exploratory factor analysis results indicated that a single underlying factor explained the observed correlations between the items in the scale. The scree plot suggested the extraction of a single factor and only one factor obtained an eigenvalue greater than 1. The results indicated that all 13 items in the LTS loaded satisfactory (> 0.50) on the single underlying factor. This is shown in Table 4.11. There were 10 (12%) non-redundant residuals with absolute values greater than 0.05. The extracted factor structure therefore provided a reasonably satisfactory explanation for the observed correlation matrix.

Table 4.11

Factor matrix for the LTS

	Factor 1
Trust 27	.801
Trust 28	.716
Trust 29	.882
Trust 30	.905
Trust 31	.865
Trust 32	.905
Trust 33	.874
Trust 34	.887
Trust 35	.842
Trust 36	.821
Trust 37	.888
Trust 38	.884
Trust 39	.870

4.4.3 Dimensionality analysis: Leadership of Ethics Scale (LES)

Ethical leadership as a latent variable was conceptualised as an uni-dimensional construct. The KMO measure of sampling adequacy was proved to be 0.957, exceeding the required 0.60 level and indicates that factor analysis was appropriate. The exploratory factor analysis results indicated that a single underlying factor was needed to explain the correlations between the items in the scale. Only one factor obtained an eigenvalue greater than 1. The scree plot also

suggested the extraction of a single factor. The extracted factor structure is shown in Table 4.12.

All 17 items in the LES loaded satisfactory (> 0.50) on the single underlying factor. There were 40 (29%) non-redundant residuals with absolute values greater than 0.05, which indicates that the extracted factor structure provided a credible explanation for the observed correlation matrix.

Table 4.12

Factor matrix for the LES

	Factor 1
EL 10	.638
EL 11	.652
EL 12	.737
EL 13	.798
EL 14	.788
EL 15	.826
EL 16	.832
EL 17	.863
EL 18	.874
EL 19	.811
EL 20	.873
EL 21	.894
EL 22	.775
EL 23	.863
EL 24	.663
EL 25	.753
EL 26	.804

4.4.4 Dimensionality analysis: Behavioural Integrity Survey (BIS)

Integrity as a latent variable was also conceptualised as a uni-dimensional construct. The KMO measure of sampling adequacy for the BIS was 0.933, which surpassed the normative 0.60 level. The exploratory factor analysis results indicated that a single underlying factor was needed to explain the observed correlations between the items in the scale. Only one factor obtained an eigenvalue greater than 1. All 9 items in the BIS loaded satisfactory (> 0.50) on the single underlying factor and is presented in Table 4.13. There were 7 (19%) non-redundant residuals

with absolute values of greater than 0.05. The extracted factor solution provided a credible explanation for the observed correlation matrix.

Table 4.13

Factor matrix for the BIS

	Factor 1
Integrity 1	.705
Integrity 2	.799
Integrity 3	.869
Integrity 4	.906
Integrity 5	.918
Integrity 6	.872
Integrity 7	.884
Integrity 8	.822
Integrity 9	.832

4.5 Evaluating the measurement models

Confirmatory factor analysis (CFA) was performed on all the scales and subscales used in this study. This was done in order to investigate the goodness-of-fit between the measurement models and the obtained data. LISREL 8.80 (Jöreskog & Sörbom, 1996) was used to perform separate confirmatory factor analyses on all 4 scales.

The initial results of the confirmatory factor analysis are discussed per scale in terms of two important fit indices. The first fit index is the p-value Test of Close Fit where $p > 0.05$ indicates good model fit. The Root Mean Square Error of Approximation is the second index where $RMSEA < 0.08$ indicates a reasonable good model fit and $RMSEA < 0.05$ indicates a very good fit of the data (Diamantopoulos & Siguaw, 2000). The results therefore indicated whether the measurement model achieved good fit or fitted poorly in terms of the p-value Test of Close Fit and RMSEA. Different steps were followed depending on whether the results indicated a good or poor model fit. If poor fit was found, the modification indices were investigated in order to determine the possibility of increasing model fit.

4.5.1 Evaluating the measurement model fit of the Utrecht Work Engagement Scale

Confirmatory factor analysis was performed separately on all three subscales of the UWES in order to assess whether the measurement model sufficiently fits the data. This is done by testing the hypotheses of exact fit [H_{01a}: RMSEA = 0] and close fit [H_{01b}: RMSEA ≤0.05].

4.5.1.1 Evaluating the Measurement Model Fit of the Absorption subscale

CFA was performed on all six items in the Absorption subscale of the UWES. After inspection of the fit statistics, it was found that an acceptable model fit had been achieved (p-value Test of Close Fit = 0.0691; RMSEA = 0.0885). Although the RMSEA represented a value marginally above the 0.08 cut-off, the P-value was still satisfactory. This supports the acceptance of the null hypothesis of close fit.

The completely standardised LAMBDA-X matrix was used to determine the significance of the factor loadings hypothesised by the Absorption measurement model. This is indicated in Table 4.14. All items loaded satisfactory (> 0.50) on the latent variable, which means that all items significantly represent the dimension they were designed to reflect.

Table 4.14

Completely standardised LAMBDA-X matrix for the Absorption subscale

	ABSORPT
WE3	0.628
WE6	0.795
WE9	0.713
WE11	0.826
WE14	0.851
WE16	0.732

One of the methods to improve the fit of the model is attained through the freeing of model parameters (Diamantopoulos & Siguaw, 2000). This led to the investigation of the modification indices of THETA-DELTA and some concerns were highlighted. Model modification indices are intended to answer the question whether any of the currently fixed parameters, when freed in the model, would significantly improve the fit of the model. Modification indices (MI) indicate

the extent to which the chi-square fit statistic decreases when a currently fixed parameter in the model is freed and the model re-estimated (Jöreskog & Sörbom, 1993). Large modification index values (> 6.6349 at a significance level of 0.01) are indicative of parameters that, if set free, would improve the fit of the model significantly (p<0.01) (Diamantopoulos & Siguaw, 2000; Jöreskog & Sörbom, 1993). The modification indices are presented in Table 4.15.

Table 4.15

Modification indices for THETA-DELTA for the Absorption Subscale

	WE3	WE6	WE9	WE11	WE14	WE16
WE3	-					
WE6	0.118	-				
WE9	18.250	0.649	-			
WE11	2.283	1.296	0.170	-		
WE14	13.466	0.002	2.784	1.680	-	
WE16	2.967	0.009	3.314	0.722	11.109	-

The modification indices magnitudes for THETA-DELTA for WE3 and WE9 and for WE3 and WE14 were a cause for concern. A decision was made after an examination of the items to delete the item with lower loadings on the completely standardised solution matrix. WE3 was consequently deleted (see Table 4.14). WE14 and WE16 also presented a higher modification index for THETA-DELTA than the threshold, but after investigation of the impact on model fit if deleted; it was decided not to set any of those items free.

After the deletion of item 3, CFA was performed on the remaining items in the Absorption subscale. The model fit improved considerably, indicating a RMSEA value of 0.00 and the P-value Test of Close Fit of 0.691 (see Table 4.21). The RMSEA below the critical cut-off value of 0.05, reflected good fit of the refined Absorption scale. The completely standardised LAMBDA-X matrix is indicated in Table 4.16. All items loaded satisfactory (> 0.50) on the latent variable.

Table 4.16

Completely standardised LAMBDA-X matrix for the refined Absorption subscale

	ABSORPT
WE6	0.789
WE9	0.686
WE11	0.815
WE14	0.873
WE16	0.744

4.5.1.2 Evaluating the Measurement Model Fit of the Dedication subscale

All five items of the Dedication subscale were subjected to confirmatory factor analysis in order to measure the fit of the measurement model to the data. It was determined that the data fit the model well with a p-value Test of Close Fit of 0.477 and RMSEA of 0.0438 and that the null hypothesis of close fit is rejected. A RMSEA below the value of 0.05 is indicative of a very good fit. Table 4.17 demonstrates that all items loaded satisfactory on the dimension.

Table 4.17

Completely standardised LAMBDA-X matrix for the Dedication subscale

	DEDICAT
WE2	0.834
WE5	0.915
WE7	0.870
WE10	0.733
WE13	0.672

4.5.1.3 Evaluating the Measurement Model Fit of Vigour subscale

The Vigour dimension of the UWES and all six of its items were also subjected to CFA. After investigation of the fit statistics, it appeared that the measurement model fits the data poorly with a P-value Test of Close Fit of 0.000 and RMSEA of 0.147. Further inspection indicated that all 6 items loaded satisfactory (> 0.50) on the dimension and no items presented a concern. This is indicated in Table 4.18.

Table 4.18

Completely standardised LAMBDA-X matrix for the Vigour subscale

	VIGOR
WE1	0.730
WE4	0.829
WE8	0.804
WE12	0.689
WE15	0.693
WE17	0.595

Additional investigation led to a concern regarding the modification indices for THETA-DELTA. As previously mentioned, modification indices (MI) indicate the extent to which the chi-square fit statistic decreases when a currently fixed parameter in the model is freed and the model re-estimated (Jöreskog & Sörbom, 1993). Setting free parameters with high modification index values (>6.6349) will likely improve the fit of the model. Table 4.19 presents the modification indices for THETA-DELTA.

Table 4.19

Modification indices for THETA-DELTA for the Vigour subscale

	WE1	WE4	WE8	WE12	WE15	WE17
WE1	-					
WE4	49.137	-				
WE8	3.001	2.499	-			
WE12	11.497	0.343	0.004	-		
WE15	13.582	2.707	0.006	6.662	-	
WE17	7.518	6.278	0.018	5.374	15.694	-

In this case, the magnitudes of the modification indices for THETA-DELTA for WE1 and WE4 associated with the fixed parameters were a cause for concern. A decision was made after an examination of the items to delete the item with lower loadings on the completely standardised solution matrix (see Table 4.18). Consequently WE1 was eliminated and this resulted in a significant improvement in the fit indices, indicated in Table 4.21. The improved fit indices present a P-value Test of Close Fit of 0.383 and a RMSEA of 0.0548, which implies good

fit. The completely standardised LAMBDA-X matrix is portrayed in Table 4.20. All items loaded satisfactory (> 0.50) on the latent variable.

Table 4.20

Completely standardised LAMBDA-X matrix for the refined Vigour subscale

	VIGOR
WE4	0.762
WE8	0.780
WE12	0.733
WE15	0.745
WE17	0.644

Goodness of fit: UWES

The UWES is a measurement used in this study to measure the Work Engagement latent variable. The final step in the analysis of the measurement models was to test the individual fit of each measurement model in terms of goodness-of-fit statistics that were obtained after the final CFA had been performed separately on the refined subscales of the UWES. The fit indices are represented in Table 4.21.

Table 4.21

Fit indices for the refined UWES measurement models

Indices	Absorption	Dedication	Vigour
Absolute Fit measures			
Satorra-Bentler Scaled Chi-Square	4.791 (p>0.05)	6.950 (p>0.05)	8.044 (p>0.05)
χ^2/df (Degrees of Freedom = 5)	0.958	1.390	1.609
Root Mean Square Error of Approximation (RMSEA)	0.0	0.0438	0.0548
P-Value for Test of Close Fit (RMSEA < 0.05)	0.691	0.477	0.383
Root Mean Square Residual (RMR)	0.0278	0.0284	0.0327
Standardized RMR	0.0197	0.0241	0.0295
Goodness of Fit Index (GFI)	0.986	0.983	0.977
Incremental Fit Measures			
Normed Fit Index (NFI)	0.994	0.992	0.986
Non-Normed Fit Index (NNFI)	1.001	0.995	0.990
Adjusted Goodness of Fit Index (AGFI)	0.959	0.948	0.930
Comparative Fit Index (CFI)	1.000	0.998	0.995
Incremental Fit Index (IFI)	1.000	0.998	0.995
Relative Fit Index (RFI)	0.987	0.984	0.973
Parsimonious Fit Measures			
Parsimony Normed Fit Index (PNFI)	0.497	0.496	0.493
Parsimony Goodness of Fit Index (PGFI)	0.329	0.328	0.326

Results: Absolute Fit Measures

The fit indices reported in Table 4.21 indicate that the refined measurement models of Absorption, Dedication and Vigour, present acceptable fit with the data. Enough evidence was not found to reject the null hypothesis of exact fit. Thus, there was a possibility of an exact model fit with the data. The χ^2/df ratio was calculated using the Satorra-Bentler Scaled Chi-Square. The χ^2/df ratio (0.958 – 1.609) for all the subscales failed to come close to the 2 - 5 range. Nonetheless, the RMSEA, which indicates how well the model fits the covariance matrix, suggests that the refined measurement models fit the obtained data adequately (0.0 – 0.05); as values below 0.08 indicate a reasonable fit and RMSEA values below 0.05 indicate a very good fit to the data (Kelloway, 1998).

The p-value for Test of Close Fit (RMSEA < 0.05) ranges from 0.383 – 0.691, supporting the conclusion that the null hypothesis of close fit is not rejected and the various measurement

models can be said to show close fit. The RMR ranges from 0.028 – 0.033 indicating reasonable fit. Because the RMR is known to be a somewhat unreliable index, the standardised RMR values are a more stable figure to consider. In this instance, the standardised RMR values are all below the 0.05 threshold, providing evidence of a relatively good model fit. A positive picture is also expressed by the GFI. The GFI for each of the measurement models are close to 1 and above 0.90. This indicates that good absolute fit has been achieved for each measurement model.

Results: Incremental Fit Measures

The results of the increment fit indices indicate that all the measurement models achieve NFI, NNFI, AGFI, CFI, IFI and RFI indices that are > 0.90, which represents good fit. These comparative indices therefore, appear to reveal a positive picture of model fit.

Results: Parsimonious Fit Measures

The measurement models did not reach the PNFI and PGFI indices of above 0.90. According to Kelloway (1998) it is unlikely for these two indices to reach the 0.90 cut-off which is used for the other indices. These indices are more useful when comparing two competing theoretical models.

Conclusion

It was found that for each of the three subscales, the null hypothesis of close fit was not rejected (H_0: RMSEA ≤ 0.05). This is an indication that all the separate measurement models fit the data well. The three respective measurement models, comprising UWES can therefore be said to provide a credible explanation of the observed covariance matrices.

4.5.2 Evaluating the measurement model fit of the Leader Trust Scale (LTS)

Confirmatory factor analysis via LISREL was also performed on the LTS in order to assess whether the measurement model sufficiently fits the data. RMSEA is tested with the Satorra-Bentler χ^2 statistic, and in this case the exact fit null hypothesis is rejected ($p \leq 0.05$). Examination of the fit statistics, led to the conclusion that the measurement model fits the data

reasonably well with a P-value Test of Close Fit of 0.0563 and RMSEA of 0.0674. All items comprising the scale appeared to load significantly on the latent variable. This is indicated in Table 4.22.

Table 4.22

Completely standardised LAMBDA-X matrix for the LTS

	TRUST
Trst27	0.795
Trst28	0.726
Trst29	0.859
Trst30	0.882
Trst31	0.853
Trst32	0.883
Trst33	0.871
Trst34	0.870
Trst35	0.814
Trst36	0.817
Trst37	0.854
Trst38	0.867
Trst39	0.857

Goodness of fit: LTS

The goodness-of-fit statistics for the LTS measurement model are indicated in Table 4.23 and discussed in the following section.

Table 4.23

Fit statistics for the LTS measurement model

Indices	LTS
Absolute Fit measures	
Satorra-Bentler Scaled Chi-Square	124.865 ($p < 0.01$)
χ^2/df (Degrees of Freedom = 65)	1.921
Root Mean Square Error of Approximation (RMSEA)	0.0674
P-Value for Test of Close Fit (RMSEA < 0.05)	0.0563
Root Mean Square Residual (RMR)	0.0327
Standardized RMR	0.0313
Goodness of Fit Index (GFI)	0.857
Incremental Fit Measures	
Normed Fit Index (NFI)	0.984
Non-Normed Fit Index (NNFI)	0.991
Adjusted Goodness of Fit Index (AGFI)	0.800
Comparative Fit Index (CFI)	0.992
Incremental Fit Index (IFI)	0.992
Relative Fit Index (RFI)	0.981
Parsimonious Fit Measures	
Parsimony Normed Fit Index (PNFI)	0.820
Parsimony Goodness of Fit Index (PGFI)	0.612

Results: Absolute Fit Measures

The reported indices indicate that satisfactory measurement model fit has been achieved. The p-value Test of Close Fit (0.0563) achieved a value that is indicative of close fit. The null hypothesis of close fit is therefore not rejected. The RMSEA (0.0674) is also indicative of reasonable good fit. In terms of the χ^2/df index, the measurement model did not completely reach the 2 - 5 range of good fit with a value of 1.921 that falls marginally below the range.

The RMR value of 0.033 and the Standardised RMR value of 0.031 are all below 0.05 which indicates good fit. The GFI failed to exceed 0.90, but still reached a satisfactory value close to 1 which indicates that the model comes close to reproducing the sample covariance matrix.

Results: Incremental Fit Measures

The incremental fit indices presented in Table 4.23 exceeded the critical value of 0.90 except the AGFI which only reached the value of 0.800. This is, however, still satisfactory and therefore the model indicates good comparative fit.

Results: Parsimonious Fit Measures

The LTS measurement model did not completely reach the PNFI and PGFI indices of above 0.9. Although these indices can be useful when comparing two models, it is not the most important indices to consider for the evaluation of model fit.

Conclusion

Through examination of the reported fit indices, it was found that the null hypothesis of close fit for the LTS measurement model was not rejected (H_0: RMSEA ≤ 0.05). This is an indication that the measurement model fits the data well and that the quality of the fit is good. The measurement model can thus be said to provide a credible explanation of the observed covariance matrix.

4.5.3 Evaluating the measurement model fit of the Leadership of Ethics Scale (LES)

In order to further assess the degree to which the items measure the respective variables it claims to measure, confirmatory factor analysis was performed on all 17 items of the Leadership of Ethics Scale. Examination of the reported output of the CFA, indicated that the RMSEA value of 0.0766 presents a reasonable good fit, but the p-value for Test of Close Fit (0.000444) presents a conflicting scenario where the model fits poorly. All items comprising the scales appeared to load significantly on the respective latent variables. This is indicated in Table 4.24.

Table 4.24

Completely standardised LAMBDA-X matrix for the LES

	ETHLEAD
EL10	0.624
EL11	0.643
EL12	0.721
EL13	0.772
EL14	0.768
EL15	0.779
EL16	0.820
EL17	0.847
EL18	0.859
EL19	0.788
EL20	0.864
EL21	0.889
EL22	0.793
EL23	0.851
EL24	0.707
EL25	0.762
EL26	0.808

Additional investigation was necessary in an attempt to improve the model fit of the measurement model to the data. The modification indices for THETA-DELTA was inspected to identify and set free parameters with high modification index values (> 6.6349) in order to improve the fit of the model. Table 4.25 indicates the modification indices for THETA-DELTA.

Careful consideration resulted in the deletion of items EL11, EL13 and EL14 because of their lower factor loadings. The deletion of these items resulted in a significant improvement in the fit indices, portrayed in Table 4.27. The improved fit indices present a P-value Test of Close Fit of 0.0516 and a RMSEA of 0.0665 which indicates good fit.

Table 4.25

Modification indices for THETA-DELTA for the LES

	EL10	EL11	EL12	EL13	EL14	EL15	EL16	EL17	EL18	EL19	EL20	EL21	EL22	EL23
EL10	-													
EL11	1.277	-												
EL12	6.315	0.003	-											
EL13	12.464	1.165	1.788	-										
EL14	2.452	0.253	0.964	12.541	-									
EL15	1.628	1.119	5.552	22.314	12.680	-								
EL16	1.835	0.006	8.715	0.290	6.600	0.661	-							
EL17	2.821	1.677	2.622	9.455	3.192	0.256	5.164	-						
EL18	3.367	0.015	0.350	0.298	0.000	0.345	2.124	3.866	-					
EL19	0.029	2.810	3.745	7.349	0.193	0.652	0.009	0.198	1.050	-				
EL20	0.471	0.331	7.346	4.207	5.656	1.896	0.653	0.206	0.355	4.221	-			
EL21	0.010	9.894	0.779	6.778	1.752	0.348	0.587	1.228	3.005	0.001	14.903	-		
EL22	0.173	5.859	4.932	0.036	0.124	5.063	0.001	6.056	1.147	0.315	8.730	2.885	-	
EL23	6.343	0.339	0.397	2.746	1.329	1.721	0.140	2.799	1.852	2.153	0.385	16.146	7.095	-
EL24	0.065	0.024	1.166	5.900	0.471	6.455	1.902	1.680	0.001	1.818	0.985	3.861	0.580	8.800
EL25	0.249	1.454	0.071	1.294	3.684	0.145	2.303	0.129	0.000	7.013	7.529	8.443	6.793	0.204
EL26	2.992	16.536	0.516	2.963	6.689	8.618	4.101	4.838	0.013	3.712	0.013	0.908	0.472	1.263

	EL24	EL25	EL26
EL24	-		
EL25	1.070	-	
EL26	0.616	19.632	-

The completely standardised LAMBDA-X matrix for the refined LES is indicated in Table 4.26. All items loaded satisfactory (> 0.50) on the latent variable.

Table 4.26

Completely standardised LAMBDA-X matrix for the refined LES

	ETHLEAD
EL10	0.609
EL12	0.713
EL15	0.763
EL16	0.826
EL17	0.857
EL18	0.857
EL19	0.783
EL20	0.872
EL21	0.900
EL22	0.788
EL23	0.853
EL24	0.711
EL25	0.751
EL26	0.810

Goodness of fit: Leadership of Ethics Scale

The goodness-of-fit statistics for the Leadership of Ethics Scale measurement model are indicated in Table 4.27 and discussed in the following section.

Table 4.27

Fit statistics for the refined LES measurement model

Indices	LES
Absolute Fit measures	
Satorra-Bentler Scaled Chi-Square	146.103 ($p < 0.001$)
χ^2/df (Degrees of freedom = 77)	1.897
Root Mean Square Error of Approximation (RMSEA)	0.0665
P-Value for Test of Close Fit (RMSEA < 0.05)	0.0516
Root Mean Square Residual (RMR)	0.0424
Standardized RMR	0.0368
Goodness of Fit Index (GFI)	0.870
Incremental Fit Measures	
Normed Fit Index (NFI)	0.980
Non-Normed Fit Index (NNFI)	0.989
Adjusted Goodness of Fit Index (AGFI)	0.822
Comparative Fit Index (CFI)	0.991
Incremental Fit Index (IFI)	0.991
Relative Fit Index (RFI)	0.977
Parsimonious Fit Measures	
Parsimony Normed Fit Index (PNFI)	0.830
Parsimony Goodness of Fit Index (PGFI)	0.638

Results: Absolute Fit Measures

The reported indices indicated that satisfactory measurement model fit has been achieved after the refinement of the model. The null hypothesis of exact fit is rejected ($p \leq 0$) and the RMSEA (0.0665) and p-value Test of Close Fit (0.0516) indicate close fit. The null hypothesis of close fit is therefore not rejected. In terms of the χ^2/df index, the measurement model did not succeed in reaching the 2 - 5 range, with a value of 1.897. The RMR and Standardised RMR expressed a positive picture with values < 0.05, which indicates good fit. The GFI failed to exceed 0.9, but still reached a satisfactory value close to 1 which indicates that the model comes close to reproducing the sample covariance matrix.

Results: Incremental Fit Measures

The results of the incremental fit measures indicate that the measurement model achieved NFI, NNFI, IFI, CFI and RFI indices exceeding the critical value of 0.90. AGFI is, however, one of the

incremental fit indices that only reached a value of 0.822. Although this value is marginally below the required 0.90, it is still considered to represent satisfactory fit. These relative or comparative indices therefore, appear to portray a positive depiction of model fit. The results seem to indicate that the model can be ascribed to more than chance.

Results: Parsimonious Fit Measures

The ethical leadership measurement model did not completely reach the PNFI and PGFI indices of above 0.90. Although these indices can be useful when comparing two models, it is not the most important indices to consider for the evaluation of model fit.

Conclusion

Through examination of the reported fit indices, it was found that the null hypothesis of close fit for the refined LES measurement model is not rejected (H_0: RMSEA ≤ 0.05). This is an indication that the measurement model fits the data well and that the quality of the fit is good. It can therefore be said that the measurement model of the ELS provides a credible explanation of the observed covariance matrix.

4.5.4 Evaluating the measurement model fit of the Behavioural Integrity Survey (BIS)

Confirmatory factor analysis via LISREL 8.80 was performed on the BIS in order to assess whether the measurement model sufficiently fits the data. H_0: RMSEA = 0 was tested with the Satorra-Bentler χ^2 statistic, and in this case the exact fit null hypothesis is rejected ($p \leq 0.05$).
The CFA results further revealed that the P-value Test of Close Fit (0.000) indicated that poor fit between the data and the measurement model prevailed. The RMSEA (0.120) was above 0.08 and therefore also insignificant. However, additional investigation demonstrated that all items comprising the scale appeared to load significantly on the latent variable. This is indicated by the completely standardised LAMBDA-X matrix in Table 4.28.

Table 4.28

Completely standardised LAMBDA-X matrix for the BIS

	INTEGRIT
Int1	0.708
Int2	0.802
Int3	0.845
Int4	0.880
Int5	0.899
Int6	0.843
Int7	0.867
Int8	0.817
Int9	0.806

The modification indices for THETA-DELTA were inspected to identify and set free parameters with high modification index values. As previously mentioned modification indices (MI) indicate the extent to which the chi-square fit statistic decreases when a currently fixed parameter in the model is freed and the model re-estimated (Jöreskog & Sörbom, 1993). Large modification index values (> 6.6349 at a significance level of 0.01) are indicative of parameters that, if set free, would improve the fit of the model significantly ($p < 0.01$). Table 4.29 indicates the modification indices for THETA-DELTA.

Table 4.29

Modification indices for THETA-DELTA for the BIS

	Int1	Int2	Int3	Int4	Int5	Int6	Int7	Int8	Int9
Int1	-								
Int2	11.040	-							
Int3	0.642	0.317	-						
Int4	12.457	0.012	0.005	-					
Int5	2.370	0.922	2.211	19.977	-				
Int6	13.879	3.090	0.154	2.863	17.559	-			
Int7	10.578	1.781	0.081	9.284	7.941	105.570	-		
Int8	6.664	6.634	4.040	1.205	0.005	0.632	1.437	-	
Int9	0.001	2.753	1.958	3.225	4.936	0.948	0.664	1.502	-

In this case, the magnitudes of the modification indices for THETA-DELTA for Int6 and Int7 associated with the fixed parameters were a cause for concern. A decision was made after an examination of the items to delete the item with lower loadings on the completely standardised solution matrix. Hence Int6 was eliminated and this resulted in a significant improvement in the fit indices.

After the deletion of Int6, confirmatory factor analysis was performed on the remaining items in the BIS. The model fit improved considerably and the RMSEA presented a value of 0.066 and a P-value Test of Close Fit of 0.195. The results of the second CFA therefore revealed good model fit in that the null hypothesis of close fit was not rejected and the measurement model is said to show close fit. The completely standardised LAMBDA-X matrix for the refined BIS is indicated in Table 4.30. All items loaded satisfactory (> 0.50) on the latent variable.

Table 4.30

Completely standardised LAMBDA-X matrix for the refined BIS

	INTEGRIT
Int1	0.727
Int2	0.809
Int3	0.840
Int4	0.889
Int5	0.915
Int7	0.832
Int8	0.810
Int9	0.809

Goodness of fit: Behavioural Integrity Survey

The goodness-of-fit statistics for the refined Behavioural Integrity Survey measurement model are indicated in Table 4.31 and discussed in the following section.

Table 4.31

Fit statistics for the refined BIS measurement model

Indices	BIS
Absolute Fit measures	
Satorra-Bentler Scaled Chi-Square	37.558 ($p < 0.05$)
χ^2/df (Degrees of freedom = 20)	1.878
Root Mean Square Error of Approximation (RMSEA)	0.0658
P-Value for Test of Close Fit (RMSEA < 0.05)	0.195
Root Mean Square Residual (RMR)	0.0343
Standardized RMR	0.0303
Goodness of Fit Index (GFI)	0.931
Incremental Fit Measures	
Normed Fit Index (NFI)	0.986
Non-Normed Fit Index (NNFI)	0.991
Adjusted Goodness of Fit Index (AGFI)	0.875
Comparative Fit Index (CFI)	0.993
Incremental Fit Index (IFI)	0.993
Relative Fit Index (RFI)	0.981
Parsimonious Fit Measures	
Parsimony Normed Fit Index (PNFI)	0.704
Parsimony Goodness of Fit Index (PGFI)	0.517

Results: Absolute Fit Measures

The reported indices indicated that satisfactory measurement model fit has been achieved. The RMSEA (0.0658) and p-value Test of Close Fit (0.195) achieved values that were indicative of close fit. The null hypothesis of close fit is therefore not rejected. In terms of the χ^2/df index, which is calculated with the Satorra-Bentler Scaled Chi-Square, the measurement model did not reach the 2 - 5 range with a ratio of 1.878.

The RMR value of 0.034 and the Standardised RMR value of 0.030 are below 0.05, which indicates good fit. The GFI value succeeded to exceed 0.90, which is satisfactory and indicates that the model comes close to reproduce the sample covariance matrix.

Results: Incremental Fit Measures

The incremental fit indices namely the NFI, NNFI, IFI, CFI and RFI indices exceeded the critical value of 0.90. The AGFI index (0.875) provided a value which is marginally lower than 0.90 but is still considered to represent satisfactory fit. These comparative indices therefore portray a positive picture of model fit. The results further seem to indicate that the model can be ascribed to more than chance.

Results: Parsimonious Fit Measures

The BIS measurement model did not completely reach PNFI and PGFI indices above 0.90. Although these indices can be useful when comparing two models, it is not the most important indices to consider for the evaluation of model fit.

Conclusion

Through examination of the reported fit indices, it was found that the null hypothesis of close fit for the BIS measurement model was not rejected (H_0: RMSEA ≤ 0.05). This is an indication that the measurement model fit the data well and that the quality of the fit is good. The measurement model can thus be said to provide a credible explanation of the observed covariance matrix.

4.5.5 Fitting the overall measurement model

The path diagram for the overall refined measurement model is presented in Figure 4.1. The path diagram for the measurement model is an illustration showing that all items comprising each of the scales and sub-scales that were used in this study, appeared to load significantly on the respective latent variables.

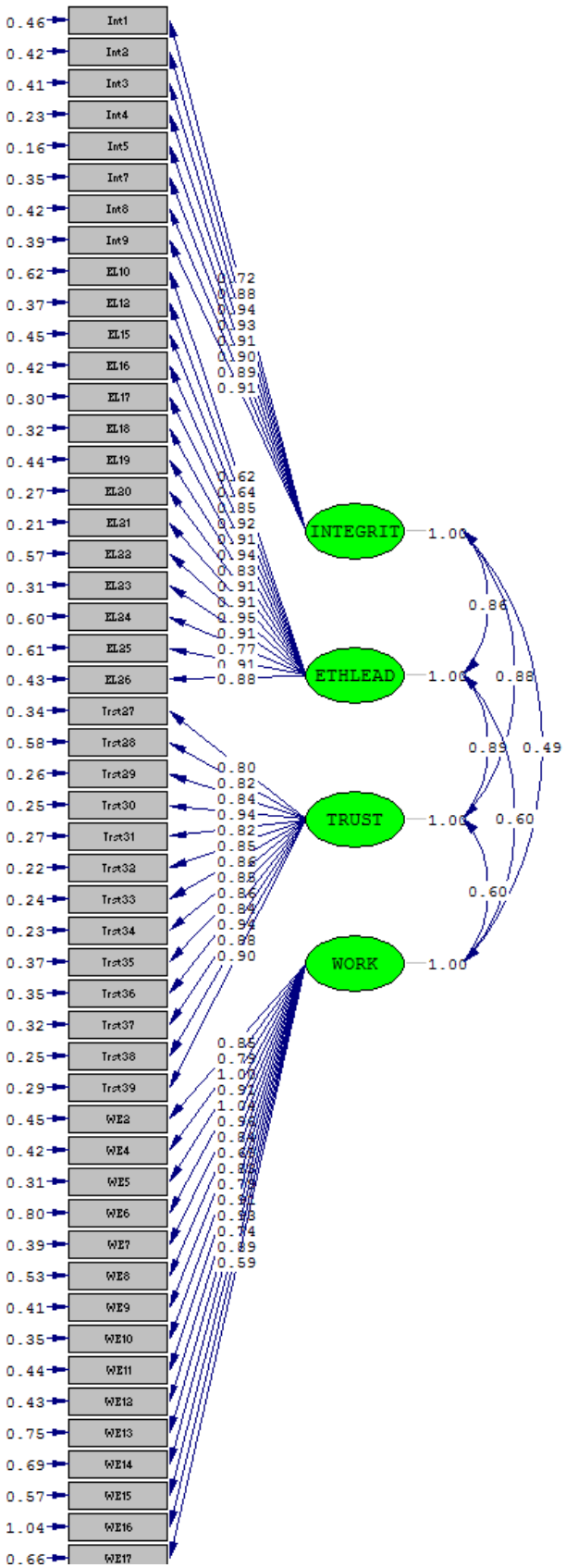

Figure 4.1: Path diagram for the overall refined measurement model

4.6 Structural model fit

According to Jöreskog and Sörbom (1996, p. 171), the overall model is a "combination of a structural equation system among latent variables η's and ξ's and measurement models for observed y's and x's where all variables, observed and latent, are assumed measured in deviations from their means". All the fit statistics of the structural model is shown in Table 4.32.

Table 4.32

Fit statistics for the structural model

Degrees of Freedom = 1170
Minimum Fit Function Chi-Square = 2387.061 (P = 0.0)
Normal Theory Weighted Least Squares Chi-Square = 2399.711 (P = 0.0)
Satorra-Bentler Scaled Chi-Square = 1877.089 (P = 0.0)
Estimated Non-centrality Parameter (NCP) = 707.089
90 Percent Confidence Interval for NCP = (592.751 ; 829.316)
Minimum Fit Function Value = 11.759
Population Discrepancy Function Value (F0) = 3.483
90 Percent Confidence Interval for F0 = (2.920 ; 4.085)
Root Mean Square Error of Approximation (RMSEA) = 0.0546
90 Percent Confidence Interval for RMSEA = (0.0500 ; 0.0591)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.0515
Expected Cross-Validation Index (ECVI) = 10.281
90 Percent Confidence Interval for ECVI = (9.718 ; 10.883)
ECVI for Saturated Model = 12.562
ECVI for Independence Model = 336.711
Chi-Square for Independence Model with 1225 Degrees of Freedom = 68252.427
Independence AIC = 68352.427
Model AIC = 2087.089
Saturated AIC = 2550.000
Independence CAIC = 68568.333
Model CAIC = 2540.491
Saturated CAIC = 8055.603
Normed Fit Index (NFI) = 0.972
Non-Normed Fit Index (NNFI) = 0.989
Parsimony Normed Fit Index (PNFI) = 0.929
Comparative Fit Index (CFI) = 0.989
Incremental Fit Index (IFI) = 0.989
Relative Fit Index (RFI) = 0.971
Critical N (CN) = 140.018
Root Mean Square Residual (RMR) = 0.0597
Standardized RMR = 0.0501
Goodness of Fit Index (GFI) = 0.679
Adjusted Goodness of Fit Index (AGFI) = 0.650
Parsimony Goodness of Fit Index (PGFI) = 0.623

The Satorra-Bentler Scaled Chi-Square of 1877.089 ($p < 0.01$), indicates that the null hypothesis of exact fit can be rejected. The RMSEA is an important value to consider when evaluating model fit. According to Diamantopoulos and Siguaw (2000) values smaller than 0.05 indicate good fit and values below 0.08 indicate reasonable fit. The RMSEA value of this model (0.0546) therefore presents reasonable good fit. The p-value for test of Close fit (0.0515) indicates that the null hypothesis of close fit cannot be rejected, and therefore the structural model shows close fit.

The Root Mean Square Residual (RMR) of the structural model is found to be 0.0597. According to Kelloway (1998) low values are an indication of good fit. This scale is however sensitive to the scale of measurement of the model variables and it is therefore difficult to determine what qualifies as a low value. Kelloway further states that LISREL provides the standardised RMR which is a better index and indicates that values lower than 0.05 represents good fit. The standardised RMR value of this structural model is 0.0501 which nearly reaches the cut-off value and therefore still indicates a reasonable good fit.

The goodness-of-fit index ranges from 0 to 1 and "is based on the ratio of the sum of the squared discrepancies to the observed variance" (Kelloway, 1998, p. 27). Values above 0.90 indicate a good fit of the model. The adjusted goodness-of-fit index (AGFI) is an adjustment of the GFI for the degrees of freedom. Values above 0.90 also indicate good fit. The GFI (0.679) and AGFI (0.650) of this model did not achieve the ideal value of 0.90. According to these indices the structural model does not achieve good fit.

Comparative fit is an incremental fit index that "measures the relevant improvement in the fit of the researcher's model over that of a baseline model, typically the independence model" (Kline, 2011, p.208). The incremental fit indices namely the NFI (0.972), NNFI (0.989), CFI (0.989), IFI (0.989) and RFI (0.971) are above 0.90, which indicate good comparative fit relative to the independence model.

The parsimonious fit is based on the recognition that by estimating more parameters, the fit of the model can improve (Kelloway, 1998). PNFI and PGFI are the parsimonious fit indices where

high values indicate a better fit. There is however no set standard for how high or low the ideal value should be and Kelloway stated that it is unlikely for these indices to reach a value higher than 0.90. The PNFI (0.929) and PGFI (0.623) of this structural model present rather high values which propose a good fit. These indices are however better to use when comparing two models in order to select the model with the highest parsimonious fit.

The examination of the goodness-of-fit indices resulted in the conclusion that the structural model fits the data reasonably well. Firstly the null hypothesis of exact fit is rejected ($p < 0.05$) in favour of the null hypothesis of close fit. The structural model therefore displays reasonably good fit.

4.7 Relationships between latent variables

According to the results of the fit indices it is concluded that the structural model fit the data reasonable well. At this stage it is necessary to test the relationships between the endogenous and exogenous latent variables in order to assess whether these linkages, specified at the conceptualisation phase, were in fact supported by the data (Diamantopoulos & Sigauw, 2000). In order to assess these relationships, three relevant issues should be looked at. The first issue is to examine the signs of the parameters representing the paths between the latent variables to determine whether the direction of the hypothesised relationships is as theoretically determined. Secondly it is essential to investigate the magnitudes of the estimated parameters because it provides important information regarding the strength of these relationships. Lastly the squared multiple correlations (R^2) indicate the amount of variance in the endogenous variables that is explained by the latent variables that are linked to it (Diamantopoulos & Sigauw, 2000).

The parameters to be assessed are the freed elements of the gamma (Γ) and beta (B) matrices. The unstandardised gamma matrix is used to evaluate the strength of the estimated path coefficients γ_{ij} which express the significance of the influence of ξ_j on η_i. These unstandardised γ_{ij} estimates are significant if $t > |1.96|$ (Diamantopoulos & Sigauw, 2000). A significant γ

estimate would entails that the related H_0-hypothesis will be rejected in favour of the relevant H_a-hypothesis.

Table 4.33

Unstandardised GAMMA (Γ) Matrix

	INTEGRIT
ETHLEAD	0.854
	(0.108)
	7.901
TRUST	0.432
	(0.094)
	4.602
WORK	-

Table 4.33 presents the unstandardised gamma matrix. Integrity is the only exogenous latent variable, which implies that the only hypotheses relevant to the Γ matrix are hypothesis 6 (H_{06}) and hypothesis 7 (H_{07}). The top value in the matrix represents the unstandardised gamma coefficients as an estimate of the slope of the regression of η_j on ξ_i. The second value is the standard error and the bottom value the test statistic t. The values in this matrix indicate that there is a significant ($p < 0.05$) relationship between Integrity (ξ_1) and Ethical leadership (η_1) because t (7.901) is above the 1.96 value. Thus, null hypothesis 7 (H_{07}: $\gamma_{11} = 0$) can be rejected in favour of alternative hypothesis 7 (H_{a7}: $\gamma_{11} > 0$).

Table 4.33 further indicates that the t value of the link between integrity and trust > 1.96. A significant ($p < 0.05$) relationship is therefore evident between Integrity (ξ_1) and Trust (η_2). H_{06}: $\gamma_{21} = 0$ can be rejected in favour of H_{a6}: $\gamma_{21} > 0$, which suggests that the propose relationship between these two latent variables was supported.

It is also imperative to investigate the unstandardised beta (B) matrix which describes the relationships between the endogenous variables and reflects the slope of the regression of η_i and η_j. The results presented in Table 4.34 can be used to assess the hypothesised relationships between the endogenous variables in the structural model. According to Diamantopoulos and

Sigauw (2000), unstandardised B_{ij} estimates are also significant ($p < 0.05$) if $t > |1.96|$. A significant B estimate would entail that the related H_0-hypothesis will be rejected in favour of the relevant H_a-hypothesis.

Table 4.34

Unstandardised BETA (B) Matrix

	ETHLEAD	TRUST	WORK
ETHLEAD	-	-	-
TRUST	0.517	-	-
	(0.103)		
	5.008		
WORK	0.313	0.317	-
	(0.138)	(0.136)	
	2.272	2.326	

Table 4.34 represents the unstandardised BETA Matrix. The hypotheses relevant here are hypotheses 3, 4, and 5. The values in this matrix indicate that there is a significant ($p < 0.05$) relationship between Ethical leadership (η_1) and Trust in the leader (η_2) as the t-value (5.008) is above the 1.96 value. Thus, null hypothesis 5 (H_{05}: $\beta_{21} = 0$) is therefore rejected in favour of alternative Hypothesis 5 (H_{a5}: $\beta_{21} > 0$).

From the B matrix it is also concluded that Ethical leadership (η_1) has a significantly positive effect on Work engagement (η_3). Null hypothesis 4 (H_{04}: $\beta_{31} = 0$) can be rejected as the t-value (2.272) falls above 1.96.

Null hypothesis 3 of the significantly positive relationship of Trust (η_2) on Work engagement (η_3) (H_{03}: $\beta_{32} = 0$), can also be rejected in favour of alternative hypothesis 3 (H_{03}: $\beta_{32} > 0$). The null hypothesis is rejected because of the t-value (2.326) that falls above 1.96. The β_{32} path is thus significant.

4.8 Structural model modification indices

The modification indices are also investigated in order to determine the extent to which the structural model is successful in explaining the observed covariance's amongst the apparent variables. According to Jöreskog and Sörbom (1993), a modification index (MI) indicates the minimum decrease in the model's chi-square value, if a previously fixed parameter is set free and the model is re-estimated. This means that a modification index for a particular fixed parameter indicates that if this parameter were allowed to be freed in a subsequent model, then the chi-square goodness-of-fit value would be predicted to decrease by at least the value of the index. Large modification index values (> 6.64) would be indicative of parameters, that if set free, would potentially improve the fit of the model ($p < 0.01$). However, one should take note of the fact that any adjustment to the model, as suggested by parameters with high MI values, should only be freed if it makes theoretical sense to do so (Kelloway, 1998).

The standardised expected changes are the expected values in the standardised solution if the parameters were freed. In this case the proposed structural model appears to fit the data reasonably well. Inspection of the modification indices for the Beta matrix, as portrayed in Table 4.35, suggests that there are no additional paths between any endogenous latent variables that would significantly improve the fit of the proposed structural model.

Table 4.35

Modification and standardised expected change calculated for the Beta matrix

Modification Indices for BETA

	ETHLEAD	TRUST	WORK
ETHLEAD	-	-	2.136
TRUST	-	-	2.606
WORK	-	-	-

Standardized Expected Change for BETA

	ETHLEAD	TRUST	WORK
ETHLEAD	-	-	0.082
TRUST	-	-	0.120
WORK	-	-	-

The LISREL output presented no modification indices for Gamma. This indicates that no additional paths between the exogenous and any endogenous latent variables exist that would significantly improve the fit of the proposed structural model. In conclusion, these results indicate that the structural model was successful to the extent that it explained the observed covariance's amongst the apparent variables.

4.9 Summary

The purpose of this chapter was to report on the results obtained from this study. The chapter commenced with an investigation and refinement of the measuring scales developed. This was followed by examining the data, and correcting where possible. The statistical outcome of the hypothesised relationships was also determined. The following chapter will discuss in greater depth the general conclusions drawn from the results. Recommendations for future research and possible managerial implications will be presented in conclusion.

CHAPTER 5

DISCUSSION OF RESULTS, CONCLUSION AND RECOMMENDATIONS FOR FUTURE RESEARCH

5.1 Introduction

After a detailed discussion on the constructs of integrity, ethical leadership, trust and employee engagement in Chapter 2, Chapter 3 followed with a description of the techniques that were used to analyse the data and produce results. Chapter 4 presented an explanation of the results obtained from the data analysis process that informed this report on the findings of the study. While the previous chapter presented most of the conclusions to the findings, this chapter identifies the specific meaningfulness and implications of the findings.

This chapter therefore consists of an overview comprising the main purpose of the research, an explanation of the findings evident from the data analysis process, the implications of this research in the managerial context, as well as limitations encountered and suggestions for future research.

5.2 Purpose of the study/background

The initial purpose of this study was to identify the influence of integrity and ethical leadership on trust between leader and follower, as well as on employee work engagement. The importance of employee work engagement is increasingly highlighted in the literature and emphasis is placed on the benefits implied with regard to employee commitment to the company and organisational success. Vigour, dedication and absorption are identified as key elements in the process of engaging with one's work (Schaufeli, Salanova, Gonzalez-Roma & Bakker, 2002).

The trusting relationship between leader and follower was also investigated and, although seen as a complex construct with various interpretations and influencing elements, was also connected with work engagement to determine the degree to which this phenomenon of trust in the leader contributes to employees engaging in their work. Ethical leadership and the construct of integrity go hand in hand and are also perceived as essential concepts in any

organisation with the aim of continuous sustainability in a growing global market. According to Den Hartog and Belschak (2012), ethical leaders instigate high levels of trust and commitment and promote desirable behaviours among employees. A relationship is therefore also traced between ethical leadership and work engagement because of the significant effect that value-driven behaviour by the leader has on the employee's work experience.

Five substantive hypotheses were deduced from the literature study presented in Chapter 2, in order to empirically evaluate the postulated relationships. The results of these hypotheses are discussed in terms of the findings obtained through the data analysis process discussed in Chapter 4.

5.3 Summary of the findings

The research objectives of the present study firstly aimed to ensure that the measurement scales utilised in this study to assess the relationships were construct valid and internally reliable. It was necessary to establish valid and reliable measurement scales to ensure that the best possible statistical results would be attained when further analyses were performed. Exploratory factor analysis (EFA) was utilised to assess the dimensionality and factorial validity of each measurement instrument. It was also imperative to explain whether the measurement models, as well as the overall structural model, displayed acceptable fit on the data when fitted by means of separate confirmatory factor analyses. This statistical analysis process is discussed in detail in Chapter 3, whereas the results thereof are reported in Chapter 4. The findings are discussed in the following section.

5.3.1 Conclusions regarding reliability analysis

The reliability coefficients of all the scales were determined to confirm that each of the items from the various instruments succeed in contributing to an internally consistent description of the specific scale in question. According to Nunnally (1978), only instruments with modest reliability can be used to gather information to test hypotheses. A Cronbach's alpha (which is the indicator of the reliability of the scale) of above .70 was considered acceptable, and

reliability values below .70 qualified for elimination (Kerlinger & Lee, 2000; Pallant, 2007). Item-total correlations of above 0.30 were also considered as indicators of internal consistency (Pallant, 2007).

The results obtained in the present study indicated that the reliability analyses produced satisfactory results according to the above-mentioned guidelines. Table 5.1 provides a summary of the final reliability results for each of the measuring scales. All scales reached reliability scores that exceeded the recommended value of 0.70. The results also indicated that all items presented an Item-Total correlation above the recommended cut-off value (0.30). The measurement scale therefore did not raise any concerns and no items were deleted. It was thus found that all the measurement instruments could be considered reliable for gathering information to test hypotheses.

Table 5.1

Reliability results for the measurement scales

Scale	Number of Items	Cronbach's alpha
Work engagement: Absorption	6	.890
Work engagement: Dedication	5	.913
Work engagement: Vigour	6	.882
Leader Trust Scale (LTS)	13	.972
Leadership of Ethics Scale (LES)	17	.966
Behavioural Integrity Survey (BIS)	9	.957

5.3.2 Conclusions regarding construct validity (EFA)

The purpose of dimensionality analysis was to confirm the uni-dimensionality of each scale and subscale and, if necessary, remove items with insufficient factor loadings. To examine this uni-dimensionality assumption, Exploratory Factor Analysis (EFA) was performed on all the scales.

It was found that all the measurement scales utilised in this study satisfied the uni-dimensionality assumption. All items comprising these scales also displayed highly satisfactory factor loadings on the first factor. Factor loadings of items on the factor they were designated to reflect were considered satisfactory if they were larger than 0.50 (Kinnear & Gray, 2004). In all cases, the completely standardised factor loading for each item comprising the measurement model achieved the > 0.50 level. This is an indication that each item successfully explains the total variance of scores on the variable concerned. Table 5.2 presents a summary of the final factor loadings obtained for each of the measurement models of the present study.

Table 5.2

Measurement scales factor loadings

Scale	Number of Items	Factor loadings
Work engagement: Absorption	6	0.661 – 0.850
Work engagement: Dedication	5	0.720 – 0.940
Work engagement: Vigour	6	0.641 – 0.849
Leader Trust Scale (LTS)	13	0.716 – 0.905
Leadership of Ethics Scale (LES)	17	0.638 – 0.894
Behavioural Integrity Survey (BIS)	9	0.705 – 0.918

5.3.3 Model fit (conclusions regarding measurement models)

To determine the extent to which the indicator variables operationalise the latent variables, the measurement model fit of all four measurement models was analysed. The data obtained from the four measuring instruments were therefore analysed by means of Structural Equation Modelling (SEM). Measurement model fit refers to the extent to which a measurement model fits (is consistent with or describes) the data and provides information about the validity and reliability of the observed indicators (Diamantopoulos & Siguaw, 2000). A decision was made to analyse the measurement model fit separately for each scale and subscale of the various measuring instruments through confirmatory factor analysis (CFA).

The initial results of the confirmatory factor analysis (CFA) were evaluated per scale in terms of the p-value Test of Close Fit, where $p > 0.05$ indicates good model fit; and the Root Mean Square Error of Approximation, where RMSEA < 0.08 indicates reasonably good model fit and RMSEA < 0.05 indicates a very good fit of the data (Diamantopoulos & Siguaw, 2000). If the original structure, including all subscale items, produced a poor fit with the data (in terms of the p-value Test of Close Fit < 0.05; RMSEA > 0.08), and certain items displayed insignificant completely standardised factor loadings (< 0.30), poor items were removed and a further CFA was performed on the data. However, if poor fit was still found, the modification indices of THETA-DELTA were evaluated. Model modification strives to indicate whether any of the currently fixed parameters, if set free, would significantly improve the parsimonious fit of the model. The modification indices (MI) therefore point out the extent to which the chi-square fit statistic decreases when a currently fixed parameter in the model is freed and the model re-estimated (Jöreskog & Sörbom, 1993). Where large modification indices (> 6.6349 at a significance level of 0.01) were found, they were set free in order to improve the fit of the model significantly ($p < 0.01$). Further CFAs were then performed on the refined scale and sub-scale items until all items demonstrated satisfactory factor loadings and the measurement model indicated good fit. The following section presents a summary of the goodness-of-fit indices obtained from the confirmatory factor analyses performed on each of the measurement models obtained from the data of the total sample (n = 204). When assessing overall fit using both the absolute and incremental measures of fit, it would seem that the quality of fit, in all cases, is generally good.

5.3.3.1 Absolute and incremental fit measures

Based on large modification indices found, one item in the Absorption subscale and one item in the Vigour subscale were deleted. A comparison of the indices reported in Table 4.21 indicated that the refined structure of each subscale (Absorption, Dedication and Vigour) of the UWES presented a good fit with the data. However, in all three of the refined UWES measurement models, the χ^2/df ratio (0.958 – 1.609) failed to come close to the 2 - 5 range indicative of acceptable fit. Although somewhat disappointing, the models still managed to achieve good fit

in terms of the p-value Test of Close Fit (0.383 – 0.691) and the RMSEA (0.0 – 0.0548). In all three cases, the null hypothesis of close fit was not rejected, indicating that the Absorption, Dedication and Vigour measurement models of the UWES 'fit' the data well and can reproduce the observed sample covariance matrix. The RMR of 0.028 – 0.033 indicated reasonable fit and the standardised RMR values were all below the 0.05 threshold, providing evidence of a relatively good model fit. The Goodness of Fit Index (GFI) values for each of the measurement models were close to 1 and above 0.90. This indicated that good absolute fit had been achieved for all the measurement models. When compared to a baseline model, all three subscales achieved NFI, NNFI, AGFI, CFI, IFI and RFI indices above 0.90, which represented good fit.

In terms of the absolute fit indices of the Leader Trust Scale (LTS) as reported in Table 4.23, the χ^2/df ratio marginally failed to reach the required 2 - 5 range indicative of acceptable fit (1.921). In terms of the p-value Test of Close Fit (RMSEA < 0.05), the LTS obtained a value indicative of good fit (0.0563). The RMR value of 0.033 and the Standardised RMR value of 0.031 were below 0.05, which indicated good fit. The incremental fit indices exceeded the critical value of 0.90 except the AGFI which only reached the value of 0.80. This, however, was still satisfactory and therefore the model indicated good comparative fit. The LTS was therefore able to reject the null hypothesis of exact fit (H_0: $\Sigma = \Sigma(\theta)$) and at the same time, not reject the null hypothesis of close fit (H0: RMSEA ≤ 0.05). This indicates that the measurement model 'fitted' the data well, in that the model could reproduce the observed sample covariance matrix and provide a credible explanation of the observed covariance matrices.

Three items were deleted on the basis of large modification indices of the Leadership of Ethics Scale (LES). The goodness-of-fit indices for the refined LES, as reported in Table 4.27, indicated that satisfactory fit had been achieved in terms of the p-value Test of Close Fit (0.0516) and the RMSEA (0.0665). Consequently, the null hypothesis of exact fit was rejected (H_0: $\Sigma = \Sigma(\theta)$), while the null hypothesis of close fit was not rejected (H0: RMSEA ≤ 0.05). Unfortunately, the χ^2/df ratio (1.897) for the LES failed to reach the 2 - 5 range. Another concern is that the GFI failed to exceed the 0.90 level required to indicate good fit. All other indices indicated good fit such as the RMR and Standardised RMR values of below 0.05, which indicates good fit. In terms of the

incremental fit measures, the measurement model obtained NFI, NNFI, CFI, IFI and RFI indices of above 0.90, which represents good fit.

Large modification indices led to a decision to delete one item from the Behavioural Integrity Scale (BIS). The refined BIS presented satisfactory results in terms of the goodness-of-fit indices (Table 4.31). In terms of the p-value Test of Close Fit (RMSEA < 0.05), the BIS obtained a value indicative of good fit (0.195). The measurement model also obtained good fit in light of the RMSEA index (0.0658). The χ^2/df ratio, however, failed to reach the required 2 - 5 range indicative of acceptable fit (1.878). All the other absolute goodness-of-fit indices indicated that the BIS obtained good fit. The BIS was able to reject the null hypothesis of exact fit (H_0: $\Sigma = \Sigma(\theta)$) and not reject the null hypothesis of close fit (H0: RMSEA ≤ 0.05). The measurement model also achieved NFI, NNFI, CFI, IFI and RFI indices above 0.90, which represents good fit.

5.3.4 Evaluation of structural model

After it was established that each of the measuring instruments were considered to be both construct valid and internally reliable, the data obtained were analysed further in order to test the absolute fit of the structural model and the direct relationships between the various latent variables. The data were also analysed to determine the significance of the hypothesised paths in the model. The research objective of this study was to explain the relationship between integrity and ethical leadership and trust and work engagement. Various statistical techniques could be utilised to examine the relationships between the latent variables represented through the structural model. Structural Equation Modelling (SEM) is the statistical technique that was utilised for this purpose. The goodness-of-fit indices for the structural model are presented in Table 4.32. Conclusions drawn regarding the overall structural model fit are presented in the following section.

5.3.4.1 Goodness-of-Fit Indices for the Structural Model

A thorough interpretation of all the fit indices led to the conclusion that the structural model fitted the data well. A summary of the most important fit indices is presented in Table 5.3. With regard to the results of the absolute fit measures, the Satorra-Bentler Scaled chi-square statistic

(χ^2/df = 1.604) for the structural model, however, suggested that the model did not fit the data well as it fell below the 2 - 5 range indicative of good model fit. In light of the relative RMSEA index (0.0546), the structural model achieved good fit. Table 5.3 indicates that the obtained p-value (0.0515) for the test of close fit (RMSEA < 0.05) supported the assumption of good fit, as a p-value > 0.05 is indicative that the model fits the data well. Consequently, the null hypothesis of exact fit was rejected (H_0: Σ = Σ(θ)), while the null hypothesis of close fit was not rejected (H0: RMSEA ≤ 0.05). Both the reported RMR (0.0597) and the standardised RMR (0.0501) indicated reasonably good fit, but the obtained GFI (0.679) did not manage to exceed the 0.90 level required for good fit.

With regard to the incremental fit measures it was found that, when compared to a baseline model, the structural model achieved NFI, NNFI, CFI, IFI and RFI indices that were > 0.90.

Table 5.3

Summary of goodness-of-fit indices for the structural model

Indices	Structural model
Absolute Fit measures	
Satorra-Bentler Scaled Chi-Square	1877.089 (p < 0.05)
χ^2/df (Degrees of freedom = 1170)	1.604
Root Mean Square Error of Approximation (RMSEA)	0.0546
P-Value for Test of Close Fit (RMSEA < 0.05)	0.0515
Root Mean Square Residual (RMR)	0.0597
Standardized RMR	0.0501
Goodness of Fit Index (GFI)	0.679
Incremental Fit Measures	
Normed Fit Index (NFI)	0.972
Non-Normed Fit Index (NNFI)	0.989
Adjusted Goodness of Fit Index (AGFI)	0.650
Comparative Fit Index (CFI)	0.989
Incremental Fit Index (IFI)	0.989
Relative Fit Index (RFI)	0.971
Parsimonious Fit Measures	
Parsimony Normed Fit Index (PNFI)	0.929
Parsimony Goodness of Fit Index (PGFI)	0.623

To ensure a thorough assessment of the structural model, it was also necessary to investigate the modification indices to determine the extent to which the model explained the observed covariances amongst the manifest variables. Examination of the modification indices suggested that there were no additional paths between any latent variables that would significantly improve the fit of the proposed structural model. These results therefore indicated that the structural model was successful to the extent that it explained the observed covariances amongst the apparent variables.

An examination of the B and Γ matrices was conducted in order to establish the significance of the theoretical linkages proposed by the structural model, as illustrated in Figure 3.1. The interpretation of these results provided information with which to determine whether the theoretical relationships specified at the conceptualisation stage were in fact supported by the data. Here the interpretation concerns the proposed causal linkages between the various endogenous and exogenous variables. The following section provides a discussion regarding the interpretation of these results.

5.3.4.2 Gamma matrix

The unstandardised gamma matrix was analysed and reported in order to describe the relationships between the exogenous and endogenous variables and to evaluate the strength of the estimated path coefficients. The results are discussed in the following section.

The relationship between Integrity and Ethical leadership

It was hypothesised that a statistically significant positive relationship exists between integrity (ξ1) and ethical leadership (η1). Support was found in the present study for a positive relationship between these two constructs. When the postulated structural model consisting of all the latent variables was subjected to SEM, this path was found to be significant in the model. This subsequently led to the rejection of the null hypothesis. Consequently, it could be concluded that the positive relationship between integrity and ethical leadership was confirmed through the statistical techniques.

The positive relationship between integrity and ethical leadership is highly reflected in the literature and this finding therefore supports various researchers' views on this relationship (Brown, Trevino & Harrison, 2005; Engelbrecht, Van Aswegen & Theron, 2005; Palanski & Yammarino, 2007). Palanski and Yammarino (2007) made it clear when they proposed that a person with integrity will demonstrate behaviours that are based on moral values. Integrity is present when a person demonstrates personal consistency and builds his/her behaviour on acts of goodness and moral standards (Six, De Bakker & Huberts, 2007). The fact that integrity is part of the moral value drive behind ethical leadership may support the assumption that a leader with integrity will be encouraged to engage in ethical behaviour and ethical leadership in an attempt to influence followers.

As with the positive relationship between integrity and transformational leadership (Engelbrecht et al., 2005; Toor & Ofori, 2009), this study managed to put emphasis on the degree to which integrity relates to different types of value-based leadership and how ethical leadership is specifically influenced through the presence of integrity. Because of the significant similarities between transformational and ethical leadership (Toor & Ofori, 2009), it is recommended that integrity, which is a core value of a leader who is committed to moral principles, also has a considerable effect on a leader who is dedicated to the management of ethics in the workplace.

This also supports Brown et al.'s (2005) argument that integrity, together with ethical standards and fair treatment of employees, form the foundation of ethical leadership. This is indicative of the strong role ethical leadership plays in the relationship between the leader and the follower. Behavioural integrity, which refers to the "perceived pattern of alignment between an actor's words and deeds", is therefore important in the context of the relationships in the workplace, because it is the manner in which leader integrity is perceived by the follower (Simons, 2002, p. 19). Behavioural integrity, which is measured specifically in the present study, can therefore also have a significant impact on whether the employee perceives his/her manager or leader as someone who is committed to ethical behaviour and the active management of ethics in the organisation.

The relationship between Integrity and Trust

A positive relationship between integrity (ξ1) and trust (η2) was postulated. Results that were obtained through SEM statistical analysis presented support to confirm the relationship between these two constructs as the path was found to be significant in the structural model. This consequently led to the rejection of the null hypothesis. It can therefore be concluded that the positive relationship between integrity and trust was confirmed through the statistical techniques utilised in the present study.

The support obtained in this study for the relationship between integrity and trust is also portrayed in the literature. Various studies have confirmed the statistically significant positive relationship between integrity and trust (Engelbrecht & Cloete, 2000; Kannan-Narasimhan & Lawrence, 2012; Mayer, Davis, & Schoorman, 1995; Mayer & Gavin, 2005; Palanski & Yammarino, 2011).

Trust in the leader is present when the follower knows that he/she can put his life or his work in the hands of the leader and believes that the leader will handle it with consideration and with his/her best interest in mind. The follower will only trust the leader when the leader meets certain behavioural requirements that are worthy of the follower's confidence. Trust is widely associated with moral behaviour such as exhibited in fairness, consistency, benevolence and integrity which supports a belief that the person being trusted will act according to personal and organisational values (Colquitt, Scott & LePine, 2007; Mayer et al., 1995). As mentioned previously, integrity is associated with consistent and reliable behaviour which is based on moral standards. Integrity consequently offers a type of leader behaviour that is predictable and certain and may assist individuals to cope with uncertainty in a constantly changing work environment. A leader with integrity is therefore also perceived as trustworthy, which will strengthen the trust in that leader.

Simons (2002) emphasises how behavioural integrity and trust are highly correlated and how an increase in behavioural integrity would significantly lead to an increase in trust. The Behavioural Integrity Survey (BIS) that was utilised in this study to measure leader integrity supported and

confirmed Simons' argument that behavioural integrity has a strong influence on trust in the leader. A leader who actively demonstrates integrity through honesty, consistency and moral behaviour will be successful in establishing trust in the employer/employee relationship.

5.3.4.3 Beta matrix

The unstandardised beta (B) matrix was examined and reported in order to describe the relationships between the endogenous variables. The B matrix reflects the slope of the regression of ηi and ηj and the results are discussed in the following section.

The relationship between Ethical leadership and Trust

The hypothesised relationship between ethical leadership (η1) and trust (η2) has been confirmed in this study. The SEM results indicated that the path between these two latent variables was found to be significant. The null hypothesis was consequently rejected, which resulted in the conclusion that a positive relationship between ethical leadership and trust was established.

The positive relationship between these two latent variables is also well documented in the literature (Brown & Trevino, 2006; Johnson, Shelton & Yates, 2012; Van den Akker, Heres, Lasthuizen & Six, 2009; Wong, Spence Laschinger & Cummings, 2010; Zeffane, 2010). Trust plays an important role in the relationship between the leader and follower because the nature of such a relationship can lead to various work-related outcomes. The degree to which the leader is perceived as trustworthy will influence the way in which the follower places his/her confidence, trust and belief in the leader. The literature presents different behaviours and characteristics of trustworthiness such as honesty, generosity, benevolence, caring and acceptance that can lead to trust in a leader (Brown & Trevino, 2006; Mayer et al., 1995; Zeffane, 2010).

Ethical leadership is linked with trust because of the value-driven behaviours it promotes. A leader who values ethics and manages ethics in the workplace is likely to display honesty, fairness and care towards the employees (Brown & Trevino, 2006). An ethical leader is also

dedicated to open communication and to involving others in decisions. These characteristics of ethical leadership are concurrent with leaders that are trusted by their followers. As with authentic leadership that has been shown to have a significantly positive effect on trust (Wong et al., 2010), ethical leadership also strives to relate to followers with openness and truthfulness.

Wong et al. (2010) found that authentic leadership has a significantly positive direct effect on trust. This authentic leadership is based in leaders who strive to relate to their followers with openness and truthfulness. When an employee perceives his/her leader as someone with concern for ethical behaviour and who will take employees' needs into consideration when important decisions are made, he/she will be likely to display sincere trust in the leader. Thus, the positive relationship between ethical leadership and trust that was found in this study contributes to similar findings by various researchers in the field of industrial/organisational psychology.

The relationship between Ethical leadership and Work Engagement

It was further postulated that a statistically significant positive relationship exists between ethical leadership ($\eta 1$) and work engagement ($\eta 3$). Support was found in the present study for a positive relationship between these two constructs. Through SEM, this path was found to be significant in the model. This subsequently led to the rejection of the null hypothesis. Consequently, it can be concluded that the positive relationship between ethical leadership and work engagement was confirmed through the study.

The positive relationship that was found in the present study between ethical leadership and work engagement offers support to similar research findings (Den Hartog & Belschak, 2012; Tims, Bakker & Xanthopoulou, 2011; Wong et al., 2010). Den Hartog and Belschak (2012) studied this relationship and found that employees who perceived their leaders as acting ethically, also tend to report improved engagement in terms of feeling more vigorous, dedicated and absorptive at work. It was also found that transformational, authentic and ethical leadership are positively related to work engagement because they all have the main

drive of value leadership (Den Hartog & Belschak, 2012; Tims et al., 2011; Wong et al., 2010). It emphasises the fact that followers are highly engaged in their work when they perceive their leaders as acting ethically.

An employee who is willing to invest effort in his/her work and displays high levels of energy, pride and mental resistance, can be regarded as engaged in his/her work (Schaufeli & Bakker, 2004). Work engagement is possible when different work-related factors contribute to an environment where the employee can feel free and encouraged to be engaged in his/her job. The relationship between ethical leadership and work engagement was investigated in the present study because of the realisation that leadership is an important factor that can contribute to how an employee feels towards his/her work and to the likelihood that he/she will demonstrate work engagement.

As stated in Chapter 2, an employee will be engaged in the work when he/she has the capacity, the motivation, the freedom and the knowledge to engage (Macey, Schneider, Barbera & Young, 2009). Leaders who promote ethical behaviour demonstrate care and consideration toward employee's needs. They empower employees by providing them with the necessary opportunities to become capable in executing their jobs. Ethical leaders treat employees equally and promote fair and principled decision-making. They communicate openly to their followers about goals and expectations (Brown & Trevino, 2006). Ethical leaders inspire employees through an ethical vision and provide the freedom for employees to take initiative in the workplace (Bellingham, 2003). These behaviours of an ethical leader provide the environment for the employee to be fully engage in his or her work.

Ethical leaders care for their employees and are concerned about their welfare (Dadhich & Bhal, 2008). These emotional investments that they make in their relationships with employees also contribute to a supportive work atmosphere where employees can be guaranteed that their leaders will behave with employees' best interests in mind. In such an environment, employees will be likely to engage in their work.

The relationship between Trust and Work engagement

A significantly positive relationship was hypothesised to exist between trust (η2) and work engagement (η3). The SEM results revealed significant path coefficients between these two constructs, which led to the rejection of the null hypothesis. Consequently, it can be concluded that the positive relationship between trust and work engagement was confirmed through the statistical techniques.

The relationship between trust and work engagement has been reported in the literature on several occasions (Buckley, 2011; Wong et al., 2010). Wong et al. (2010) made this clear when they found that a climate in which employees are engaged in their work can be created through trusting relationships in the workplace. Trust is a psychological state in the follower which includes the intention to accept vulnerability based upon own positive expectations regarding the intentions or behaviour of the leader (Rousseau et al., 1998). The behaviours of the leader and the confidence the follower displays in the leader, will therefore determine the degree of trust the follower has in the leader. Trust in the relationship between the leader and follower is imperative as it can have a significant influence on how the employee perceives his/her work environment and how likely it is that he/she will engage in the work.

Work engagement can be ascribed to an employee who is fully committed to his/her work, enjoys the work and is energised through the job. An engaged employee will display commitment to the organisation and will be willing to contribute to the company's goals (Albrecht, 2010). An employee, however, will only be engaged in the work if the work environment presents a suitable, satisfying and productive atmosphere. Because of the important role relationships play in the work place, trust between leaders and followers presents a condition that is necessary for an employees to be really engaged in their work.

Albrecht (2010) refers to distributive fairness (fair distribution of outcomes) and procedural fairness (trustworthy, predictable and sensible systems) that are part of the trust process between the leader and the follower. He emphasised the increase in work engagement when

the employee trusts the leader to be fair in the distribution of outcomes and in systematic procedures.

Buckley (2011) also indicated that, in a changing environment characterised by uncertainty, employees who demonstrate trust in their leaders are more likely to engage in their work. If an employee trusts the leader, he/she assumes that the leader will make decisions with the employee's best interest in mind, and the employee will be more willing to engage in the job because he/she knows that his/her work life is in good hands.

It was confirmed in this present study that a relationship expressive of trust in the leader will promote the presence of employee work engagement; the employee will be driven and committed to the work on the basis of the trust he/she has in the leader to make informed and fair decisions regarding the work.

5.4 Limitations of this study and suggestions for future research

Although this study offers valuable insight about important constructs of leadership and work engagement, some limitations need to be considered for the purpose of providing information on how future studies can be improved and extended. The first limitation of this study concerns the confidentiality aspect of the survey. Ethical leadership, trust and integrity are sensitive constructs when it comes to the relationship between leaders and followers in the organisational context. Although the investigation was seen as a low risk study, which means that respondents who participated in this study were exposed to minimum risks, it was found in some instances that the variance in the data was limited. One reason for this may be that participants experienced concern regarding the confidentiality of their responses. Although it had been clearly communicated to participants that their direct results would not be available to their leaders and that it would not be possible to trace responses to respective individuals, they may have been inclined to provide the most positive responses on all constructs. Future research should focus on using measures that would ensure that all participants felt comfortable and confident about disclosing confidential information.

This study, secondly, was guided by an interest in employees' perceptions of the leader and how this related to their own outcomes. It therefore was a single source study and attention was not given to other sources. Multiple sources of data could be considered in future studies. This could include leader self-assessments of their own integrity and ethical leadership. Leader self-assessments could present a further complication, however, because a leader may evaluate his/her own ethical leadership in a subjective and biased way. Peer ratings could therefore also be considered (Kalshoven & Boon, 2012). Avey, Wernsing and Palanski (2012) also refer to the level of congruence between self and follower assessments which can be utilised to obtain multi-source data. According to Avey et al., single source bias can artificially increase the estimated beta weights.

The constructs in this study captured the core elements of relationships between leaders and followers and how these can influence the outcomes and productivity of the organisation. The study represents an attempt to explain specific relationships between these variables in order to gain a better understanding of this complex network. Although these constructs are widely defined and researched, it is impossible to determine their exact scope of impact, which presents the third limitation. Future studies could explore other mediating and moderating variables to clarify the relationship between ethical leadership and work engagement.

Fourthly, the structural model might have excluded other significant constructs in the process of investigating how ethical leadership and trust influences work engagement. The purpose of this study was not to tire out the nomological network of work engagement, however, and the focus was restricted to the important constructs of ethical leadership, integrity and trust, which represents the core elements of the research that was undertaken. There may therefore be other variables which influence employee work engagement and trust between leader and follower that were not investigated in this study and comprise something that future research may build on.

A fifth limitation concerns the sampling method that was used. The non-probability sampling procedure that was used may have reduced the ability to generalise the results of the study. Because of the online nature of the questionnaire, the link was sent out by a contact person in

a specific organisation to various employees. The researcher was therefore not always in control of how many employees the link was sent to, therefore the participation rate could not be accurately calculated. This resulted in inability to evaluate the impact of non-response bias. It is suggested, therefore, that, when selecting respondents, future studies should avoid making use of a convenient sample, but should make use of a sample that is chosen on the basis of greater probability and randomness. This will ensure that the sample is more representative of the general organisational population.

Another limitation involves the statistical power of testing a covariance structure model using RMSEA. It is suggested that a minimum sample size should be used to achieve a given level of power (MacCallum, Browne & Sugawara, 1996). Some evidence regarding a lack of adequate power (< 0.80) to carry out planned hypothesis testing was found in the present study. It can therefore be said that the sample of this study was too small for the number of variables estimated. A recommendation for future studies is to determine the minimum sample size required to achieve a given level of power and to ensure that sample size meets that criterion.

The last limitation concerns the statistical procedure that was followed. Several recommendations regarding the methodology that should be used in future studies are possible. In this study, factor analysis was performed on the entire data set. Ideally, a random split of the sample from the start would have made it possible to subject the data to a second factor analysis. It is recommended that, in order to cross validate the results, future studies should empirically test the structural model on another sample to determine whether the structural model also fits a second set of the data. It is also suggested that a longitudinal study of the proposed conceptual model should be undertaken to facilitate more convincing causal inferences.

5.5 Managerial implications

The scope of this research study was wide and the study therefore has countless implications at management level. A growing interest in ethical leadership is developing because of current economic conditions and quite questionable business practices regarding moral behaviour and

procedures. Ethical leadership, in the sense of creating and building an ethical environment in which employees feel valued and safe, is necessary for employees to be committed to and engaged in their work. Work engagement is an important concept and, as highlighted in previous chapters, employees who are disengaged from their work can generate unnecessary organisational transaction costs due to the need for excessive monitoring and reinforcement (Lin, 2009).

With respect to work engagement, the present framework of the relationship between work engagement and core factors is of help in identifying leadership practices that promote the development of work engagement. Managers should therefore put various mechanisms in place to promote employee work engagement. Bakker and Demerouti (2008) suggest that an important starting point for the promotion of work engagement is to measure work engagement and its drivers among all employees in the organisation. Interventions should then be aimed at striving to constitute work engagement at an individual and organisational level. Some of the practical methods that management could use are different motivating resources, such as support and recognition by colleagues and supervisors. Successful performance feedback as part of the performance management process, with the focus falling on work engagement and employees being informed of their own performance and what they have to do to improve it, could help to create high levels of engagement (Gruman & Saks, 2011). Opportunities for learning and development, as well as fair opportunities to utilise skills in own jobs are also options in promoting employee work engagement.

In the light of the results of this study, work engagement in the workplace is likely to increase when trust between leaders and followers is present. Trust between these parties is critical for the creation of a trustful work environment and an engaged workforce. This study presents an explanation of these dimensions and in understanding it, management could implement a variety of organisational programmes to strengthen trust and work engagement in the company. Practical means of improving the trust between management and employees could range from the promotion of open information sharing to the development and empowerment of employees. Management could also implement and articulate an appealing vision that

promotes social justice and morality. It would be important, however, to acknowledge the immense impact of the manager's actions that determine his/her trustworthiness, and therefore his influence on the trust the employee has in that manager.

As confirmed through this study, trust and employee work engagement will strengthen when integrity and ethical leadership are present in the work environment. Ethical leadership is in greater demand in organisations worldwide. This study has investigated ethical leadership and related factors and is therefore able to make organisations more aware of the scope of this concept. As stated by Brown et al. (2005), it remains important to be a moral manager, not just a moral person, by implementing moral values and an ethical vision; making it visible by living it out in the organisation. Practical guidelines therefore would suggest leading through ethical role modelling; developing performance criteria that reward ethical behaviour; facilitating fair and ethical solutions to problems and conflict; monitoring fraud and corruption through internal and external audit systems and promoting a code of ethical conduct (Yukl, 2010).

5.6 Conclusion

The data obtained from the sample and the results from the statistical analyses were presented in Chapter 4. The purpose in Chapter 5 was to interpret the results and offer possible explanations. Significant positive relationships were found to exist between integrity and ethical leadership, between integrity and trust in the leader, and between ethical leadership and trust in the leader. Positive relationships between ethical leadership and work engagement, as well as between trust in the leader and work engagement, were also confirmed through the study.

These results contribute meaningful learning to existing literature by providing insights into the strength and directions of relationships among these particular constructs. In practice, it offers useful insight regarding the managerial implications for companies and the possible interventions that can be developed to promote integrity, ethical leadership, trust and work engagement.

Organisations are increasingly recognising the importance of ethical leadership in the business in order to meet the challenges in today's unstable and changing environment. Worldwide companies have gone under because of unethical practices in the leading and managing of organisations. South Africa also faces this challenge where corporate leaders fail to regard the leadership of ethics in an organisation as critical. This introduces the further problem of leaders struggling to win the trust of their followers and other stakeholders because their integrity is constantly being questioned (Caldwin & Hays, 2011).

As confirmed by the present study, these ethical practices of the leader and interpersonal trust are important for the workforce to remain engaged in their work and committed to the organisation. If an employee is engaged in the work, he/she will be productive, committed and involved (Schaufeli & Bakker, 2004). Work engagement consequently is regarded as fundamental to organisational success (Gruman & Saks, 2011).

Organisations should take full responsibility for ensuring that ethical leaders drive management practices and that trust in the leaders is developed through the presence of ethically based business systems and functions. By strengthening these factors, work engagement is promoted amongst employees because of the trust they have in their leaders for taking their interests into consideration, and for behaving in a fair and ethical manner when decisions are made in a turbulent work environment.

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