The Role of Leader Emotional Intelligence in Transformational Leadership, Employee Trust, Change Cynicism and Intention to Leave

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CHAPTER I

INTRODUCTION

Background to the Research

An absolute definition of 'emotional intelligence' (EI) is yet to be developed, and the term carries multiple meanings and connotations (Mayer, Perkins, & Caruso, 2001). The concept is perhaps best understood through a synopsis of its history, which is fully explained within Chapter II of this thesis. Briefly, the theoretical ancestry of construct can be traced to Thorndike's (1920, cited in Roberts, Zeidner, & Matthews, 2001) theory of social intelligence. Social intelligence was defined as wisdom in social contexts due to the ability to understand and manage people (cited in Roberts et al, 2001). EI also has a significant overlap with Gardner's (1983) conceptualisations of intrapersonal and interpersonal intelligences. Intrapersonal intelligence refers to a person's ability to gain access to his/her own emotions, and as the name suggests, the interpersonal arm involves discerning others' emotions, moods and desires.

Mayer and Salovey (1993, 1997b; Salovey & Mayer, 1990) can lay claim to the modern EI concept. A wider recognition of the construct, however, was fed by the popular, yet largely unsubstantiated, work of Goleman (1995, 1998). Alternate writers have generated other conceptualisations of EI (e.g. Bar-On, 1997; Cooper & Sawaf, 1997; Davies, Stankov, & Roberts, 1998; Petrides & Furnham, 2000). Only Mayer and Salovey's (1997b) definition, however, appears to equally consider both emotions and intelligence at its core (Lam & Kirby, 2002). According to Mayer and Salovey (1997b), EI reflects a composite of a number of abilities theorised to contribute to the accurate perception, understanding, utilisation and

management of one's emotions and the emotions of others. This definition is attractive because it infers that these abilities form a cognitive intelligence via the use of information to solve problems. The definition also accounts for an affective reasoning process. On the basis of this theory development, Mayer, Caruso, and Salovey (2000a) differentiated between mixed and ability models of EI. It was noted that mixed models incorporate a wide range of trait factors, while the ability model is a strongly cognitive definition (Mayer et al., 2000a). As such, EI research generally remains divided between testing EI as a set of abilities and surveying EI as a mixed-model construct. While seemingly contradictory, Ciarrochi, Chan, Caputi, and Roberts (2001) argued that these two approaches can be complementary, with both types of studies yielding potentially useful information.

Interest in the EI concept has flourished, in part, due to the increasing significance of emotional management in today's society (Roberts et al., 2001). Work-based EI research has gained particular momentum given assertions that it is related to a number of significant occupational and organisational success indicators (Abraham, 1999; Chen, Jacobs & Spencer, 1998; Cooper & Sawaf, 1997; Dearborn, 2002; Elfenbein & Ambady, 2003; George, 2000; Goleman, 1995; 1998; 2001a; 2001b; Jordan, Ashkanasy, Haertel & Charmine, 2002; Salovey & Pizarro, 2003). The importance, from a managerial perspective, is that some researchers consider EI to be crucial to exceptional leadership (Ashkanasy & Tse, 2000; Barling, Slater & Kelloway, 2000). Given the potential value of such leadership, attention has turned to issues such as how EI develops (Gardener & Stough, 2002), its likely consequences (George, 2000) and its applications to the workplace (Zeidner, Matthews, & Roberts, 2004). In terms of the latter, Zeidner et al (2004) summarised a study of benchmark practices amongst major

corporations, which found that nearly 80 per cent are endorsing EI in some way. Despite this apparent ubiquity, much of the interest in EI and leadership has arguably been propagated by overstated claims within the popular media as opposed to unequivocal research evidence (see Matthews, Zeidner & Roberts, 2002 and Chapter II). Yet research in the leadership area is starting to develop, mostly in relation to EI and transformational leadership (Ashkanasay & Tse, 2000).

The most effective leaders are generally identified as being able to engage in both transformational and transactional leadership (Vera & Crossan, 2004). Transformational leaders, in contrast to their transactional counterparts, are more likely to appeal to followers' instrinsic motivation to carry out organisational goals. There is growing opinion that transformational leaders achieve this through higher levels of EI (Bass, 2002). However, to solidify a link between the two constructs, it becomes necessary at this point to broaden the study of EI and transformational leadership beyond existing cross-sectional designs (e.g. Barling et al. 2000; Gardner & Stough, 2002; Palmer et al., 2001; Sosik & Megerian, 1999; Srivsastava & Bharamanaikar, 2004). This becomes more important considering the positive impact of transformational leadership on a number of employee outcomes, including organisational trust. Transformational leaders are held to build trust by conveying their readiness to comprehend the individual needs and capabilities of followers, and to serve those needs (Fairholm, 1992). Empirically, research findings generally suggest that most transformational leadership practices are positively associated with the perceived trustworthiness of the leader (Butler & Cantrell, 1999; Gillespie & Mann, 2004; Podsakoff, MacKenzie, Moorman, & Fetter, 1990; Posner & Kouzes, 1988). Trust in a leader may then

flow to employee attitudes and intentions, such as cynicism regarding change initiatives and a willingness to stay with an organisation (Albrecht & Travaglione, 2003). This overview introduces the core ideas of the present thesis.

Research Problem and Aims

The research aims to answer the following research problem: *To what extent does emotionally intelligent leadership affect selected employee perceptions, attitudes and intentions?* Two studies are presented in response to this question, each with interrelated objectives. The major study (Study 1) aims to construct a set of valid instruments sourced from a survey that asks employees to; (a) assess their leader's EI and transformational leadership, and, (b) self-report on their levels of trust, change cynicism and intention to leave. A chief objective is to then examine a structural model that delineates relationships between the survey variables over time. The study also aims to validate results across a public sector and private sector organisation. Through these processes, the argument that leader EI influences employees' intention to leave and change cynicism via transformational leadership and trust is presented.

A second, smaller study (Study 2) aims to explore the effects of leader EI from an ability perspective. To achieve this end, Study 2 uses psychometric EI ability-testing of immediate managers and matches these scores with employee survey responses. The conclusion that the effects of leader EI are dependant on the EI model utilised, as well as the type of EI measurement and the implemented statistical methodologies is presented.

Essentially, the differences between an EI survey instrument and two EI ability tests are explored.

Preliminary research hypotheses are offered within Chapter II. Subsequent results from each stage of the analysis feed into the development of more specific hypotheses, which are presented at the beginning of Chapters IV to VIII.

The focus of leadership for this research is on the EI and transformational style of an employee's immediate manager. An immediate manager for the purpose of this study is defined as the person to whom an employee reports directly; that is, the 'leader' who is next in the hierarchy. An employee's immediate manager may be at a supervisory, line-management, team leader, middle management or senior management level depending on the position of the direct-report employee. This foci was chosen because employees often identify their immediate manager as the most important person affecting their experiences at work (Branham, 2004).

Justification of the Research

It is proposed that the results of the research will have implications for both researchers and organisational practitioners. As mentioned, there remains a relative scarcity of robust, peer-reviewed research to match popular interest in the EI concept (Landy, 2005). The studies presented in this thesis should lead to new insights into, and understanding of, behaviour of people in organisations and more specifically to leader emotional intelligence, leadership practices and employee responses as important contributors to organisational

effectiveness and efficiency. There is ample evidence in the literature to be sure that transformational leadership, trust and lowered intention to leave contribute to the success of an organisation (e.g. Bass, 1997; Kramer, 1999; Cohen, 1991), which makes them worthwhile constructs to study. The research will also add to the development of knowledge surrounding change cynicism, which is a relatively new construct and thus scantily researched. Considering the predicted continuation of large-scale organisational change (Senior & Fleming, 2006), change cynicism may become a 'hot' research topic in organisational psychology. The relationships between the aforesaid variables and emotional intelligence will also be studied for the first time within the one design, adding to the uniqueness of the research.

The research can also be justified due to the distinctiveness of the methodology (Chapter III). The longitudinal nature of Study 1 answers calls for EI research to move away from correlational research that currently dominates the literature in the area (Landy, 2005). The focus is on an empirically based construct validation approach that is both theory driven and systematic. The use of confirmatory factor analysis, (SEM) equations modelling and cross-validation procedures across two disparate organisations is rare in published organisational research and will add significantly to the generalisability of findings. An additional strength is the use of employee appraisal of leaders' EI and leadership style, which may be more objective compared to the prevailing self-rating methodology. The observer method reduces common-method bias for two variables, which can contribute to inflated correlations (Kobe, Reiter-Palmon, & Rickers 2001). In regards to the Study 2, EI ability testing of leaders is exceptional within the extant literature (see Chapter II). In the

organisational arena, there are no published journal articles comparing an EI ability test to an EI survey, and certainly none studying the relationship between ability-based EI and the variables under investigation. The matching of leader EI test scores to employee responses on an organisational survey is also unique to this thesis. In sum, aspects of the methodology will address some conspicuous gaps in the organisational literature.

Of practical significance will be the insight into new relationships among variables that contribute to organisational practices. Managers should be able to use the information to develop new approaches to the creation of desirable organisational outcomes, such as greater trust and more positive change attitudes. The expected results may have substantial implications for the selection, training, performance appraisals and job descriptions of organisational leaders. EI may be found to provide a preliminary indication of leadership potential, and could be integrated into assessment procedures during recruitment (Barling et al., 2000). For example, EI testing may improve human resource professionals' ability to predict who will be a transformational leader. Current research also supports the idea that managers can be trained to use positive leadership practices (Barling et al., 1995). If the relationships between EI, transformational leadership and employee outcomes eventuate, organisations should promote EI training programs to foster organisational performance. A related practical implication concerns the use of employee ratings of their leaders in the current study. Leadership trainers and consultants could consider developing this methodology by using EI within the delivery of 360-degree feedback processes for more accurate and useful performance appraisals. Thus, the potential practical implications of the thesis show how the findings may enhance organisational climates and performance.

Outline of the Thesis

The principal aim of the present chapter is to provide an overview of the thesis. Chapter II addresses central aspects of the literature concerning EI and associated variables. The theoretical foundations and history of the concept are outlined before drawing attention to the various ways that EI has been conceptualised, modelled or defined. The modes of measuring EI are reviewed before presenting an overview of whether EI can be developed. The relationship between EI and demographic variables is then presented, and the possible distinction between EI and emotionally intelligent behaviour is drawn. Work-related EI research is then critiqued. Attention is given to an overview of each of the remaining study variables, and justifications of the interrelationships between EI, transformational leadership, organisational trust, change cynicism and intention to leave are presented. The chapter finishes with a summary model of the hypothesised relationships that have been drawn from the literature.

In Chapter III, the methodological procedures used to investigate the effects of leader EI are reviewed. Information relating to the samples of Study 1 and Study 2 is given, before a presenting a review of the implemented measurement instruments. The procedures for Study 1 are then outlined. A case is made for the use of confirmatory factor analysis and SEM as the favoured techniques to; (a) Determine the construct validity of variables in the employee survey, and, (b) Explore relationships between the employee survey variables. Processes for testing a measurement model from the survey instrument are described. Procedures to estimate structural models are illustrated before longitudinal modelling methods are outlined. Then, the processes involved in Study 2 are reviewed. The procedure used to match leaders'

EI results on the ability test to the employee survey responses is described. Then, a case is made for the use of regression analysis rather than SEM procedures to analyse the predicted relationships.

Chapters IV to VI describe the three stages involved in the analysis of the employee survey results (Study 1). In Chapter IV, the dimensionality of the variables included in the employee survey is explored. Exploratory and confirmatory factor analyses are conducted to determine construct validity. The number of underlying characteristics or dimensions within the survey is then determined. It is shown that eight dimensions are sufficient to encapsulate the variables of interest. The emergent trust in manager, trust in organisation, change cynicism (pessimism) and intention to leave factors correspond with the theories behind the construction of their corresponding scales. However, the EI-Perception, EI-Management, and two transformational leadership factors are inconsistent with the dimensionality of the original questionnaires on which they are based. The confirmation of the convergent and divergent validity of the three to four item scales is described. The measures are upheld across two independent samples and after controlling for dispositional trust and geographical location (Australia versus the United States of America).

In Chapter V, a structural model of relationships between the emergent constructs is assessed. As recommended by the SEM literature (Breckler, 1990), alternative cross-sectional models are investigated to determine the best-fitting model. Evidence is provided to support a first-order model of relationships, although two higher-order models also provide an acceptable fit to the data. Then, justifications for the choice of the first-order model as the

preferred representation are presented. Tests of mediation are conducted to clarify

relationships. The results show that both dimensions of leader EI have a direct or indirect

effect on the other survey variables. Evidence is reported to support the significant association

between leader EI and both dimensions of transformational leadership. Leader EI is then

shown to impact on intention to leave and change cyncism via interrelationships between

transformational leadership and trust. This cross-sectional structural model is also shown to be

invariant across two heterogeneous samples.

In Chapter VI, the structural model is studied longitudinally. Evidence is displayed to

show that the relationships are upheld over a twelve month time frame. The test-retest

reliability of results is then demonstrated. Overall, the results support that the meaning of the

constructs remained stable over time, and the reported relationships were relatively stable.

Chapter VII describes the analysis of Study 2. In this chapter, the effects of ability-

tested leader EI are explored in relation to the emergent employee survey variables. Evidence

is provided to show the marked differences between ability-tested EI and survey-measured EI.

The association between ability-based leader EI and each emergent survey construct is then

assessed. Here, evidence is provided to show that leaders' EI ability test scores are, for the

most part, positively related to transformational leadership. Yet results are shown to be

ambivalent for the other employee constructs.

The final chapter (Chapter VIII) provides a summary of the major findings of the thesis. Conclusions about the research problem are drawn and the theoretical and practical implications of the research are discussed. Then, limitations are outlined and future research paradigms are highlighted. A case is made to support the unique contributions of the research to the wider body of knowledge.

Conclusion

In summary, this chapter has laid the foundations for the thesis. The background to the research was introduced before the aims and research problem were presented. Then, the research was justified and the content of the chapters were outlined. From these fundamentals, the thesis can proceed with a detailed description of the research, beginning with an overview of the literature (Chapter II).

CHAPTER II

LITERATURE REVIEW

Introduction

Organisational behaviour (OB) involves the systematic study of actions and

attitudes exhibited by those employed within organisations (McShane & Travaglione,

2003). Weinberger (2002) noted that these behaviours and attitudes may be channelled

through experienced emotion. These emotions may be propagated through workplace

frustrations, stresses, or enjoyments, which are embedded within organisational roles and

inform workplace processes. Organisations- and the procedures, attitudes and emotions

within them- are thus a network of feedback systems which may consequently create

various outcomes and impact on organisational performance.

In today's turbulent business settings, increasing demands on organisations to

outperform competitors can act as a catalyst for leveraging human capital. To this end,

research into leadership, employee attitudes, and subsequent outcomes has grown

exponentially within the OB field. Some research suggests that environmental pressures

elevate the need for leaders to have sufficient abilities to perform effectively during

periods of instability (Argyris, 1993; Schmidt, 1997). In these situations, where

consultation and participation are advocated, 'soft' skills have been deemed important for

leadership effectiveness (Connell, 1998). 'Soft' skills are also commonly referred to as

'social', 'people' or 'interpersonal' skills involving the ability to be flexible, problem-

solve, build trust and work co-operatively in a team. These are compared to 'hard' skills,

which include formal or technical knowledge (Karpin, 1995). Popular writers have recently

advocated that 'soft' skills emanate from an underlying, interconnected, emotional

intelligence (EI) (Cooper & Sawaf, 1997; Goleman, 1995; 1998). Recent affirmation of

the pivotal role of EI in successful leadership and business has been met with keen interest from organisational researchers and practitioners.

Scientific efforts to further develop evidence of EI's role in organisations have greatly increased in the past few years. The role of emotions, however, has only recently been accredited as "a valid and pertinent area of scholarly discourse" (Ashkanasy & Tse, 2000, p.221) in organisational contexts. The purpose of this review is to examine particular themes and unresolved questions in terms of emotional intelligence in organisations. Ultimately, it seeks to explore the possible role of EI in leadership and the subsequent effects of emotionally intelligent leadership on employee trust attitudes, cynicism towards change and their willingness to stay with an organisation. Looking to the framework of EI and its relationship with these factors may indicate a mechanism for engendering both organisational effectiveness and direction for future research.

This chapter conceptualises the problem under investigation by critically reviewing the theoretical and historical foundations of EI. Since the expression 'emotional intelligence' suggests a marriage of both 'emotions' and cognitive 'intelligence', these fundamental components are appraised before comparing and contrasting various models of EI. Both ability and mixed-model perspectives are illustrated. Existing EI measurement approaches are presented, and the relationship between EI and personality is explored. An overview of current research detailing the role of EI in the workplace is surmised. This discussion links with the presentation of research into transformational leadership, trust, change cynicism and intention to leave. Closing arguments summate the potential interrelationships between these variables.

Theoretical Foundations of Emotional Intelligence

To provide a base for the current state of research in the area of EI, an understanding of its principal components is required, as is knowledge of the concept's ancestry. The following overview notes the emergence of EI from the psychological domain within the general study of emotions and the area of multiple intelligences.

Emotion and Mood

Many modern definitions consider 'emotion' to be an adaptive response to environmental events that have implications for continued survival (Ekman & Davidson, 1994; Salovey & Mayer, 1990; Spector & Fox, 2002). These descriptions generally consider the construct to reflect a "state that has cognitive, behavioral and physiological components, interdependent processes between those components, and likely activators and outcomes" (Robins, 2002, p.3). For instance, Wallbott and Scherer (1989) describe the five components of experienced emotion as the evaluation of the situation, physiological changes, motor expression, motivation for behaviour, and subjective feeling states. It is suggested therefore that emotions can actively be perceived and acted upon. However, the base elements of emotion may be subjective, automatic and indiscernible (Forgas, 1992).

Though highly interrelated, the factor that distinguishes emotions from moods is said to be the level of intensity (George, 2000; Salovey & Mayer, 1990). Moods are considered to be generalised feeling states that may not be connected to particular events (George, 2000). Clark and Isen (1982) argue that moods are not sufficiently intense to interrupt ongoing thought processes. Emotions, however, can be high intensity responses that are triggered by particular internal or external stimuli. As such, emotions can be a pervasive influence on thoughts and behaviours (Forgas, 1992). This is not to say,

however, that emotions are always high intensity experiences. Low intensity emotions, such as 'bored', 'calm', and 'satisfied', are more subtle responses and may also influence how a person responds to his/her environment (Clark & Isen, 1982).

Brief and Weiss (2002) also note that moods are often, but not always, described in terms of underlying dimensions such as 'positive' or 'negative'. This contrasts with the standard labeling of emotions as discrete forms, such as 'anger', 'joy', 'fear' and 'happiness'. George (2000) further suggested that emotions often feed into moods. George (2000) argued that "once the intensity of an emotion subsides because the individual…has dealt with its cause, the emotion lingers on in the form of a less intense feeling or mood" (p.1029). Thus it can be seen that emotion and mood are both affective states and likely to have disparate effects on workplace outcomes. Potentially, this may be due to their differential ability to impact on cognitive processes and behavioural intentions (George, 2000).

Precursors to Emotion

Possible antecedents that cause emotions to may include a surfeit of biological, psychological and situational variables, including personality and social conditioning (Solomon, 1993). According to Izard (1993), emotion is not only an outcome but can itself shape the nature of each of the above antecedents. For instance, emotions may influence developing character traits, as well as being affected by those traits. Similarly, negative incidences may incite pessimistic emotions. Pessimism, in turn, may also lead to a greater chance of negative experiences via a self-fulfilling cycle. Emotion most typically acts to help formulate intentions to engage in specific behaviours, rather than immediately eliciting actual behaviours (Spector & Fox, 2002). Pervin (1993) comments on the

intricacies of the area by noting that the same emotion may also be associated with different intentions or behaviours in different situations, and dissimilar emotions may also be aligned with the same intentions in different situations.

These complexities make it challenging to formulate an integrative representation of emotion. Past research, however, supports that individual interpretation is the basis for the affective state experienced (Lazarus, 1991). That is, an emotion is often noted as a function of an individual's cognitive appraisal (LeDoux, 1996; Mayne & Bonanno, 2001). Lazarus (1982) suggested that when a person interprets an experience as enhancing well-being, a positive emotion will be felt. Alternatively, a perceived threat to well-being may stimulate a negative emotion. Cognitive appraisal can serve to interpret the environment and the actions of people within it, and can also act as a regulator. For example, during an argument, reducing conflict-orientated perceptions may negate the experience of anger. LeDoux (1996) notes, however, that emotions can operate outside of the usual cognitive process. Schulkin, Thompson and Rosen (2003) also suggested that emotions function at different levels, some of which are traditionally noncognitive. In sum, it appears that the connection between cognition and emotion is more complex than cognitive appraisal theory would suggest. The cognitive-based management of emotions, however, is one of the primary dimensions of many EI models (Robins, 2002).

Emotions in the Workplace

The essential role of emotion in relation to cognition and behaviour has received increasing attention in work contexts (George, 2000). Although the study of emotion at work first emerged in the 1930s (Brief & Weiss, 2002), it was Hochschild's (1983) seminal work on emotional labour that signified a renaissance in the area. Hochschild

termed 'emotion labour' as the act of trying to change in degree, or quality, an emotion or feeling. It is, as Fineman (1996) noted, "the buying of an employee's emotional demeanor; the individual is being paid to 'look nice', smile, be caring, be polite" (p. 546). Studies have subsequently looked at employees' experience of stress or 'emotional dissonance', where there is incongruence between the way in which they are expected to feel and the way in which they really feel (Fineman, 1995). Research into 'emotional contagion' has also detailed how emotions may have a ripple-effect onto others and the organisation (Barsade, Ward, Turner, & Sonnenfeld, 2000). That is, people can 'infect' others with their emotions (Barsade et al., 2000). Ashforth and Humphrey (1995) stated that emotional contagion may be a positive force if it makes people happier and productive, but a negative influence if destructive emotions, such as unwarranted hostility, are dispersed. Despite the wealth of emotion in work contexts, it appears that neither emotional experiences, nor their possible contingent outcomes, can be easily subsumed in a fully-inclusive model.

The study of emotion in organisations was initially obstructed by a lack of clearly defined theories linking emotional variables to other aspects of organisational research (Weick, 1979). However, recent frameworks profess to identify some emotional processes in work contexts. In particular, Weiss and Cropanzano's (1996) Affective Events Theory (AET) recognises that employees seldom carry out their work in an objective fashion based on detached, cognitive calculation. Instead, they suggested that workplace incidences comprise a succession of pleasing, neutral or frustrating work events that can affect cycles of emotions, intentions and behaviours over time. Weiss and Cropanzano (1996) documented that the causes and consequences of these emotional cycles remain to be explored, and acknowledged that identifying phases was not the same as explaining

them. Nonetheless, in alliance with AET, Brief and Weiss (2002) noted that most

organisational research "closely follows findings from basic literature on the cognitive and

behavioural effects of affective states" (p. 293). That is, emotional experience influences

performance-related outcomes, such as judgements, attitudes, risk-taking behaviour,

creativity and helping behaviour. From AET and accumulated emotions research, it is

apparent that emotions are relevant to individual functioning at work. Being able to

activate or control emotions to facilitate work behaviours and social adaptation is an

important skill, and one that is different from time-honoured cognitive skills traditionally

defined as intelligence (Robins, 2002).

Intelligence, Multiple Intelligences and EI

The term 'intelligence' is used differently by different people (Salovey & Mayer,

1990). Early psychologists who explored the dynamics of intelligence focused on

cognitive abilities such as memory, comprehension, and reason (Sternberg, 2000). This

approach propagated the development of sophisticated psychometric intelligence testing

and the idea of an intelligence quotient (IQ), which was based on performance on certain

verbal, mathematical and memory-related tasks (Gardner, 1999).

At that stage, it was commonly acknowledged that IQ represented a measure of

general cognitive intelligence, which was defined as the ability to acquire and use basic

knowledge (Gardner, 1999). Within this perspective, there were two basic assumptions.

First, that individuals are born with fixed potential intelligence, and secondly, that general

intelligence can be measured (Gottfredson, 1998). However, it was concluded that the

concept of general intelligence said little about explicit competencies it was comprised of

(Roberts et al., 2001). This led to partitioning the construct into subcategories, such as verbal and crystallised intelligence (Roberts et al., 2001).

Tests of cognitive intelligence were used as predictors of success in some organisational areas such as job performance and decision-making (Gardner, 1999). Experts, however, debated both the predictive validity of the tests and the confounding factors that impacted on test scores (Shobris, 1996). For instance, IQ tests could not gauge the extent to which a person could adapt to everyday experiences, cope with conflict, or acclimatise to social and interpersonal settings (Robins, 2002). As criticisms of classical notions of cognitive intelligence received more attention, theorists turned to the exploration of other types. Salovey and Mayer (1990) argued that one of the most cited definitions of intelligence is Wechsler's statement that it "is the aggregate or global capacity of the individual to act purposefully, to think rationally, and to deal effectively with his environment" (p. 196). This description alluded to the possibility that intelligence was not only rooted in cognitive ability, but equally determined by social skills.

Early formulations of intelligence that can be linked to the conception of EI include social, practical, and personal intelligences. It has been suggested that EI initially derived from Thorndike's (1920, 1936, cited in Roberts et al. 2001) conception of social intelligence (SI), defined as the ability to manage and understand people, and to act wisely in social contexts. Despite considerable interest in defining and measuring SI, these endeavours proved fundamentally problematic (Roberts et al., 2001). Mayer and Geher (1996) noted that the difficulties in selecting criteria for validating SI measures led to a decline in studies centering on the concept. Sternberg and Wagner (1986) later developed a model of practical intelligence (PI) in order to encapsulate analytical, creative and

practical abilities in everyday life. Conceptually distinct from 'academic intelligence', and comparable to SI, PI includes a person's capacity to recognise and capitalise on strengths while concurrently compensating for weaknesses (Sternberg & Wagner, 1986).

A third framework was suggested by Gardner (1983) who stated that individuals possess 'multiple intelligences'. The first two include 'linguistic intelligence' and 'logical-mathematical intelligence', and have been typically valued in the educational psychology literature (Gardner & Hatch, 1989). The next three are labelled 'musical intelligence', 'body- kinaesthetic intelligence', and 'spatial intelligence'. The final two are what Gardner (1999) called the 'personal intelligences' (Gardner 1999). Firstly, 'Interpersonal intelligence' is concerned with the ability to understand the intentions, motivations and needs of other people and allows people to work and socialise effectively with others. Secondly, 'Intrapersonal intelligence' involves the capacity to understand oneself, to appreciate one's emotions, fears and motivations. Gardner (1999) claimed that the seven intelligences rarely operate autonomously and are usually implemented at the same time. In essence, the theory states that each individual has a unique blend of intelligences. For example, someone could be academically bright yet be

unable to socialise effectively. It was the emotional characteristic of the personal

intelligences that staged the pursuit of connections with EI research.

Gardner (1999) declared that an important part of the two personal intelligences is

processing affective information within oneself and other people. This is an idea that

clearly preceded all EI theories with obvious associations to 'the self' and to 'others'.

Intriguingly, Gardner (1999) has contested the categorisation of EI as a discrete

intelligence, stating that the ability to access feelings forms part of personal intelligence

rather than being a separate entity. In this respect, EI may be thought of as a component of

intrapersonal and interpersonal intelligence. In the very least, EI overlaps considerably

with Gardner's conception of personal intelligence, Sternberg and Wagner's (1986)

practical intelligence and Thorndike's (1923, in Roberts et al., 2001) idea of social

intelligence. However, Sternberg (2000) asserted a specific focus of EI on emotional

growth and emotional problem-solving is distinct from other categorisations and, as such,

expands the frontiers of research in the area.

Competing EI Models and Definitions

Mayer and Salovey's Perspective

Among the many academics who have contributed to the development of the EI

construct, Mayer and Salovey (1997b; Salovey & Mayer, 1990) continue to be of chief

importance. They originally defined EI as "the ability to monitor one's own and others'

feelings and emotions, to discriminate among them and to use this information to guide

one's thinking and actions" (p. 189). The original 1990 model detailed three conceptually

related mental processes involving emotional information processing. These processes

included: (a) appraising and expressing emotions in the self and others, (b) regulating

emotion in the self and others, and (c) using emotions in adaptive ways (with explicit

subdimensions including flexible planning, creative thinking, redirected attention, and

motivation). While the two former categories could be described as abilities, the latter

dimension included a mix of abilities, traits and behaviours. Because of this slightly

broader perspective, this early model cannot be described as a genuine EI ability-model

(Mayer et al., 2000a; Schutte et al., 1998), but is sometimes mistaken as such in the

literature.

Mayer and Salovey (1997b) later adjusted their conceptualisation of EI by placing

greater emphasis on cognitive skills and deleting references to specific traits like

motivation. By separating mental abilities from important traits, it was possible to analyse

the degree to which emotional abilities independently contributed to a person's behaviour

or success (Mayer et al, 2000). This latter model officially defines EI as a set of abilities

within four skill branches. Like the original model, the first skill dimension involves the

perception, appraisal and expression of emotion in self and others. This ability may

include identifying emotions in other people and expressing emotions through language or

by other means. The second skill dimension *utilises emotional assimilation in thinking.*

Implicit to this characteristic is the weighing of emotions against one another, and against

other sensations and thoughts. It also allows for emotions to direct attention and thus may

be essential to selective attention, self-monitoring and self-leadership. The *understanding*

and reasoning about emotions and emotional knowledge is the third dimension. This skill

includes the ability to understand relationships associated with shifts in emotion, and the

capacity to label complex emotions and feelings (For example, to understand that anger

may arise from frustration). The final skill dimension involves the *regulation of emotions*

in self and others to promote emotional and intellectual growth. This facet is most related to social functioning and problem-solving (see Mayer et al., 1997b; Mayer et al., 1999 for a full overview).

The revised model is characterised by a merger of affective and cognitive domains, the premise being that an affective reasoning process defines a type of intelligence (Mayer, et al., 1999). The theory predicts that EI is in fact an intelligence, like other intelligences, in that it would meet the following three essential criteria. First, mental problems have correct or incorrect answers where scores reflect performance rather than a preferred way of behaving. Second, the measured skills should correlate with pre-existing measures of mental ability as well as self-reported empathy. Third, the abilities can develop with age (Mayer et al., 1999). Mayer and Salovey (1997b) also suggested that these abilities are arranged hierarchically whereby emotion perception was labeled the most basic psychological skill, and emotion regulation is the most complex. Thus the ability model allowed for mastering four abilities and their sub-components in sequential order.

The Mayer and Salovey (1997b) model is often touted as the most valid interpretation of EI (Mayer et al., 2000a), yet it still has its detractors. For example, Gardner (1999) mentions that the psychometric tradition invoked by Mayer et al. (1997b) may be too narrow in terms of the definition of an 'intelligence'. Roberts et al. (2001) have also questioned what kind of an intelligence EI may be under the Mayer et al. (1997b) framework, challenging its credentials as an intelligence. Roberts et al. (2001) were mostly concerned that tests of this model, unlike IQ measures, could not include one set of correct answers as individual opinions about answers digress too much. This and

other concerns about the reliability and validity of ability tests will be considered later in this chapter.

Davies, Stankov and Roberts(1998) offered another conceptualisation that could be classified within the ability-domain. After conducting a qualitative review of the EI literature, they prepared a four-dimensional definition, which was quite similar to Mayer and Salovey's (1997b) revised model. The first and second dimensions of the model included the appraisal and expression of emotion in oneself, and the appraisal and recognition of emotion in others. These can be related to Mayer and Salovey's (1997b) perception of emotion. The third component was the regulation of emotion in oneself, analogous to the managing emotion element in Mayer and Salovey's (1997b) model, although the latter also extended to the management of emotions within social relationships. The fourth category involved the use of emotion to facilitate performance, comparable to Mayer and Salovey's (1997b) utilisation of emotion branch. Davies et al did not develop a corresponding measure of EI, however, Law, Wong, and Song (2004) later chose their typology as the basis of a self-report measure.

One consequence of framing EI within an ability model was that it effectively excluded many of the dimensions introduced by other EI theorists such as Goleman (1995) and Bar-On (1997). For instance, Mayer and Salovey's (1997b) ability model is narrow in focus and strongly cognitive. As such, they distinguished their model from 'mixed models', which were stated to be socioemotive. That is, abilities within these perspectives are implanted alongside personality traits or other attributes. Petrides and Furnham (2000) proffered a broader distinction between the two types of models by differentiating between "trait" and "information-processing EI" (p. 314). They applied the different measurement

approaches and operational definitions adopted by mixed and ability-model theorists.

While Petrides and Furnham (2000) proposed that it is the nature of the measurement

method "rather than the theory per se that determines the nature of the (EI) model"

(p.314), essentially their categorisation of 'trait' and 'information-processing' was the

equivalent of Mayer et al's (2000a) ability and mixed-model classification. The

discussion now turns to an overview of these mixed-models and their scholarly

contributions.

Mixed-Models of EI

Goleman (1995; 1998) is the best-known proponent of a mixed-model of EI,

channeling a wide recognition of the construct via popular books in the 1990s.[1] His

writings were loosely based on the pioneering model of Salovey and Mayer (1990), which

he significantly extended by using neuroscience and other psychological theories to help

shape an EI classification. Goleman (1995) provided a persuasive, yet sometimes

unsubstantiated, argument concerning the links between EI and performance. He noted

that the field of neurology provided the key to understanding emotions and the

foundations of emotional intelligence. For example, evidence was presented to show that

when a stimulus triggers an automatic stress response, the neocortex is bypassed in favour

of the amygdala in the limbic region (Goleman, 1995). This process can overpower

rational thought processes. The prefontal lobes, however, can serve to control these

responses. Hence, Goleman (1995) concluded that the key to developing high levels of

emotional intelligence is to develop and strengthen relevant neural pathways in the

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[1] Goleman, D. (1995). *Emotional intelligence*. New York: Bantam Books.

  Goleman, D. (1998). *Working with emotional intelligence*. New York: Bantam Books.

prefrontal lobes, since the malleable nature of the human brain permits such development (Goleman, 1998). Furthermore, Goleman (1995) recognised that individuals have genetic predispositions towards some EI characteristics (e.g. optimism), although arguably his latter writing has downplayed hereditary issues (1998; 2001a). Goleman's core premise that appropriate emotional responses can be learnt has been an influential factor in generating interest in the EI, particularly in its application to leadership and to the workplace. This assumption will be discussed shortly in the context of the role of EI in organisations. First, an outline of Goleman's EI classification will be presented.

Goleman (1995) defined EI as the ability to, "motivate oneself and persist in the face of frustrations; to control impulses and delay gratification; to regulate one's moods and keep distress from swamping the ability to think; to empathize and hope" (p.34). Within this view, Goleman (1995; 1998) deserves credit for moving towards a competency based model where EI is represented as five key components. While all were viewed as important, he stated that the relative importance of each component could differ depending on the demands of different jobs. The first three components are designated as the personal competencies: 1. *Self-awareness* involves knowing one's internal states, preferences, resources and intuitions. It also involves having a realistic assessment of self-ability and a well-grounded sense of self-confidence; 2. *Self-regulation* is managing one's internal states, impulses, and resources. It involves regulating emotions so as to avoid task interference, delaying gratification to pursue goals, recovering from emotional distress and being conscientious; 3. *Motivation* refers to emotional tendencies that guide or facilitate reaching goals and the use of passions to drive one towards one's goals, to persevere and strive to improve. The other two key elements are designated as the social competencies: 1. *Empathy* is awareness of other's feelings, needs, and concerns, with an emphasis on

rapport building; 2. Finally, *social skills* involve adeptness at inducing desirable responses in others, and focuses on negotiation and persuasive skills. Goleman described EI, in general, as, "a set of traits that could describe someone's character" (1995, p.34).

Although considerably different and wider-reaching than the original Mayer and Salovey (1990) model, Goleman's (1995; 1998) framework has been criticised for being unrepresentative of an intelligence due to its tendency to tap into the domain of personality and achievement-motive theory (Mayer et al., 2000a). Goleman (2001a) later revised the model to delete motivation as a core domain and include four reworked dimensions (Self-Awareness, Self-Management, Social Awareness, and Relationship Management). The dimensions consisted of twenty competencies. While Goleman (2001a, p. 20) argued that the new model "seems to meet the criteria for a pure model" of intelligence, on close inspection, the revision is basically very similar to the earlier model. Factors such as 'achievement drive' and 'trustworthiness' remain absorbed into the revised components. The model is based on displayed behaviours said to stem from emotional competencies (Goleman, 1998), but these behaviours likely integrate personality.

The probability of Goleman's models (1995, 2001a) meeting the first of the essential intelligence criterion is arguably negligible. That is, it is unlikely Goleman's (1995) model can be scored via mental problems that are reflective of performance, rather than a preferred way of behaving. Indeed, how specific competencies in his model are related to the more expansive concept of EI is ambiguous. As Zeidner, Matthews and Roberts (2004) have remarked, "it is presently unclear to what extent a number of specific competencies may be nested within each of these facets…Whether placing all such concepts under the EI banner confuses, rather than clarifies, the role of emotional

competencies in the workplace would seem a contentious point" (p. 379). However, many

people, particularly consultants, have prescribed to this all-encompassing approach. The

model is widely in use today (Roberts et al., 2001). Despite limitations, which arguably

apply to most mixed-model perspectives, measures based on the Goleman model (1995)

may still provide some important information concerning behaviours relating to emotional

competence (Ciarocchi, 2005, in Mayer, 2005). This is issue will be revisited when

various EI measurements are evaluated in Chapter III.

Other mixed models have been proposed to capture the fundamental dimensions of

emotional intelligence. One interpretation is from Bar-On (1997). Like Goleman (1995;

1998), and in direct contrast to Mayer and Salovey (1997) who chose to hone their

prototype, Bar-On (1997) expanded the EI concept to include personality characteristics

and mood states. His resultant mixed-model definition of EI was, "an array of

noncognitive capabilities, competencies, and skills that influence one's ability to succeed

in coping with environmental demands and pressures" (Bar-On, 1997, p.14). He presented

an assortment of personal, emotional, and social abilities within his model, and identified

five broad areas of functioning relevant to life success. These broad areas included: 1.

Interpersonal Skills, 2. *Intrapersonal Skills*, 3. *Adaptability*, 4. *Stress Management*, and 5.

General Mood, with each area being subdivided into smaller components. For example,

'general mood' included optimism and happiness (Bar-On, 1997). Within this model, the

'interpersonal skills' construct overlaps with Goleman's category of 'social awareness' but

not with Mayer and Salovey's (1997) classification, which excluded social interactions.

While Robins (2001) stated that the latter three categories are largely unique to Bar-On

(1997), adaptability is actually included in the 'self-management' aspect of Goleman's

(2001) typology. Moreover, stress issues are addressed by Cooper and Sawaf (1997,

detailed below). Yet Bar-On seems to be the only theorist to include general mood in an EI model.

Like Goleman's model (1995), Bar-On's (1997) classification probably does not satisfy the proposed criteria for actual intelligence. However, Bar-On (1997) offered the following justification for his use of the term 'emotional intelligence' by proposing an alternate definition of intelligence; "Intelligence describes the aggregate of abilities …that… represent a collection of knowledge used to cope with life effectively. The adjective emotional is employed to emphasize that this…type of intelligence differs from cognitive intelligence" (1997, p. 15). Bar-On (2000) qualified this by saying that the model encompasses "emotionally and socially competent behavior that provides an estimate of one's emotional and social intelligence" (p. 364). Consequently, in saying his model provides an antecedent to actual EI, he has been careful in linking his classification with important outcomes, such as perceived competence and commitment Bar-On (1997). He has stated that the related Emotional Quotient Inventory (EQ-I, reviewed below) reflects the potential to succeed, rather than success itself. The same could possibly be said for any EI classification.

Cooper and Sawaf (1997) devised another influential mixed-model. They proposed the most wide-reaching of the EI conceptualisations by framing EI as the "ability to sense, understand, and effectively apply the power and acumen of emotions as a source of human energy, connection, and influence" (p. xiii). Their model lists four 'cornerstones' of EI. The first cornerstone is 'emotional literacy', which includes the possession of emotional honesty, emotional energy, practical intuition and emotional feedback. The second cornerstone is 'emotional fitness', characterised by resilience, an authentic presence, the development of a wider trust radius, and the ability to gain credibility and trust from a

broader circle of people (constructive discontent). Next, the 'emotional depth' cornerstone seeks the development of characteristics such as commitment, influence, accountability and applied integrity, while the final cornerstone, 'emotional alchemy', includes the skills of sensing opportunities, creating the future, intuition and reflection. With these competencies, values and attitudes, Cooper and Sawaf (1997) also pointed to the importance of looking at environmental concerns, such as life stresses, and the potential outcomes of EI, such performance, health, good relationships and quality of life. Undoubtedly, this model extends far beyond any EI conception discussed thus far to include a variety of characteristics and competencies potentially associated with effective leadership. A difficulty here is that the broader the EI perspective, the more difficult it is to measure and attribute to key outcomes (Weinberger, 2002).

An Integrative Perspective

It is apparent that there is confusion regarding the precise definition of EI. While the various EI perspectives seem incongruous, they do appear to have some commonality. First, as Ashkanasay and Daus (2002) imply, one assumption of each model, ability or mixed, seems to be that individuals differ in their degree of emotional intelligence. Another common notion is that individuals can possibly be trained to improve their emotional competence (Bar-On, 1997; Cooper & Sawaf, 1997; Goleman, 1998; Mayer & Salovey, 1997b). Moreover, the ability to identify and perceive emotion in oneself and others, and to understand and manage emotions, appear as common elements across the diversity of EI models (Ashkanasy & Daus, 2002). Ciarrochi et al. (2000) went a step further to say that the measures based on the various models tend to overlap in "four distinct areas: emotion perception, regulation, understanding, and utilization" (p. 540). Indeed, in a review of the EI literature, they surmise that "while the definitions of EI are

often varied for different researchers, they tend to be complementary rather than contradictory" (Ciarrochi et al., 2000, p. 540).

In addition to the debate over what EI precisely is, it is not unforeseen that controversies remain regarding its measurement. Ciarocchi et al. (2001) observed that some theorists and researchers have questioned the value of EI and are beginning to provide counterarguments to its existence. Some have suggested that emotional intelligence is conceivably a new name for old concepts, such as a positive personality (Matthews, Zeidner, & Roberts, 2002). To explore these debates and help establish the contribution of EI, methods of measuring EI will be examined.

Measuring Emotional Intelligence

More than other popular constructs being researched in the field of organisational behaviour, the EI literature seems to be dominated by issues relating to measurement. Like its parent field of general intelligence, the conceptualisation of EI is arguably symbiotic with how it is operationalised. This probably explains why the literature reviews of many influential EI studies include an overview of EI measurement debates before they report on subsequent issues or links between EI and other variables (e.g. Davies et al., 1998; Izard, 2001; Mayer et al., 2003; Newsome et al., 2000; Roberts et al., 2001). In this tradition, the following dialogue provides a short overview of EI measurement. This discussion showcases tools that evaluate EI in two ways: performance test-instruments that assess EI as an ability, and surveys based on either ability-model or mixed-model conceptions.

Ability-Based Performance Measures

The theoretical ability model has propagated the construction of various performance-based EI instruments. The Mayer Salovey Caruso Emotional Intelligence Test (MSCEIT; Mayer et al., 2000b, 2002) is a relatively new measure. Its precursor was an earlier research version of the scale (MSCEIT Research Version 1), which came after the various versions of the Multi-Factorial Emotional Intelligence Scale (MEIS; Mayer, Salovey & Caruso, 1997b; 1999) and an emotion perception tool (Mayer, Dipaolo & Salovey, 1990). Each of these tests asks a person to solve emotional problems. For example, the test-taker might be requested to identify the emotion in a series of faces, or in a hypothetical vignette, and their answers would be measured against established criteria of accuracy. A full critique of the MEIS and MSCEIT is provided in Chapter III. Some studies have supported the conceptual validity and reliability of both ability tests (Ciarrochi, et al, 2000; Mayer et al., 1999, 2003; Roberts, et al, 2001), yet their use has stimulated strong debate concerning their factor structure, scoring and psychometric properties. In addition, while preliminary evidence of the reliability of the MSCEIT is equivocal, results from two extant studies suggest an improvement in the validity of scoring methods and factor structure compared with the MEIS (Mayer et al., 2003; Palmer et al., 2003). Performance-based instruments such as the MEIS and MSCEIT may have the most potential for furthering research in the area of emotional intelligence, at least from an ability perspective (Weinberger, 2002). Given its brevity and adequate psychometric properties, the MSCEIT is perhaps the scale of choice for assessing EI organisational environments. However, there are potential problems with its operation, as discussed in the following methodology chapter.

Surveying EI

In addition to performance-based tests, surveys offer another alternative to measuring EI in organisational settings. These self-report, other-report and multi-rater tools generally invite an individual to evaluate his/her own, or another's EI, via an array of descriptive statements. When constructing their own self-report EI tool Schutte and colleagues (1998) proposed that the "development of tools to assess emotional intelligence has not kept pace with interest in the construct" (p. 167). Since that time however, the available literature reveals a litany of available survey tools, mostly based on mixed-model conceptions and a smaller number derived from the ability-model. Chapter III displays a critical summary of some of the chief EI survey instruments in use today. The methodology chapter also details some psychometric concerns relating to some of these instruments, such as low reliability (e.g. Hay Group, 2002), a lack of factorial validity (eSchutte et al., 1998), an absence of independent research predicting important outcomes (Wong & Law, 2002), a tendency to overlap with personality variables (Ciarrochi, et al., 2000; Higgs, 2001; Muchinsky, 2000) and possible response-set bias inherent in the self-report method. Yet despite many limitations, self-report or other-rated EI surveys have some distinct advantages for the researcher, such as their usability and cost-efficiency, their mostly strong reliability, and their ability to investigate behaviours related to emotional competence (Ciarocchi et al., 2001).

Emotional Intelligence vs. Emotional Competence/Behaviour

At this juncture, it is important to mention that past research has only found modest correlations between self-rated and actual intelligence measures (Paulhus et al., 1998; Mayer et al., 2000a). For example, Brackett and Mayer (2003, $N = 207$) found a correlation of $r = .21$ between the Mayer Salovey Caruso Emotional Intelligence Test

(MSCEIT; Mayer et al., 2000b) and the Emotional Quotient Inventory (EQ-I; Bar-On, 1997), and $r = .18$ between the MSCEIT and the Self Report Index (SRI; Schutte et al., 1998). The relatively weak relationships between the two types of EI measures- which are supposed to be measuring comparable constructs- suggests that they may be measuring somewhat different concepts or at least different aspects of the same concept. This inference has significant implications to both researchers and practitioners. EI investigators must theoretically and practically reconcile weak correlations between existing instruments that are all supposedly measuring EI (Ciarocchi et al., 2001; Zeidner et al., 2004). Perhaps the EI models or measures need adjustment, or more suitable names for what they are really quantifying are needed (Robins, 2002). This may be particularly true for survey-type measures that do not reflect actual performance and do not correlate strongly with general intelligence. It could be proposed that they are not measuring an intelligence, and could be aptly named as measures of 'emotional competence' (Ciarrochi et al., 2001) or 'emotionally intelligent behaviours' (Ciarrochi, 2005, cited in Mayer, 2005). The emotional competencies/behaviours themselves could represent the degree to which an individual has mastered specific, skills and abilities that build on EI and allow them greater effectiveness in the workplace (Goleman, 2001). As Ciarrochi (2005, cited in Mayer 2005) noted, emotionally unintelligent behaviour transpires when emotions obstruct effective action, while emotionally intelligent behaviour occurs when emotions do not impede effective action, or when emotions assist effective action. Ciarocchi (2005, cited in Mayer, 2005) argued further that emotional intelligence (as an ability) is one set of processes hypothesised to promote emotionally intelligent behaviour. Essentially, the choice of instrument is dependent on the EI model to which one adheres, and on the objectives of the specific research and/or planned organisational practices.

EI and Demographics

Research into individual differences has helped to explore the relationship between EI and various demographic characteristics. With respect to gender and EI, the literature is relatively scarce and somewhat mixed. Some previous findings with both the MEIS and self-report scales have found that women scored higher than men on overall EI (Ciarocchi et al., 2000; Mayer et al., 1999; Mandell & Pherwani, 2003). However, with a self-report scale, Petrides, Furnham and Martin (2004) found that EI gender differences disappeared when participants rated subcomponents of EI, some of which represented areas in which men tend to outperform women (e.g., emotion control; Eysenck & Eysenck, 1985). Roberts et al. (2001) initially found that females scored higher than males on composite MEIS scores compared to their male counterparts, yet noted the direction of this effect varied as a function of the scoring criteria implemented. Males outperformed females when the test was scored in a different way. More recent findings with the MSCEIT have shown greater convergence across scoring approaches, with females slightly outperforming males (Mayer et al., 2003; Palmer et al., 2003b). However, differences do not seem as apparent with the use of self-report measures (Bar-On et al., 2000; Nikolaou & Tsaousis, 2002; Slaski & Cartwright, 2002).

While the consistency of gender differences across contrasting population samples requires further investigation (Mayer et al., 2003; Palmer et al., 2003), in aggregate, findings support that women score slightly higher on EI, at least when measured with an ability-test. However, this may not be generalised to all types of EI competencies and every situation. As stated, men may outperform women on the management of emotions. Notwithstanding, the conclusion that women have slightly higher EI seems consistent with the considerable body of research on interpersonal social skills, which is strongly related

to EI. This research has reliably demonstrated a gender effect with "females being more perceptive, empathetic, and adaptable than males" (Petrides & Furnham, 1998, p. 452; see also Schutte et al., 1998). To help explain similar results, Feldman Barrett, Lane, Sechrest, & Schwartz (2000) have speculated that women may be more socialised in their articulations and perceptions of emotional experiences than men. Although little is known about the underlying hereditary influences on EI, it is also possible that women may be better equipped biologically to process emotional information (Mayer et al., 1999).

Other demographic variables proposed to impact on EI scores include age, position, and tenure (Cavallo & Brienza, 2002). In respect to age, Mayer et al. (1999) found evidence that EI developed from early adolescence to young adulthood. Schaie (2001) noted that if EI is an intelligence, ability-based EI should certainly vary with both experience and age. Yet the cross-sectional design used by Mayer et al. (1999) only allowed for interpretation of age-group differences, not developmental differences (Roberts et al., 2001). To some extent, the age-EI relationship remains an enigma without long-term longitudinal research. Secondly, Sala (2002) reported that a study of EI and job characteristics found participants in higher-level positions, such as senior management, rated themselves as having higher EI compared to those in lower level positions (e.g. lower management or non-management). When the same managers were rated by others no relationship between EI and position level was found. It is possible that the relationship between EI and position is dependent on the culture of the organisation. For example, the relationship between EI and position level may be weak within a company culture that promotes seniority over skills related to EI. Correspondingly, the association between tenure and EI may be dependent on environment, or even non-existent. While tenure is often included as an individual difference factor in organisational EI research, little

evidence linking the two variables has been found (Higgs & Dulewicz, 2003; Vakola et al., 2004).

Developing EI

A factor contributing to the proliferation of EI theories is the belief that, unlike IQ, emotional intelligence can be developed (Emmering & Goleman, 2003). This has generated a degree of debate. For instance, there is a strong consensus amongst mixed-model proponents that EI is a developable trait or competency (Dulewicz & Higgs, 2004). Although Dulewicz and Higgs (2004) note that this consensus is not as evident in the ability-model literature, various EI development programs apply the ability-based MSCEIT within their framework. A more cynical view is that EI, like personality, is strongly influenced by genes, which makes it a less malleable quality than the popular literature would have people believe (McCrae, 2000). In response, Emmerling and Goleman (2003) have argued that, while genetics may play a central role in EI development, "geneticists themselves challenge as naïve the assumption that nurture does not impact nature: gene expression itself appears to be shaped by the social and emotional experiences of the individual" (p. 20). Matthews et al. (2003) have noted that significant progress has occurred in identifying the biological, social and cognitive processes that build emotional competencies, and implied that approximately half of the variance in temperament can be attributed to environmental influences. However, issues have arisen in the literature in relation to the stages of an individual's life at which processes designed to develop EI are most successful (Dulewicz & Higgs, 2004). It has been argued that EI interventions in childhood are probably the most effective (Goleman, 1995). Indeed, Salovey and Sluyter's (1997) edited book, *Emotional Development and Emotional Intelligence*, reports on numerous links to educational research which provide persuasive

support for such a hypothesis. Yet there are more reservations about the development of EI in adulthood (Dulewicz & Higgs, 2004).

Evidence that adults can improve on emotional intelligence competencies comes from a variety of areas. The field of affective neuroscience is one source of emergent support. Emmerling and Goleman (2003, p. 21) have commented that, "new findings …have begun to demonstrate that the brain circuitry of emotion exhibits a fair degree of plasticity, even in adulthood". Moreover, recent investigations into 'mindfulness' training, which is an emotion self-regulation technique, have revealed that emotional training may modify the brain centers that control different emotions (Davidson & Kabat-Zinn, 2003; Emmerling & Goleman, 2003). Other findings from the fields of psychotherapy and emotional training programs provide some confirmation of the ability to improve social and emotional competence with persistent effort (Emmerling & Goleman, 2003).

Perhaps the strongest foundation of support for adults being able to acquire EI skills comes from the management intervention literature. Longitudinal studies have investigated changes in EI scores after training and various experiences. One study found that 59 middle managers had significantly higher EI scores after a six month timeframe which involved four days of experiential EI training (Dulweicz & Higgs, 2004). Similarly, Dulweicz, Higgs and Slaski (2003) found improvements in EI scores based on a comparison of an 'EI training group' with a control group after the training group had attended a short EI course. In a survey of management training programs, Cherniss and Goleman (2001) concluded that interventions aimed at EI-based competencies are effective and tend to improve desired outcomes such as self-awareness and rapport.

While Cherniss and Goleman (2001) noted that "taken together, all these interventions demonstrate that it is possible for adults to develop EI competencies" (p. 214), some scepticism towards this assumption is defensible. No reported evaluation study has implemented an ability test, only self-report or other-report methodologies. Many of the studies also had inadequate sample sizes and may have been biased by the investigators' (or consultants') desire to confirm the value of EI programs. Also, in relation to the studies by Dulewicz and Higgs (2004) and Dulewicz et al. (2003), one could be cynical about EI levels improving from a four-day course. Such findings imply that significant improvement of social and emotional competencies is easily accomplished, yet it is probable that individuals are unlikely to improve greatly on any given aspect of their emotional intelligence without sustained attention (Goleman, 1998). Paradoxically, Dulewicz and Higgs (1999) have previously argued that managers may need a year of individual coaching and mentoring if significant EI development is to occur. While some research may support that EI can be developed, further evaluation studies would be an appreciable addition to the literature (Emmerling & Goleman, 2003).

EI in the Workplace

Initial Claims

Several "hyperbolic" claims have appeared in the popular literature and the media about the central role of EI to organisations (Matthews et al. 2002, p. 467). Drawing from consulting work with over 500 organisations by the Hay Group, Goleman (1995) bred the notion that EI (rather than traditional intelligence or IQ) accounts for over 85 per cent of outstanding performance in top leaders. Yet Goleman (1995) was unable to cite empirical data supporting any link between EI and any of its hypothesised, positive effects (Zeidner et al, 2004). Based on Goleman's (1995) work, *Time* magazine's 1995 cover asked

'What's your EQ?' and stated that emotional intelligence may be the best predictor of success in life, redefining what it means to be 'smart' (Gibbs, 1995). Cherniss and Caplan (2001) contended that an EI program at American Express with financial advisors "resulted in over $200 million more in sales revenue" (p. 287) and an 18.1 per cent increase in business for participants. However, the control group-members did not undergo EI training also reported a 16.2 per cent rise in sales revenue during the same time (Robins, 2002). Watkins (2000) suggested, albeit without experimental evidence, that the "Use of EI for recruitment decisions leads to 90-percentile success rates" (p. 91). Indeed, the potential links between EI and success has compelled many to attempt EI development initiatives, but as Cherniss (2000) stated: "This notion is somewhat simplistic and misleading" (p. 21). Mayer et al. (2000a) argued that if experimental findings uncovered emotional intelligence as the best predictor of success in life, then this finding would perhaps be the most important scientific result over the past 100 years. Mayer et al (2000a) cautioned that there is negligible evidence to support claims of EI predicting success. Yet Mayer and Salovey's work is perhaps not as readily accessible to the public. The reality is that much of their work is contained in academic journals that are not as comprehensible or available compared to books and websites from EI populists (e.g. Goleman, 1995; 1998) and EI management consultants. An unfortunate consequence is that, while it is likely that EI has positive effects in the workplace, much of the freely available information is probably exaggerated.

The popularity of the concept has generated various applications of EI. Recently, the use of EI measures for career selection and placement purposes has started to gain momentum (Zeidner et al., 2004). Zeidner et al (2004) also recalled an investigation of benchmark practices among major corporations which found that four out of five

companies are now trying to promote EI in their organisations. They state that "the concept of EI is thought to be useful when evaluating ongoing functioning and the well-being of employees at critical stages of their careers (i.e. selection, training, placement, and promotion)" (p. 376). The pervasiveness of the EI concept clearly demonstrates the significance of conducting solid empirical work concerning its actual relationship with important outcomes.

Outcomes of EI at Work

In order for the interest in EI in the workplace to be maintained, researchers will have to show empirically-based outcomes of value to organisational practitioners. While research into the organisational outcomes of EI is in its infancy, the literature suggests a number of potential benefits or consequences which may be associated with EI, such as job performance (Higgs, 2004). However, Barrett et al. (2001) have argued that the enthusiasm surrounding EI stems from the concept being inappropriately linked to past research and inflated claims. They identified a number of incongruities between affirmations made by significant proponents regarding EI and the results of the actual research they cite (Barrett et al., 2001). In fact, as well as positive results, there have also been a number of negative findings in relation to the predictive validity of EI (Barrett et al., 2001). A number of empirical studies are briefly reviewed in Table 2.1.

Table 2.1

A Review of EI Workplace Outcome Studies

EI Outcome Variable	Researchers (Year); Sample; *Variables measured*	Findings, Contribution and Limitations
Career Advancement	Dulewicz and Higgs (2000); Studied 59 managers over 7 years; Self report instruments implemented for *EI and cognitive intelligence*	EI explained an additional 36 per cent incremental variance to the prediction of career advancement over seven years, above cognitive intelligence; The study did not assess all EI dimensions such as awareness and regulation (Zeidner et al. 2004); Self-reported intelligence problematic; small sample
	Palmer et al. (2003c); n = 3012 Australian employees (general workplace), and n = 1059 Senior Executives with mean salary $150K; Genos *EI self-report*	Executives scored significantly higher in total EI compared with general workplace normative group by 2/3 standard deviation; Suggests EI may be related to occupational success; From the study design, we cannot be sure of the influence of EI relative to other factors, or causal directions; Emphasises that position level may be an important influence on EI.
Performance (and related factors)	Higgs (2004); n = 289 call centre employees from three organisations; EI self-report; Personnel department evaluation of *staff performance*	Overall EI moderately correlated with call centre performance ($r = .46$); One EI component (intuitiveness) negatively related to performance; Measure of perceived performance questionable.
	Janovics and Christiansen (2001); 176 undergraduates; Used the MSCEIT; TMMS and Schutte EI tool; Supervisor ratings of *employee performance*	MSCEIT EI had a small yet significant relationship with reported performance ($r = .22$); Perception and Understanding were the only significant branch correlates; EI added 3 per cent to incremental variance of performance criterion; TMMS and Schutte EQ test unrelated to performance.
	Nel, De Villiers, and Engelbrecht (2003); 135 South African call centre employees; ECI other-rated; Objective computer-assessed indices of *job performance* such as lapse index, number of calls handled per hour, productivity on systems	EI had a moderately strong relationship with job performance ($r = .53$); Self-management cluster had the strongest relationship; EI explained between 43 to 60 per cent of the variance in job performance skills depending on the work environment (sales, service, administration); Job performance measure did not take 'quality' issues into account, such as friendliness to customers; 'Other-rating' more objective but possibly problematic (measured perceived EI only).

EI Outcome Variable	Researchers (Year); Sample; *Variables measured*	Findings, Contribution and Limitations
Perform-ance (and related factors) contin…	Palmer et al. (2003c); Measured *self-reported EI* via Genos/ SUEIT with; 1. Subjective *performance ratings*; 6 superiors rated 51 subordinates in job performance *2. Absenteeism data, coping with stress, job satisfaction and commitment;* 57 employees from 4 organisations	1.Significant positive relationship between EI subcomponents and job performance (r = .33-.39); not large effect sizes 2. Higher EI less likely to suffer from stress and have lower rates of absenteeism; greater organisational commitment related to higher EI; significant effect sizes from .32 to .65. Small samples for both but useful as a base for further research.
	Bar-On (1997); n = 324 US and Canadian employees; self-rated EQ-I; self-rating of '*sense of competence'*	Bar-On asserted that the data indicated a strong connection between EI and performance, but the correlation (r = .51) only tapped into feelings of competence, not performance; Objective data would have further supported claims.
	Elfenbein and Ambady (2003); 69 employees from a nonprofit organisation; Measured *emotion recognition* (eavesdropping) using an accurate nonverbal emotion diagnostic test; Peer and supervisor *ratings of performance*	Mixed results; Emotional recognition may be a help or hindrance to perceived performance; Eavesdropping on nonverbal cues can be detrimental for performance ratings if negative expressions perceived, but can actually be valuable for positive expressions recognised; Other components of EI not targeted.
	Slaski and Cartwright (2002); n = 224 retail managers; Self-report EQ-I; Company's own competency framework on *management performance* measured; *general health, psychological outcomes (morale, distress, quality of worklife)* and *subjective stress* also calculated.	Significant links between higher EI and: performance (r = .22), good health (r = .55), morale (r = .55), reduced distress (r = -.57), quality of worklife (r = .41), reduced stress (r = .41); Manager performance did not correlate with interpersonal EI, only intrapersonal EI; Each of the uncovered relationships (apart from performance) probably related more to personality rather than EI.
	Day and Carroll (2004); n = 246 undergraduates; Measured *MSCEIT EI, personality, performance on cognitive decision-making task; group/individual citizenship behaviour rated by each participant*	Only MSCEIT emotion perception predicted individual task performance, results not significant for other three EI factors; MSCEIT not related to individual-level citizenship, however ratings of group citizenship (civic virtue and sportsmanship) related to own EI scores; Conducted in a lab setting so problem-solving exercise may not have been representative of a 'real-world' managerial task

EI Outcome Variable	Researchers (Year); Sample; *Variables measured*	Findings, Contribution and Limitations
Perform-ance (and related factors) contin…	Law, Wong and Song (2004); 165 first-line supervisors from mainland China; Measures back-translated from English into Chinese; Measured self-rated EI, personality, task performance and contextual performance (interpersonal facilitation and job dedication) assessed by three methods (self, peer, and supervisor-rated).	EI a good predictor of job performance, accounting for 10% of variance in performance variables when peer-ratings used; This result was not confounded by self-report and found after controlling for personality; Findings with an ability test would support further conclusions.
Interview Outcomes	Fox and Spector (2000); n = 116 undergraduates in a simulated structural job interview with psychometric testing; Measured EI using an *empathy* scale, *TMMS*, and *researcher-rated non-verbal behaviour*. Also measured *trait affect, general (IQ)* and *practical intelligence*, and *'Decision to hire'* index.	Some emotional competencies related to interview outcomes; TMMS not related to outcomes; IQ and practical intelligence important determinants; No effort made to partial out effects of IQ or trait affect (Zeidner et al., 2004); Simulated environment a limitation.
Workplace Attitudes and Stress	Vakola, Tsaousis, and Nikolaou (2004); n = 137 professionals from Greece; Study measures included *self-report attitudes towards change, EI, traits personality questionnaire, single job satisfaction item,* and *intention to turnover.*	Greater EI significantly related to change attitudes ($r = .53$), with smaller but significant correlations with higher job satisfaction ($r = .19$), and lower turnover intention ($r = -.23$); EI explained an additional 8 per cent variance in attitudes towards change after controlling for personality (particularly the use of emotions for problem-solving); No measures of previous change experiences; cross-sectional design does not allow for causal inferences.
	Abraham (2000); n = 79 customer service representatives; *self-report EI, job control, job satisfaction* and *organisational commitment measures.*	EI predicted a large amount of variance in job satisfaction and commitment but more so when introduced with job control; High EI employees may require autonomy in decision-making to be satisfied and committed.
	Wong and Law (2002); 146 middle-level administrators in Hong Kong; Leaders *self-reported EI* and subordinates *self-reported on own EI* and *self-reported* on *satisfaction, in-role extra-role behaviour* and *job characteristic.*	Leader EI had a small yet significant positive relationship with employees' in-role/extra-role behaviour ($r = .21$), job perception ($r = .25$), and job satisfaction ($r = .26$); Provided preliminary evidence of effect of leader EI on job outcomes; distinctive sample probably not representative
	Nikolaou and Tsaousis (2002); 212 mental health professionals from Greece; *Self-reported EI, occupational stress* and its effects (*commitment, physical health and wellbeing*).	Moderate links between EI, stress and commitment ($r = .37$ to $.59$); Limited generalisability of a unique sample; Possible confounding from common method variance.

EI Outcome Variable	Researchers (Year); Sample; *Variables measured*	Findings, Contribution and Limitations
Workplace Attitudes and Stress contin…	Bar-On (1997); sample of 314 participants (salespersons, teachers, college students, and nurses); Self-report EI via the EQ-I, commitment, and job satisfaction.	Reported a modest relationship between total EI scores and job satisfaction; Sub-scale scores assessing Self-Regard, Social Responsibility, and Reality Testing predicted about 20 per cent of the variance in work satisfaction; The nature of that link varies from occupation to occupation (Zeidner et al, 2004).
Conflict Manage-ment / Problem-Solving Style	Rahim and Psenicka (2002); n = 1395 MBA students in seven countries; *subordinate-rated EI of supervisor* and subordinate *self-reported conflict management style* obtained at separate times.	Causal modelling supported that supervisor EI motivation was positively associated with subordinates' use of problem-solving strategy and negatively associated with bargaining strategy; Various components of EI influence conflict management strategies of employees across seven countries; Data from convenient samples
	Rahim and Minors (2003); n = 222 US members of the Chambers of Commerce; *subordinate-rated EI of supervisor, self-rated supervisor concern for quality* and subordinate *problem-solving*.	Supervisor EI significantly influenced employee problem-solving and supervisor concern for quality; Low response rate (<25 per cent); May have been affected by common method variance.

In total, Table 2.1 suggests that the empirical reality of EI research has not yet supported many of the exaggerated claims espoused by the popular media. For example, while it is not uncommon to find a relationship between EI and performance, the first part of the table shows these relationships to be relatively modest. Cherniss (2000) did warn that "both Goleman (1998) and Mayer, Salovey, and Caruso (1998) have argued that emotional intelligence probably is not a strong predictor of job performance. Rather, it provides the bedrock for competencies that are" (p. 21). Despite this, Landy (2005) countered that cross-sectional EI studies have added little to organisational theory and development, and has fervently argued against the utlility of conducting work-related EI research.

Other academics have argued that this pessimism is premature. Five years ago, Mayer and Cobb (2000) acknowledged that fewer people were embellishing claims about EI, with more people heeding factual research. They noted that "the real live facts of emotional intelligence are quite encouraging - that is, it does seem to predict important outcomes" adding that , "if those predictive levels are far from the levels that some of the claims above suggested, they are still of considerable practical and conceptual importance" (p. 165). Ashkanasy and Daus (2005) have further supported this view, remarking that organisational EI research is escalating and continues to feature prominently in esteemed journals such as *The Journal of Applied Psychology*, *The Journal of Organisational Behavior* and *Human Performance*. Several of the reviewed studies in Table 2.1 show that EI research has added to the prediction of workplace outcomes above and beyond that predicted by personality and/or cognitive intelligence.

Workplace studies with ability-tests seem particularly lacking, yet this is likely to change. Daus and Ashkansay (2005) reviewed several conference papers that displayed important relationships between MSCEIT-measured EI and workforce performance indicators. In the first of these studies, Daus (2002, cited in Daus & Ashkansay, 2005) found that perceiving emotions was inversely related to job performance in a customer-service based simulation, and managing emotions was positively associated with performance. While this result seems counterintuitive, an explanation was observed in terms of the simulation involving a customer service person serving an angry customer: "If one can read the emotions well, but not manage them, job performance may be worse because one knows that the customer is in a poor mood, but yet they can not do anything about it" (Daus & Ashkansay, 2005, p. 461). A second study used 'secret-shopper' ratings and objective sales data (Cage, Daus, & Saul, 2004, cited in Daus & Ashkansay, 2005).

This research also revealed pertinent findings with the MSCEIT, with managing emotions being related to increased sales performance, and using emotions being associated with significantly better 'secret-shopper' ratings. A third paper using 44 employees (Lopes, Cote, Grewel, Kadis, Gall, & Salovey, 2005, cited in Daus & Ashkansay, 2005) demonstrated that those with higher MSCEIT scores received "greater merit increases, held higher company rank, and received better peer and supervisor ratings of interpersonal facilitation, stress tolerance, and leadership potential" (p.461). These findings were obtained above and outside of personality and cognitive intelligence. Despite the small sample size being an obvious limitation to the latter study (Lopes et al. 2005, cited in Daus & Ashkanasy, 2005) it was interesting to observe that the higher-order abilities ('understanding' and 'managing') were related to more impartial factors such as salary and rank. In contrast, an individual's basic abilities in perceiving and using emotion were significantly associated with subjective ratings of their performance by peers and supervisors (Lopes et al. 2005, cited in Daus & Ashkanasy, 2005). These studies encourage further research into the predictive validity of ability-based EI.

Along with performance, some of the findings observed in Table 2.1 show that a person's EI and EI-related competencies/behaviours are likely to play some role in attitudes such as commitment, job satisfaction and citizenship behaviour (e.g. Palmer et al., 2003a; Vakola et al., 2004). Some studies also support that the EI of a leader may significantly impact on the experiences of their subordinates at work (e.g. Rahim & Minors, 2003; Wong & Law, 2002). Indeed, a leader's competencies and actions can evoke or sustain behaviour and attitudes amongst employees (Howell & Costley, 2006).

While the general impact of EI on performance and other organisational factors is up for debate, the link between leadership and EI is receiving increasing support. Most

empirical research in this area has focused on the relationship between EI and transformational leadership (Bass, 2002). A critical summation of research surrounding transformational leadership is warranted before continuing with an overview of its links to EI.

Transformational Leadership

Overview of Transformational Leadership

The most effective leaders are generally identified as being able to engage in both transformational and transactional leadership (Vera & Crossan, 2004). Transformational behaviours, in particular, are argued to be central to exceptional employee and orgnanisational outcomes (Bass, 2002). Transformational leaders, in contrast to their transactional counterparts, are more likely to appeal to followers' inner drives to carry out organisational goals (Bass, 2002). The term 'transformational leadership' (TL), was coined in 1978 by Burns (cited in Flanagan & Thompson 1993, p.9). It is defined by Howell and Avolio (1993) as a perspective that explains how leaders facilitate change by creating, communicating, and modelling a vision, and inspiring employees to strive for that vision. According to Bass and Avolio's (1995) revised model of Bass' (1985) original transformational-transactional paradigm, if leadership is transformational, its *idealised influence* sets high standards for emulation. Its *inspirational motivation* provides followers with challenges and meaning for engaging in shared goals and activities. Its *intellectual stimulation* assists followers to query assumptions and to generate more innovative solutions to problems, and its *individualised consideration* treats each follower as an individual and provides coaching, mentoring and growth opportunities (Bass, 1985). A transformational leader elicits followers' intrinsic motivation to help employees reach optimal performance (Bass, 2002).

In contrast, Howell and Costley (2006) remarked that transactional leaders generally appeal to employees' self interests via an exchange relationship. That is, "followers exert effort for the purpose of getting contractual benefits from the leader or group" (Howell & Costley, 2006, p. 255). There are both positive and negative aspects to the transactional approach. Employees under transactional leadership are more likely to be moved by leaders' external promises, praise, and incentives via *contingent-reward*. These contingent-reward behaviours are task-focused. Barling et al. (2000) also noted that these actions are positive and discretionary, which is how each of the TL behaviours could be described. Rather than be placed under a transactional guise, contingent reward may be better aligned with transformational actions (Palmer et al., 2001). This proposition is supported by studies that have found high correlations between transformational and contingent-reward dimensions (Druskat, 1994; Palmer et al., 2001). Moving reward giving to transformational leadership would pose problems, however, for the underlying meaning of transactional leadership as an exchange relationship. The fact that the transformational and transactional dimensions do not appear to be discrete, could also mean that the fundamental model is unsound and in need of adjustment.

In terms of other transactional leadership dimensions, employees may be corrected by negative feedback, reproof, threats, or disciplinary actions via an *active management-by-exception* style. These behaviours should not necessarily be viewed as negative. There are many situations that may require such corrective action (e.g. reprimanding an employee who always submits late reports). The same employees may also be managed using *passive management-by-exception.* Passive leaders fail to intervene until after work-related problems occur (Howell & Costley, 2006). Intuitively, while this style could have very negative consequences in some situations (e.g. ignoring destructive conflict that

could cause high turnover), it may also be the correct course of action in other circumstances (e.g. empowering employees to make their own decisions). The final leadership style outlined by Howell and Avolio (1993) is non-transactional *laissez-faire leadership*, which involves a total neglect of leadership authority and responsibility.

As stated, it is argued that TL is not merely a replacement, but a supplement to the more positive elements of transactional leadership (Waldman, Bass and Yammarino, 1990). Depending on the situation, both transformational and transactional abilities are often needed for effective leadership. For example, an effective leader may have to use active management by exception to correct an employee who has engaged in intentionally unsafe work practices. Another leader who rewards an employee for good performance is employing contingent-reward behaviours. Den Hartog, Van Muijen, and Koopman (1997) stated that the chief distinction between transactional and TL was that the former entails the leader motivating followers to perform as expected, whereas the latter entails the leader inspiring followers to perform beyond expectations. Hence, transformational aspects may differentiate a good manager from an exceptional one (Bass, 2002).

Despite TL receiving a great deal of attention in the literature (Bass, 2002), there are signs of increasing world-weariness with the concept. Since the publication of Kotter's (1990) *A Force for Change,* there has been substantial debate about the role of new forms of leadership behavior required in organisations, in addition to a transformational style. Subsequently, some authors have been critical of the emphasis that has been placed on TL. Guest (1992) is one of the more influential critics, and has stated that much of the TL literature is shallow in its evidence base. Storey (2004) also noted several theoretical shortcomings with the transformational paradigm. For example, it is not clear which of the

transformational behaviours have greater importance, and there is a neglect of environmental factors such as market forces that could significantly impact on the suitability of transformational behaviours to certain organisations. Likewise, Conger and Kanungo (1998) and Sankowsky (1995) note the potentially 'shady' side of a charismatic, assertive, forthright leader. They argue the dangers of associated misuse of power and potential exploitation of dependency among employees if the leader's ethics are not aligned to the needs of others. Appointed transformational leaders can also destabilise the organisations in dangerous ways (Storey, 2004). However as Storey (2004) notes, it is unlikely that the ideas surrounding TL will be abandoned; "the allure of a leader who promises to point to new appealing directions and also mobilize and energize followers will continue to be irresistibly appealing…as long as organizations require innovation, this kind of leader will be sought" (p. 34). The dynamic environment of many organisations appears to have induced continued interest in transformational change agents.

TL has to be measured successfully to fully gauge its effects. Bass and Avolio (1995) developed the Multifactor Leadership Questionnaire (MLQ) to measure transformational, transactional and laissez-faire leadership dimensions. Versions of this instrument were based on Bass' (1985) model of leadership and later revised to reflect Bass and Avolio's (1995) updated paradigm. The MLQ is a multi-rater tool that allows; (a) Leaders to report on themselves and/or, (b) Employees to report on their leader. According to Parry (1998), it is the most widely used measurement of transformational and transactional leadership characteristics. It also appears that the majority of the literature has supported the reliability of the MLQ (Bono & Judge, 2003), although some studies have accentuated inconsistencies in the factorial validity of the instrument (Careless, 1998). A critical examination of the MLQ is contained within the methodology chapter of

this thesis. Psychological properties aside, the instrument has arguably advanced our knowledge of the predictors and outcomes of TL.

One factor that makes enquiries into the predictors and outcomes of TL difficult is that the direction of the relationships is not always readily identifiable. Like many of the reviewed EI studies, most research in the area relies on correlational designs, which do not allow for causal interpretations. For instance, a study using correlational design found that 'perceived leader integrity' and TL shared a significant statistical relationship (Parry & Proctor-Thomson, 2003). The researchers, however, were unable to determine whether higher levels of perceived leader integrity evoked increased TL, or whether the causal direction was reversed. The causal direction between EI and TL may have been non-existent if the relationship was due to a third unmeasured variable. Nevertheless, a discussion of TL correlates is justified to inform knowledge of potential relationships between a transformational style and a number of influential variables.

Antecedents of Transformational Leadership

In comparison to outcome studies, there is sparse research into the antecedents of TL. One predictor of a transforming style appears to be gender. Two recent meta-analyses found that, overall, female leaders were significantly more transformational than male leaders (Eagly, Johannesen-Schmidt, & Van Engen, 2003; Van Engen & Willemsen, 2004). In addition, the earlier review found that females engaged in more contingent-reward behaviours, while male leaders were more likely to manifest other aspects of transactional leadership (active and passive management by exception, and laissez-faire leadership). Sweeping assumptions based on gender are at times tenuous due to wide-spread exceptions. There is also alternate evidence to suggest that women and men can lay

equal claim to the TL label (Manning, 2002). However, as TL and contingent-reward are most often associated with more successful leadership practices, the aforementioned meta-analyses suggest that, on average, women may display slightly more effective leadership styles when compared to men. This may be because a TL style emphasises relationship-oriented behaviours that female leaders may be somewhat more likely to exhibit. Even if TL was completely androgynous, women leaders may still have to cope with negative evaluations in some principally 'male' cultures (Manning, 2002).

Other studies show that a leader's source of motivation, fit to the position and personality may be precedents to transformational behaviours. Barbuto, Cundall and Fritz (2004, $N = 186$ leaders and 759 employees) found that instrinsically motivated leaders were more likely to be transformational compared to those who were extrinsically motivated. Extrinsic motivation was significantly related to transactional leadership. A further longitudinal study that used multisource field data (Sosik, Potosky & Jung, 2002, $N = 64$ managers, 192 employees) found that a discrepancy in a manager's fit with their position was associated with negative feedback. Sosik et al (2002) inferred that this feedback tended to mobilise managers to become more transformational, in turn adapting to the expectations of the organisation. The investigators also made tentative causal interpretations, saying that the ability to self-monitor positively influenced transformational behaviours (Sosik et al., 2002). A further study explored personality as a possible predictor of TL (Hetland & Sandal, 2003; $N = 100$). This research showed that personality traits such as warmth, reasoning, and openness to change, explained a modest but significant portion of the variance in TL when rated by subordinates. This finding is consistent with work from Howard and Bray (1988) and Atwater and Yammarino (1993) that also showed personality was a precedent to TL.

EI and TL

Of much interest to the current study is the proposition that TL is predicated by EI. Table 2.2 theorises links between the two constructs. The table is divided into EI-skills from the Mayer and Salovey (1997) model, which are positioned with associated EI behaviours from the Goleman (1995) model. The table proposes that, through emotional skills, leaders high in EI may be better able to communicate, influence, generate enthusiasm, perceive individual needs, develop high quality social relations, and instill in others an appreciation of the importance of creativity and work activities in line with a leader's vision. Some of these ideas are argued within Ashkansay and Tse's (2000) paper, which stated that high EI leaders are more likely to be transformational and have "higher levels of work effectiveness and productivity" (p. 234). However, Ashkansay and Tse's paper was theoretical; what is required is an overview of empirical research testing these ideas.

Table 2.2

Proposed Links between Leader EI Abilities/Behaviours and TL

Related EI Abilities/Behaviours	**Possible Relationship to TL Behaviours**
1. Perceiving Emotion (Mayer & Salovey, 1997b)	Being able to perceive and empathise (read non-verbal and emotional cues of others) aids the development of an appropriate vision, with the subsequent ability to understand and move mental models/frameworks (associated with TL-Idealised Influence and Inspirational Motivation) (Ashkanasy and Tse, 2000).
- Self-Awareness (Goleman, 1995)	Being able to accurately identify how individual employees feel fosters individual needs and personal development (related to TL-Individualised Consideration) (Ashkanasy and Tse, 2000).
- Empathy (Goleman, 1995)	These skills makes it easier to predict the link between employee's emotions and behaviours during times of change (linked to TL- Idealised influence and Inspirational Motivation).
2. Understanding Emotion (Mayer & Salovey,	If a person has a functional emotional vocabulary and understanding of emotion, it is more likely they will be able to use emotionally expressive language and non-verbal cues associated with transformational leaders. They

1997b)	are likely to be skilled communicators (associated with TL-Inspirational Motivation). This skill would also aid the task of encouraging old methods to be perceived in new ways. It would also help foster the need for creativity amongst staff (linked to TL-Intellectual Stimulation).
3. Utilisation of Emotion (Mayer and Salovey, 1997b)	Leaders with this skill can use emotions to remain motivated, or to propel themselves through a variety of challenging situations. Employees are more likely to admire, and be motivated by, a leader who displays persistence, enthusiasm, optimism and determination (Bass, 1985) (linked to TL-Idealised Influence and TL-Inspirational Motivation).
- Motivation (Goleman, 1995)	Leaders may utilise intense emotions as signals to direct their attention to issues in need of immediate attention (George, 2000), and can possibly use emotions to prioritise demands, re-frame problems and make better judgments and decisions (associated with TL-Intellectual Stimulation).

4. Managing Emotion (Mayer and Salovey, 1997b) - Self-Regulation Goleman (1995) - Social Skills (Goleman, 1995)	Self-management of emotions may breed more positive thinking, self-regulation, adaptability and less stress. Subsequent effects may include higher self-efficacy and achievement orientation, better impression management, a willingness to delay gratification, the ability to set more challenging goals/take calculated risks, being able to adapt to change, increased creativity, and the capacity to align oneself with the goals of the organisation ahead of self-serving ambitions (central to TL-Idealised Influence and TL-Inspirational Motivation). A person who is able to manage others' emotions is more likely to be persuasive and influential. They may also develop more positive social relationships and build political networks. Possible effects include the promotion of positive affect in employees, trust formation, the creation of commitment rather than compliance, the ability to engage employees in useful consultation and assisting employees to cope with change (related to TL-Idealised Influence, Inspirational Motivation, Intellectual Stimulation and Individualised Consideration).

Despite arguments concerning the utility of EI in TL, published research exploring the association is limited. Currently, there appears to be five journal articles that have shown that emotional abilities may underlie the ability of the leader to be transformational, to be inspirationally motivating and intellectually stimulating. In one study, Barling, Slater, and Kelloway (2000) asked 49 managers to rate their own EI (via the EQ-i, Bar-On, 1997), and 187 subordinates to rate their manager's TL. Results showed that self-rated EI was positively connected to three components of other-reported TL; idealised influence, inspirational motivation, and individualised consideration.

A second study by Sosik and Megerian (1999) demonstrated that the relationship between EI and TL may vary as a function of a leader's self-awareness. These researchers used multisource data from 63 managers who self-rated EI levels and TL. This information was teamed with performance ratings from 63 superiors. EI and TL were then rated by 192 subordinates. When leader self-ratings were consistent with subordinate opinions, there was a clear relationship between most of the nine EI dimensions and TL. However, the strength of this relationship fell dramatically when subordinates rated leadership orientation and leaders noted their own EI levels. This finding highlights

discrepancies in some leaders' self-perceptions compared to subordinate ratings. Within

the Sosik and Megerian (1999) study, only the subordinate ratings of leadership were

shown to correlate with leader performance (as rated by a superior). In light of evidence

that self-report measures are also limited by social-desirability and response-set biases

(Geher, Warner & Brown, 2001), self-report EI and leadership research should be

interpreted cautiously. Collectively, findings advocate the use of an "other-report"

methodology when surveying the impact of leader EI.

Three alternate studies support a pattern between EI and TL. Recently in a study

with 291 Indian army officers, Srivsastava and Bharamanaikar (2004) found that self-

reported leader EI (EQ-i, Bar-On, 1997) was a significant predictor of a leaders' TL, as

rated by subordinates. In an analysis of 110 Australian senior managers (Gardner &

Stough, 2002), participants who considered themselves as transformational leaders

reported higher EI, as measured by an early version of the SUEIT (Palmer et al., 2003c).

Although the researchers used self-report ratings, all aspects of EI correlated moderately

or highly with each TL dimension, with the ability to identify and calculate the emotions

of others being the best EI predictor of TL. Palmer et al. (2001) also provided

experimental evidence for the relationship between self-rated EI and TL. Major limitations

of this latter study included the small number of student participants ($N = 43$) and the use

of a modified version of the self-report Trait Meta Mood Scale (Salovey et al, 1995),

which is not regarded as being equivalent to current conceptions of EI (Ciarrochi et al.,

2001).

While these studies show emerging evidence of a link between a leader's

emotional capabilities and their TL orientation, empirical verification remains largely

untapped partly due to its domination by cross-sectional designs. Noting a vast absence in

the literature, Ashkanasy and Tse (2000) provided a conceptual framework for nearly fifty

untested propositions related to the link between emotional intelligence and TL. Included

in their framework was the proposition that, through EI, transformational leaders have the

ability to create high quality leader-member-exchanges through trust. The next part of this

review provides an overview of the effects of TL in the workplace.

Outcomes of TL

A number of studies have found that TL is positively associated with a variety of

performance-related outcomes. While this list is not exhaustive, outcomes have included

leadership effectiveness (Bass & Avolio, 1993), organisational performance (Elenkov,

2002), team effectiveness (Sivasubramaniam, Murray & Avolio, 2002) employee effort

(Yammarino & Bass, 1990), a positive culture and climate (Chen, 2004) and employee

performance (McColl-Kennedy, & Anderson, 2002). TL has also been linked to a variety

of efficacious attitudes, emotions and behaviours amongst subordinates. Findings

incorporate links to job satisfaction (Walumbwa, Wang, Lawler, & Shi, 2004),

commitment (Rai, & Sinha, 2000; Walumbwa, et al, 2004), reduced intention to leave

(Bycio, Hackett & Allen, 1995), psychological empowerment (Hepworth & Towler,

2004), lowered cynicism (Bommer, Rubin, & Baldwin, 2004), better learning goal

orientation (Sosik, Godshalk, & Yammarino, 2004), reduced workplace aggression

(Hepworth & Towler, 2004), group cohesiveness (Hoyt & Blascovich, 2003), perceptions

of job importance (Bono & Judge, 2003), enhanced follower development (Dvir, Eden,

Avolio, & Shamir, 2002) and organisational citizenship behaviour (MacKenzie,

Podsakoff, & Rich, 2001). Furthermore, there appears to be evidence available that

suggest that the individual subdimensions of the TL construct, such as inspirational

communication and intellectual stimulation, have unique relationships to certain outcomes,

such as interpersonal helping behaviour and affective commitment (Rafferty & Griffin, 2004). In sum, TL looks to have wide-reaching effects on many aspects of organisational life and employees' experiences of work.

Several aspects of the above-mentioned studies underline the possibility that genuine benefits may stem from a transformational approach. First, each used sample sizes large enough to conduct satisfactory analyses and to draw appropriate conclusions ($N = 144$ to $N = 17,000$). Second, a variety of research methodologies were employed. Most studies that have used the MLQ have implemented correlational designs (Bommer et al, 2004). However, these studies have been supplemented by randomised and longitudinal field experiments (Dvir et al., 2002), as well as laboratory simulations (Hoyt & Blascovich, 2003), and naturalistic research (Bono & Judge, 2003). Third, studies have originated from sources around the globe. Chen's (2004) research was conducted in Taiwan ($N = 749$ employees) and resulted in positive correlations between TL behaviors and organisational commitment, as well as culture, employee job satisfaction and performance. Dov and Gil (2004) used a sample of 2,024 Israeli soldiers and found evidence for an association between TL and: (a) a better climate and, (b) lower injury rates in infantry soldiers. Javidan and Carl (2004) ($N = 336$) also found evidence for the cross-cultural validity of the construct, while Den Hartog et al (1999, $N = 17,000$ middle managers) established that the transformational paradigm contributed to outstanding leadership across 62 countries. Diverse methodologies and confirmatory results from a wide array of cultures underscores the generalisability and cross-cultural validity of TL.

Although findings regarding the superiority of TL over transactional leadership represent the majority, it is important to note that the results are not unanimous. For

example, Kahai, Sosik and Avolio (2003) ($N = 154$) experimental laboratory study found that transactional leadership was associated with greater group efficacy, solution originality and task satisfaction than TL. Furthermore Bass, Avolio, Jung and Berson (2003) ($N = 1594$) found that in a simulated military context characterised by high stress and uncertainty, both contingent reward and TL of the platoon leader equally predicted performance. However, the authors noted that the unusual circumstances of the setting may have elevated the import of contingent reward in contributing to the clarification of tasks and expectations. In their review of the area, Vera and Crossan (2004) indeed highlighted the value of transactional leadership in certain contexts. However, despite some evidence indicating that transactional leadership may be more useful in some contexts, the vast majority of empirical results obtained in most generic contexts, such as banking and government employment, suggest that leadership styles augmented with transformational characteristics can contribute to increased efficiency in most organisations (Vera & Crossan, 2004). Consequently the present study places this construct under close scrutiny.

Having documented several effects of TL, the discussion now moves to another likely correlate. Specifically, the concept of trust is outlined before analysing its possible role as an outcome of TL.

Organisational Trust

Trust is commonly believed to be indispensable to good working relationships and effective organisational environments (Fairholm, 1993). Yet despite its importance and a recent resurgence in organisational trust research (Kramer, 1999), there is no ubiquitous definition of the construct, with Mistzal (1996) noting that, "confusion continues with an increased mixture of approaches and perspectives" (p. 13). Definitions offered by Albrecht

and Travaglione (2003) and Currall and Judge (1995) proposed that trust involves a willingness to act under conditions of uncertainty. Similarly, Mayer, et al (1995) defined trust as, "a willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that party" (p. 712), while Ferres (2002) defined organisational trust as an "individual's willingness to act on the basis of his/her perception of a trust referent (peer/manager/organisation) being supportive, caring, ethical, competent and cognisant of others' performance" (p. 34).

A review of the above definitions suggests a pattern of meaning. First, trust may involve confidence in the intentions and actions of an individual, group or institution, and the expectation of ethical treatment. It also signifies an exchange relationship where the trustor is willing to engage in trust behaviors and risk vulnerability to the likelihood that one will not be exploited. In other words, trust involves more than the formation of another's trustworthiness- there must also be a willingness to act based on those judgments.

Trust Perspectives

Researchers have assumed diverse but interrelated theoretical views when outlining trust processes in organisational contexts. Lewicki and Bunker (1996) suggested that there are three kinds of trust that have a direct bearing on the trust experience. They stated that cognitive processes involved in 'calculus-based' trust, 'knowledge-based' trust, and 'identification-based' trust openly impact on trust development. In calculus-based trust, decisions are principally based on rationally derived costs and benefits, while knowledge-based trust is grounded in the other's predictability or knowing the other sufficiently well so that the other's behavior can be anticipated. Finally, identification-

based trust denotes a significant degree of attachment towards another individual or his/her group representatives.

Each of these trust types does not necessarily have a purely cognitive basis, although it appears that trust is most often defined in terms of several interconnected cognitive orientations. Purely cognitive-based descriptions of trust seem to focus on expectations, weighing options and rational decision-making (Kramer, 1999). Yet there may be problems with these definitions. Kramer (1999) observed that there is substantial evidence to suggest many assumptions of rational choice models are empirically invalid. Specifically, one limitation is the extent to which decisions about trust are products of conscious summation and personal value systems is questionable (Kramer, 1999), with rational-choice models perhaps overstating decision-maker's cognitive capacities. Kramer (1999) also noted that rational calculation may not be as central to trust, that trust can be most salient in the nonappearance of rational thought. That is, rather than cognition dictating trust formation, trust may cloud a person's thinking about another person. Other researchers have argued that trust needs to be conceptualised as a state that includes affective and behavioural components, not just cognition (Cummings & Bromiley, 1996; McAllister, 1995). Cognitive models of trust may be useful, but they do not provide a satisfactory account of trust phenomena (Fine & Holyfield, 1996).

Several alternate perspectives complement the cognitive view. Fine and Holyfield (1996) suggested that, "one not only thinks trust, but feels trust" (p. 25). Some trust researchers have incorporated affective elements into their research (Clark & Payne, 1997; Mayer & Davis, 1999). Even Lewicki and Bunker's (1996) 'identification-based' trust has a crucial affective component as it involves the development of emotions as feelings of

personal attachment towards another increases. Behavioural intention consistently also appears in the literature as a central conceptualisation of trust (Cummings & Bromiley, 1996; Currall & Judge, 1995). Within the behaviourist view, cognitive and affective perspectives may help outline the construct of trustworthiness rather than trust itself: "It is the willingness to engage in trusting behaviour…which defines trust" (Albrecht & Sevastos, 2000, p. 36). A third group of influential definitions construe trust as a 'normative' expectancy about others, which is influenced by social systems in which people are embedded (Garfinkel, 1963; Luhmann 1988). This is related to rule-based trust (Kramer, 1999), which is predicated on shared understandings regarding rules of appropriate behaviour within an organisation. Finally, the dispositional approach is also salient. Dispositional trust is a personality trait related to a person's propensity towards trusting people generally (Gurtman 1992). Evidence exists to suggest that individuals vary greatly in their inclination to trust others (Gurtman 1992; Sorrentino, Holmes, Hanna, & Sharp, 1995). In the absence of any interactional history between individuals, dispositional trust will likely be more influential than situational factors (Creed & Miles, 1996). That is, the influence of dispositional trust on ratings of trustworthiness may not be as strong where employees are asked to judge an individual they know well. Interactional history may account for researchers experiencing mixed results when using dispositional trust to predict interpersonal trust (McKnight, Cummings & Chervany, 1998). This discussion has demonstrated that the type and number of dimensions used to frame trust fluctuates across scholars. This is pertinent to understanding the precursors and outcomes of organisational trust.

Determinants of Trust

While there has been little systematic study of the determinants of trust in organisations (Dirks & Ferrin, 2002) a body of literature suggests that trust is influenced by the perceived traits and abilities of the trust referent (Butler, 1991), characteristics of the trustor (Clark & Payne, 1997), the relational history between two parties (Kramer, 1999), and qualities in the organisational environment (Carnevale & Wechsler, 1992).

From an interpersonal trust perspective, researchers have identified various character and ability-based determinants of organisational trust. Embedded in these descriptions is a set of individual beliefs concerning the trustworthiness of another person. Over time, Mayer, Davis et al. (1995) reasoned that a trustor will be willing to be vulnerable to another person if this other person is perceived as possessing trustworthy traits such as ability, benevolence, and integrity. Clark and Payne (1997) reported six elements of trustworthiness. While they observed that the names and number of emergent trust factors differed across studies, they noted consistent themes such as integrity, competence, consistent behaviour, loyalty, openness and shown respect (Clark & Payne, 1997).

Potential trust antecedents may also be classified in terms of the psychological and demographic characteristics of the trustee (Dirks & Ferrin, 2002). In a recent meta-analytic review, a trusting disposition had a significant, albeit small, effect on trust scores (Dirks & Ferrin, 2002). Carnevale and Wechsler (1992) also found that gender and locus of control (LOC) contributed to levels of individual trust. The researchers quoted from both the literature and their results to say that women tend to be "less cynical" (p. 420) and place a greater emphasis on relationship needs at work, thereby experiencing trust more

than men. Employees with an internal LOC reported more trust as they may take greater

responsibility for their experiences at work, and also perceive their work climate as less

threatening compared to those with an external LOC. Subsequently, they too are said to

have a greater capacity for trust (Carnevale & Wechsler, 1992). However, Dirks and

Ferrin (2002) warned that such associations should be interpreted carefully. An

investigation of antecedents from over 100 studies in trust in leadership led them to

speculate that future research and practice would have greater success if it focused on the

characteristics of the trust referent and situational determinants rather than the individual

differences of the respondents (Dirks & Ferrin, 2002).

Trust is said to be dynamic and thereby influenced by the amount of interaction

between the trustor and the trust 'object' (McLain & Hackman, 1999). For example, the

level of trust between individuals, or an individual and an organisation, may be greater in a

relationship of long duration because of the assumed level of familiarity (Lewicki &

Bunker, 1996). However, McLain and Hackman (1999) also note the fragility of trust

relationships. Trust can be dissolved by a single destructive event, so that even trust built

over a long period of time can vanish when the event is attributed to the trust referent

(Slovic, 1993). Also, Kramer (1999) reports that a number of studies have demonstrated

that reciprocity of trust in exchange relations enhances trust, while the absence or lack of

trust reciprocation wears it down. Over time then, an individual may also realise that trust

in a person or organisation is not justified (Dirks & Ferrin, 2002). All told, it is perhaps

not surprising that empirical research has failed to establish the length of relationship as a

firm determinant of trust formation (Dirks & Ferrin, 2002).

Qualities in the organisational environment also have an impact on trust formation.

For example, recent research has indicated that functional, open communication facilitates

organisational trust (Mishra & Morrisey, 1990; Whitener et al., 1998). Perceived organisational support, which can be viewed as a measure of an organisation's concern for its employees (Shore & Wayne, 1993), has also been found to influence trust at an organisational level (Tan & Tan, 2000). Studies have shown that procedural justice in particular influences trust (Konovsky & Pugh, 1994). This is a component of perceived justice that describes the equity and fairness of procedures used to determine these outcomes, for example, performance appraisals (Folger & Konovsky, 1989). In addition, Carnevale and Wechsler (1992) found that greater trust resulted from employees who felt more secure in their jobs and protected to some degree from "arbitrary action from the organization." (p.490). These researchers state that secure employees are more likely to take risks and trust compared to those who feel their job is under threat.

Trust and Leadership

TL is increasingly being recognised as a principal determinant of trust (Gillespie & Mann, 2004). Kotter (1990) argued that employees must trust their transformational leader, in that the style of leadership almost invariably involves organisational change. In this sense, trust may enable leaders and employees to work together through considerable barriers, such as resistance to changing job roles or organisational downsizing (Jung & Avolio, 2000; Mayer, Davis, et al., 1995). The importance of trust in the leadership process was summarised by Kouzes and Posner (1995) as, "above all else, we must be able to believe in our leaders…that their word can be trusted" (p. 26).

Several theorists (Bryman, 1992; Fairholm, 1994; Sashkin, 1988) have suggested that transformational leaders stimulate trust. Bennis and Nanus (1985) noted that a transformational leader communicates a comprehensible, appealing and achievable vision, which can create a set of shared values and objectives. This in turn may engender trust

through a common organisational purpose (Lewicki & Bunker, 1996). In addition,

transformational leaders are held to build trust by conveying their willingness to

comprehend the individual needs and capabilities of followers, and to serve those needs

(Fairholm, 1994). Transformational leaders build better affective relationships, and trust is

more likely to be created when a social bond is formed between a leader and employee

(Tyler & Degoey, 1996). Transformational leaders can also increase trust by

demonstrating capability and persistence to achieve their vision, and arguably by way of

sacrificing individual needs for the good of the organisation (Jung & Avoilio, 2000). A

transformational leader's empowerment and support of employee decision making may

also increase trust, as might being a respected role model (Bass & Avolio, 1990). On this

last point, Jung and Avolio (2000) argued that employees often want to follow their

transformational leaders' values, behaviours and confidence. If this emulation process

results in success, followers might be expected to have higher levels of trust in their

leader. Gillespie and Mann (2004) surmised that, "whilst theories of TL differ in some of

the specific leadership behaviours they identify, all theories posit trust as a central feature

of the relationship such leaders have with their followers" (p. 590). In all, there is

theoretical support for a transformational style having a positive effect on trust

development amongst employees.

The centrality of TL in trust has been reflected in a recent growth of empirical

research connecting the two constructs. In their meta-analysis, Dirks and Ferrin (2002)

found that TL had the largest observed relationship with trust compared to other

hypothesised antecedents. Studies affirming the TL-trust connection include that by

Arnold, Barling and Kelloway (2001). Using data from 42 student teams in a simulated

laboratory setting, they found a correlation of $r = .72$ between total TL and trust in that

leader. In a similarly designed experiment using structural equations modelling ($N = 194$), Jung and Avolio (2000) found a highly significant path between the TL and trust. Connell, Ferres and Travaglione (2003, $N = 271$ employees) reported a similarly strong relationship in a cross-sectional survey study. Using 78 members of self-directed work teams, Butler, Cantrell and Flick (1999) reported that each TL practice had a significant impact on trust in a supervisor. Indeed, the largest correlation was $r = .85$ between trust in a supervisor and intellectual stimulation. Likewise, Ferres, Connell and Travaglione (2005) demonstrated a strong relationship between TL and trust within two groups of employees, those facing future redeployment ($N = 123$), and individuals that were to be unaffected by change ($N = 152$). In a two-sample study, Pillai, Schriesheim and Williams (1999) also uncovered a strong direct relationship between the two variables, as did Gillespie and Mann (2004, $N = 83$). It is evident that the majority of research supports the relationship between TL and trust. However, apart from Butler et al. (1999) and Gillespie and Mann (2004), these studies used a 'total' TL score. There appears to be inconsistencies across alternate studies that report on the subdimensions of TL.

Certain findings indicate that only some TL practices are consistently associated with trust. For example, in Podsakoff et al. (1996, $N = 1539$ employees), all six TL dimensions combined explained 28% of the variance in trust in leader levels. Yet when individual transformational behaviours were regressed on trust in leader, only three had a significant association with trust. These behaviours included the provision of an appropriate model, fostering the acceptance of group goals and individualised support. In direct conflict with findings from Butler et al. (1999), intellectual stimulation did not have a significant effect on trust scores, and neither did behaviours involving the articulation of vision or high performance standards (Podsakoff et al., 1996). An alternate study with 477

sales agents supported the hypothesis that intellectual stimulation would be negatively related to salespeople's trust in their sales manager (MacKenzie, Podsakoff & Rich, 2001). The authors argued that a leader who uses intellectual stimulation may persistently question "old and perhaps comfortable assumptions" (p. 223) leading to distress amongst employees and a lack of trust. In the same study, high performance expectations also had a negative impact on trust in manager (MacKenzie et al., 2001).

Varied results from studies using similar methodologies and frameworks (Butler et al., 1997; MacKenzie et al., 2001; Podsakoff et al., 1990, 1996) indicate that the relationship between transforming behaviours and trust is not entirely clear. Intellectual stimulation, in particular, seems to have an uncertain connection with trust, as do behaviours involved in the formulation of vision and the establishment of high performance goals. One explanation could be that the impact of leader behaviours on trust is specific to the organisation or sample (Gillespie & Mann, 2004). Findings generally suggest that most TL practices are positively associated with the perceived trustworthiness of the leader. However, future studies using multiple samples are arguably needed to further clarify discrepancies in current research. Such work may also help determine which transformational behaviours are relevant to trust in various settings (Gillespie & Mann, 2004).

Levels of Trust

Most available information on organisational trust is based at the individual level concerning the perceived trustworthiness of certain individuals (Fairholm, 1994). Yet the trust studies that concentrate on manager-subordinate relationships may be missing crucial contextual information. An interpersonal focus on trust in a manager is understandable considering its potential effect on performance-related factors (Kramer, 1996). According

to Tyler and Degoey (1996), individual managers play a crucial role in the development of trust since they control the flow of information by either sharing or not sharing key information with their direct subordinates. Nonetheless, rather than trust in one manager, the degree of trust within an organisation may also depend on the philosophies of the management as a group, organisational actions and processes, and employees' expectations of reciprocity. Reviews of the organisational trust literature from Hosmer (1995) and Mayer, Davis et al. (1995) suggest that people can have a different level of trust for different parties in a workplace. Factor analytic results from Ferres (2002) demonstrated that workplace trust could be measured at three levels within an organisation; trust in immediate manager, trust in organisation and trust in co-workers. Within this study, each level of trust was intercorrelated yet discriminant from the others, with the strongest relationship evidenced between trust at the immediate management and organisational levels. At a group level, Cook and Wall (1980) measured 'trust in management' and 'trust in peers' as clusters rather than focusing on the individual trustworthiness of a specific manager or peer, whereas Albrecht and Travaglione (1999) measured trust in a senior management group. Researchers seeking a broader overview of organisational trust may subsequently choose to include an examination of different trust levels and their differential effects. As well as examining trust between a person and an individual manager, the dynamics between a person, an organisation, or group of co-workers may also lead to interesting insights.

An important question in this regard is what levels (manager, co-workers, organisation) are most critical to creating a climate of trust within organisations? For example, if empirical or anecdotal evidence indicates that the organisational level is the most important, then it may become vital to implement a measure containing aggregate-focused items. This is, however, likely to be dependant on the organisation being studied,

and the intended focus of the research. The most critical level for companies would doubtless depend on their organisational structure. In self-directed team-based structures that operate without direct supervision, co-worker trust would presumably be most important. In more hierarchical structures, trust in one's immediate manager or the organisation may be of greater significance to organisational effectiveness (Ferres, 2002).

The current study proposes emotional intelligence as a precursor to TL, which, according to presented evidence, should influence an employee's trust in his/her manager. Due to an impressive ability to influence, leaders who are regarded as transformational might also act in ways to shape subordinates' trust in the organisation. In this regard, it is also plausible that trust in one's immediate manager impacts on trust that is felt at the organisational level. Subordinates may be more likely to feel optimistic about an organisation when manager trust is in place, whereas a low level of trust in a manager might impact negatively on organisational trust experiences. While specific research does not exist as a frame of reference for these latter propositions, these theories are explored in the present research, as are the effects of trust on selected outcomes.

Outcomes of Trust

Trust has been linked to a litany of outcomes that are valuable to managers and organisational practitioners. However, Dirks and Ferrin (2002) observed a variation in the opinion of researchers relating to its effects. In their meta-analysis, organisational trust (identified as trust in leadership) was most persuasively associated with work attitudes, followed by citizenship behaviours, and lastly job performance. These, and other, consequences of trust are momentarily reviewed.

Limited research has established a significant positive relationship between trust and organisational productivity. Two independent studies implementing large samples and monthly production records as a dependant variable (Dwivedi, 1980; 1983) found a fairly strong relationship between organisational trust and production ($r = .59$). While it is difficult to assess the construct validity of the trust measure used as Dwivedi (1980) does not provide any data on the specific items, the studies are important because of the rarity of research investigating the relationship between trust levels and specific performance measures. Unlike Dwivedi (1980), Masacco (2000) found a nonsignificant relationship between organisational trust measures and a performance measure. However, the sample size employed was small (N = 69) and, contrary to Dwivedi's aggregate evaluation of performance and trust, Masacco (2000) used an individual productivity measure. Future research may investigate whether the effects of organisational trust on productivity can be evidenced predominantly at an organisational level rather than individually.

Theorists have recognised that interpersonal trust between employees within levels might aid the development of social capital within organisations (Spagnolo, 1999). In this context, social capital refers to the inherent value in human relationships and connections within the workplace (Cohen & Prusak, 2000), and is understood to be aligned with sustained competitive advantage (Barney, 1991), reduced transaction costs (Barney & Hansen, 1994), organisational learning (Bouty, 2000), knowledge sharing (Cohen & Prusak, 2000), innovation (Cooke & Wills, 1999) and better financial performance (Waddock, & Graves, 1997). These outcomes may be evidenced because coordinated action is only possible when interdependent employees effectively work together through trust (McAllistar, 1995). Put simply, trust seems to facilitate efficacious relationships and attitudes that can impact on the bottom line. Peer-level or co-worker trust may have

particular relevance to assisting productivity by sustaining social capital within organisations (Cook & Wall, 1980; Ferres et al. 2004).

Affective commitment has also been allied with trust in a variety of empirical studies (Cook and Wall, 1980; Laschinger, Finegan, Shamian, & Casier, 2000; Tan & Tan, 2000;). Affective commitment has been referred to as "the employee's emotional attachment to, identification with, and involvement in the organization" (Meyer & Allen, 1991, p.67). This component of commitment represents the degree to which the individual wants to stay with the organisation (Meyer & Allen, 1991) and has been shown to positively influence a number of variables related to organisational well being, such as job satisfaction (Vandenberg & Lance, 1992) and perceived organisational support (Rhoades & Eisenberger, 2001). Its positive relationship with job involvement, job performance, and organizational citizenship behaviours (Allen & Meyer, 1996), may mean that employees with strong affective commitment contribute more to the accomplishment of organisational goals. Meyer and Allen (1991) also argued that affective commitment enters into a motivational and decision-making process that may reduce intentions to leave. Considering the potential benefits of commitment, a lack of trust may lead to indeterminable costs in untapped potential.

Other trust consequences have been reported in the literature. Firstly, trust is thought to operationalise citizenship behaviours (Robinson, & Morrison, 1995). Similar to OCB, trust may also result in "spontaneous sociablility" (Kramer, 1999, p. 583), which refers to different forms of cooperative, altruistic behaviours. Trust has also been linked to increased job satisfaction (Cunningham & MacGregor, 2000) and reduced non-need fulfilment (Cook & Wall, 1980). In early works, Gibb (1964) also suggested that a climate

of trust breeds feelings of personal adequacy, easier expression of feeling and conflict, constructive diversity/nonconformity and genuine behaviour. In sum, organisational trust may directly or indirectly influence organisational benefits that accrue from a variety of outcomes.

Change Cynicism

Organisational Cynicism and Change

As well as the above-named consequences, Andersson and Bateman (1997) and Rousseau and Tijoriwala (1999) have suggested that organisational cynicism is another likely outcome of trust. Organisational cynicism has been defined as a negative attitude toward one's employing organisation, composed of the belief that the organisation is untrustworthy and lacking in integrity (Abraham, 2000). The conceptualisation of cynicism as an attitude implies that it can be influenced by organisational events, environments and people. It is said to manifest in reproachful and critical behaviour toward the organisation (Dean, Brandes, & Dhwardkar, 1998), lowering job satisfaction, reducing commitment, increasing resistance to change (Meyer**,** Allen, & Topolnytsky, 1998) and deterring citizenship behaviours (Abraham, 2000).

The literature notes various theoretical perspectives and divergent views concerning the formation and nature of organisational cynicism. One conceptualisation relates specifically to organisational change (Abraham, 2000; Reichers et al., 1997; Wanous et al, 2000). Reicher's and colleagues (1997) outlined this 'change cynicism' as a loss of faith in the change leaders resulting from previous change attempts being unsuccessful. Further work from Wanous et al (2000) redefined the concept to maintain that change cynicism "has two elements: a pessimistic outlook for successful change and

blame placed on "those responsible" for lacking the motivation and/or the ability to effect successful change"(p.135).

Viewed within a psychological contract violation framework, Abraham (2000) contends that leaders are perceived as having violated their obligation to continually seek means to enhance organisational effectiveness. That is, when a succession of change efforts fail, employees feel initially disillusioned and deceived, and subsequently use cynicism as a perceptual defense in readiness for the next 'inevitable failure' (p. 129). With this occurrence, pessimism towards change may well reduce ambiguity where it is easier for employees to surmise "that the changes are a farce and that change agents are ignorant" (Abraham, 2000, p.129). It is also the assumption of Wanous et al (2000) that cynicism becomes self-fulfilling in that it inhibits employees from enthusiastically participating in future change efforts, thereby guaranteeing their failure. Some resistance to change can be useful as employees may operate as a 'check and balance' mechanism to ensure that management plans thoroughly to implement change (Ferres & Connell, 2004). However, from this brief overview, it is clear that change leaders should direct efforts towards reducing cynicism to functional levels.

Leaders cannot control all the determinants of cynicism about organisational change. First, leaders cannot plausibly influence a current employee's general personality or disposition towards cynicism. This is an innate, stable trait reflecting a generally negative perception of human behaviour (Abraham, 2000). Second, leaders cannot alter the performance profile of previous change efforts. However, Wanous et al. (2000) presented evidence to suggest management can have an effect on organisational factors that result in reduced change cynicism amongst employees. Specifically, the more

employees perceive they have participated in decision-making, and the more effective they deem their leaders, the less cynical they are about future organisational change.

Trust and Change Cynicism

Intuitively it would appear that organisational cynicism in general is related to trust. Both constructs appear theoretically similar, with Andersson (1996) suggesting that any type of cynicism incorporates an element of distrust. However, Dean et al (1998) noted that trust can be developed due to a lack of knowledge of a trust referent, while organisational cynicism is unequivocally based on experience. Also, unlike cynicism, trust involves elements of cooperation and a willingness to be vulnerable. This may account for some research citing relatively moderate relationships between trust and cynicism (Mayer, Davis et al, 1995). Kanter and Mirvis (1989) are among those who maintain that trust is predictive of cynicism in organisations, although there is little research evidence to support this contention. Organisational cynicism is generally believed not to be the pole opposite of organisational trust, and is likely to bear different antecedents and outcomes (Kramer, 1999).

In the context of change, some studies have indicated that trust can impact employee attitudes, although the area remains under-researched. Using a sample of 501 nurses, Rousseau and Tijoriwala (1999) found that nurses who had higher trust in management were less likely to perceive changes as being self-serving or unethical, and more likely to believe there were legitimate motives for change ($\beta = .22$ to .35). In a study with public sector employees from two organisations ($N = 349$ and $N = 425$), Albrecht and Travaglione (1999) found that trust in senior management had a strong, direct effect on change cynicism for both samples ($\beta = -.50$). A third study from Thompson, Joseph, Bailey, Worley and Williams (2000) used a smaller sample of 70 public employees. They

found significant relationships between trust in division-manager and trust in work area manager and change cynicism, with correlations of -.72 and -.58. This study does raise the possibility that "employees make distinctions among organizational groups that they trust and toward whom they direct their cynicism" (Thompson et al. 2000, p. 7). For example, if it is upper management making decisions about change, then the relationship between trust and change cynicism may be stronger when trust is measured from an organisational level compared to when trust in an immediate manager is investigated. Due to the small amount of research in the area, change cynicism studies are debatably in an exploratory stage. However, there is some theoretical and empirical basis for positioning trust as a central factor in explaining employees' cynicism in the context of change.

Intention to Leave

Other studies have investigated a relationship between organisational trust and intention to leave (Cunningham, & MacGregor, 2000; Mishra, & Morrisey, 1990). For instance, Ferres, Connell and Travaglione (2004) ($N = 275$) found that trust in management as a group was negatively correlated with intention to leave, although TL was shown to moderate this effect. Tan and Tan (2000) reported a strong negative relationship between organisational trust and intention to leave. Costigan, Ilter and Berman's (1998) research reported a similar pattern with trust in high-ranking managers. A wide spectrum of results has been uniform in adducing the benefits of trust to employees' intentions to stay or go (Tan & Tan, 2000). Tan and Tan (2000) argued that when trust exists within the organisation, motivational and decision-making processes results in felt support, attachment and a willingness to stay. Likewise, while not studied before, it is tenable that intentions to leave may be exacerbated by distrustful attitudes such as change cynicism.

It should be noted that intention to leave is probably the most important predictor of actual turnover. It is often defined as the strength of an individual's conviction that he or she will stay with or leave the organisation in which they are currently employed (Elangovan, 2001). Although some forms of turnover are desirable (e.g., losing poorly performing employees), most practitioners and researchers use the term as the loss of valued employees, and thus, as a negative index of organisational effectiveness (Staw, 1980). Muchinsky (1997) observed that intention to leave is regularly used as an outcome variable in organisational studies. Identifying trust, and exploring change cynicism, as antecedent conditions to intention to leave is important for understanding, and thus, controlling turnover behaviour (Vandenberg & Nelson, 1999).

Summary

In summing up this review, both the EI ability model (Mayer & Salovey, 1997) and mixed conceptualisations of EI seem to provide constructive frameworks for encapsulating capabilities and/or behaviours intrinsic to an emotionally intelligent leader. While both types of models have their strengths and weaknesses, associated measures may be usefully employed to capture complementary dimensions of the EI construct. The measurement of EI is arguably still in its formative stage, and it is likely that controversies surrounding its assessment will continue. This is partly due to the likelihood of divergent results occurring from the implementation of EI surveys compared to performance-based EI ability tests. That is, the relationship between EI survey instruments and ability-based tests seems weak, and EI may be predictive of a certain variable with one method but not another. There appears to be an abundant need for rigorous research into the measurement of EI and its outcomes in the workplace.

Measurement issues aside, the literature suggests that emotionally intelligent leadership may be credited with several direct or indirect benefits to organisations. Figure 2.1 provides a summary model of potential relationships depicted throughout this review. It is probable that leader emotional intelligence is positively associated with TL and that TL impacts on employee trust at the immediate manager and organisational levels. Trust appears to moderate subordinates' cynical attitudes towards change and discourage intentions to leave an orgnanisation. It is also likely that cynical change attitudes impact negatively on an employee's willingness to stay. The significant influence of TL, trust, cynicism towards change and turnover intention on aspects of organisational performance and longevity was highlighted throughout the review and makes each construct worthy of further investigation.

Leader - ▶ *Employee*
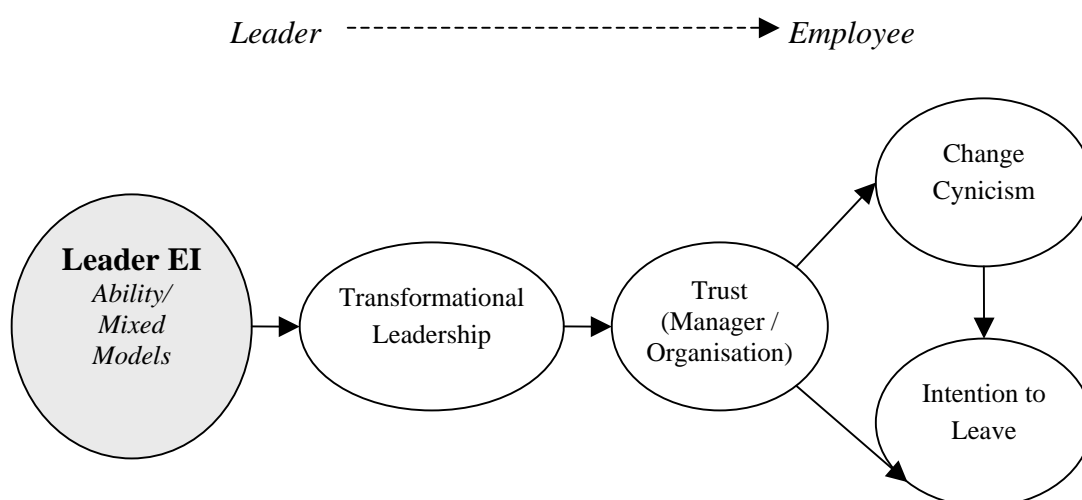
Figure 2.1. A summary model of theoretical relationships

Aims and Hypotheses

The present research is made up of two studies that centre on the role and effects of EI in leadership. Study 1 is the main focus of this thesis, and is complemented by Study 2.

Study 1: Employee Survey with Mixed-Model EI

Study 1 aims to construct reliable and valid scales derived from an employee survey where subordinates report on leader EI from a mixed-model perspective. A further aim is to longitudinally examine a structural model of proposed relationships between the emergent survey constructs in one organisation, and then examine the generalisability of the model to an alternate organisation. Three hypotheses are generated at this stage:

H1:   Using exploratory and confirmatory factor analytic methods, the emergent employee survey variables will be valid, discriminate, reliable and invariant across different samples.

H2:   Leader emotional intelligence will be associated with reduced employee change cynicism and intentions to leave via greater TL and trust.

H3:   Using longitudinal modelling, Each Time 1 construct will influence its equivalent Time 2 construct, and the structural relationships between the study variables found at Time 1 will generalise to Time 2.

Study 2: Performance-Based Ability EI

Study 2 aims to explore the effects of leader EI from an ability perspective using a performance-based test matched with employee survey responses. Two hypotheses are forwarded:

H4:   Ability-based leader EI will have a positive association with surveyed-leader EI.

H5.   Ability-based leader EI will be associated with reduced employee change cynicism and intentions to leave via greater TL and trust.

This review chapter has forwarded general research hypotheses. It should be noted that these propositions may change according to accumulative results at each stage of analysis. For example, explicit hypotheses concerning dimensions of the structural model will be dependant on findings pertaining to the measurement model. As such, the results chapters will introduce more specific propositions within the framework of those just presented.

The research in the remainder of this dissertation explores a number of questions that emanate from this review of the literature. Chapter IV addresses the development and examination of a measurement model. It aspires to depict valid dimensions of each employee survey construct under investigation. In Chapter V, a structural model of these dimensions are tested and assessed on an independent sample. Chapter VI describes the longitudinal analysis of the employee survey measures and inherent structural relationships. In Chapter VII, analyses of a performance-based ability EI instrument are described and compared to an 'other-report' EI measure. In Chapter III, the methodological issues that steer these analyses are explained.

CHAPTER III

METHODOLOGY

In the preceding chapter, a review of the emotional intelligence (EI) literature was presented. Existing frameworks, controversies and developments were discussed before an overview of current research into the role of EI in the workplace was surmised. Interrelationships between EI, transformational leadership, organisational trust, change cynicism and intention to leave were then described. In this chapter, the samples, procedures, instruments, analyses and statistical applications used to investigate the role of EI in selected workplace consequences are illustrated. Key features of the research methodology for Study 1 (Chapters IV, V and VI) include the use of survey data, exploratory factor analysis (EFA), confirmatory factor analysis (CFA), mutli-group structural equations modelling (SEM), and longitudinal SEM. The use of EI ability-test data, correlations, and regression analyses are important elements of the research methodology for Study 2 (Chapter VII).

Samples

During 2002, the researcher approached a public sector organisation (Organisation A) that was interested in conducting an organisation-wide EI/leadership survey. During a meeting with senior management and the supervisory team, the researcher offered to design and administer a survey, deliver reports of results with recommendations, present results via teleconferences, and conduct a face-to-face workshop after each wave of data analysis. The senior managers were informed of the researcher's desire for a longitudinal design that canvassed managers' EI levels and employees' perceptions around leadership, trust, change and intention to leave.

The researcher approached a private sector organisation (Organisation B) via their Head of Human Resources to propose administering a survey that focused on staff perceptions and attitudes around the same constructs of EI, leadership and so forth. In return for participating in the study, the researcher offered to devise the research paradigm, formulate an on-line survey, write an organisational report of results and recommendations, and feedback results via an information session.

An ideal study sample would have targeted a random population of public and private sector employees (Trochim, 2000). However, organisational, temporal and financial resources did not permit this avenue of research. Two organisations were selected to participate because replication studies with independent samples are needed to establish the generalisability of structural models (Cudeck & Browne, 1983). Bollen (1989) suggested that satisfactory data drawn from two separate sources is sufficient to support the external validity of research findings. The first organisation for the current research was chosen primarily on the basis of convenience and because of the large number of employees. The degree of support for the research, expressed by senior management, was also taken into account. The second organisation was selected on the basis of its diversity from the first organisation.

Sample Characteristics

As noted previously, the two participating organisations operated in dissimilar sectors. Organisation A (N= 1000 approximately) was a public sector entity, while Organisation B (N= 700 approximately) was a private sector entity. Cook (1990) noted significant differences between the operation of public and private sectors in regards to management methodologies, structures and strategy. These differences may manifest

themselves in dissimilar ways with various individuals and workplaces. Private sector

managers are generally more concerned with operational commitments and profit so that

outcomes are produced for known external stakeholders (Cook, 1990). Public sector

organisations historically lean towards being comparatively stable, mechanistic and

predicable, with a focus on providing services within a fixed revenue stream (Cook, 1990).

Foxall and Payne (1989) also presented evidence that managers within public service

organisations are more likely to be bound by existing practices and systems when making

decisions when compared to their privately-based counterparts. While these identified

differences are not meant to imply these variations are equally applicable to every public

and private sector unit, the issue is that this differentiation may be important when

considering the effects of leader EI in the two organisations under investigation.

The two participating organisations also performed disparate business functions

and operated within different locations. Organisation A was concerned with welfare

compensation and job search activities. The sample frame included all junior-level

employees to those at senior-level management levels. Since non-core activities such as

cleaning, maintenance and security services were contracted out, these employees were

not included in the study. Each of the targeted participants worked in an office

environment performing various jobs such as administration, counselling, client service,

support services and management activities. Over half of these employees (60%

approximately) worked in a customer support centre in a service-based role. Employees

were located in the one Australian state across twenty-four sites or offices.

In contrast, Organisation B was involved in the design and usability of business

technology aimed at creating high-performance user interfaces. Employees included a

variety of information technology specialists, human-factors psychologists, designers, engineers, administration staff, marketers and salespeople, customer relationship personnel, and management. The sample frame included all employees regardless of management level or location. Nearly half of the employees were defined as information technology specialists (45% approximately). The company had a semi network-based structure by outsourcing production and non-core services such as cleaning. Consistent with Organisation A, outsourced staff were not surveyed. All non-contract staff had access to a personal computer terminal and were located at six sites across three Australian states/cities and three North American states/cities. There was, therefore, significant heterogeneity between Organisation A and B in regards to a number of comparison points. There were also within-group differences, particularly in regards to nationality for Sample 2, which was accounted for in the analysis of results.

Due to its larger size, Organisation A was designated as the principal validation sample which would be used to build and purify the measurement model (Sample 1). It was also selected as the sample that would undergo longitudinal analysis. In addition to an employee survey, Organisation A was interested in testing leader emotional intelligence using a performance-based instrument. As such, Organisation A was surveyed at two different points of time, each with two different measures, once in June 2003, and once in May 2004.

Sample 1 (Organisation A) was used for both Study 1 and Study 2. Study 1 was based on responses from the 'employee survey' measure, while Study 2 was based on responses from a leader EI-ability test and matched employee responses. That is, for each wave at Organisation A, an emotional intelligence measure was used to assess each person

in a leadership position, while an employee survey was used to test subordinate

perceptions. Details on the procedures involved with the survey distributions are to be

described shortly. The response rate for Study 1 (employee responses only) was 47% (n=

467) for Wave 1 and 40% (n= 398) for Wave 2. For Study 2 using the leader emotional

intelligence test, the response rate was 78% (n= 107, valid n= 102) for Wave 1 and 76%

(n= 104, valid n=102) for Wave 2. Differences between responders and non-responders

are discussed with Chapter VI (Longitudinal Analysis). Figure 3.1 and Figure 3.2. show

the samples used for the research, and how they were implemented in the analysis process.
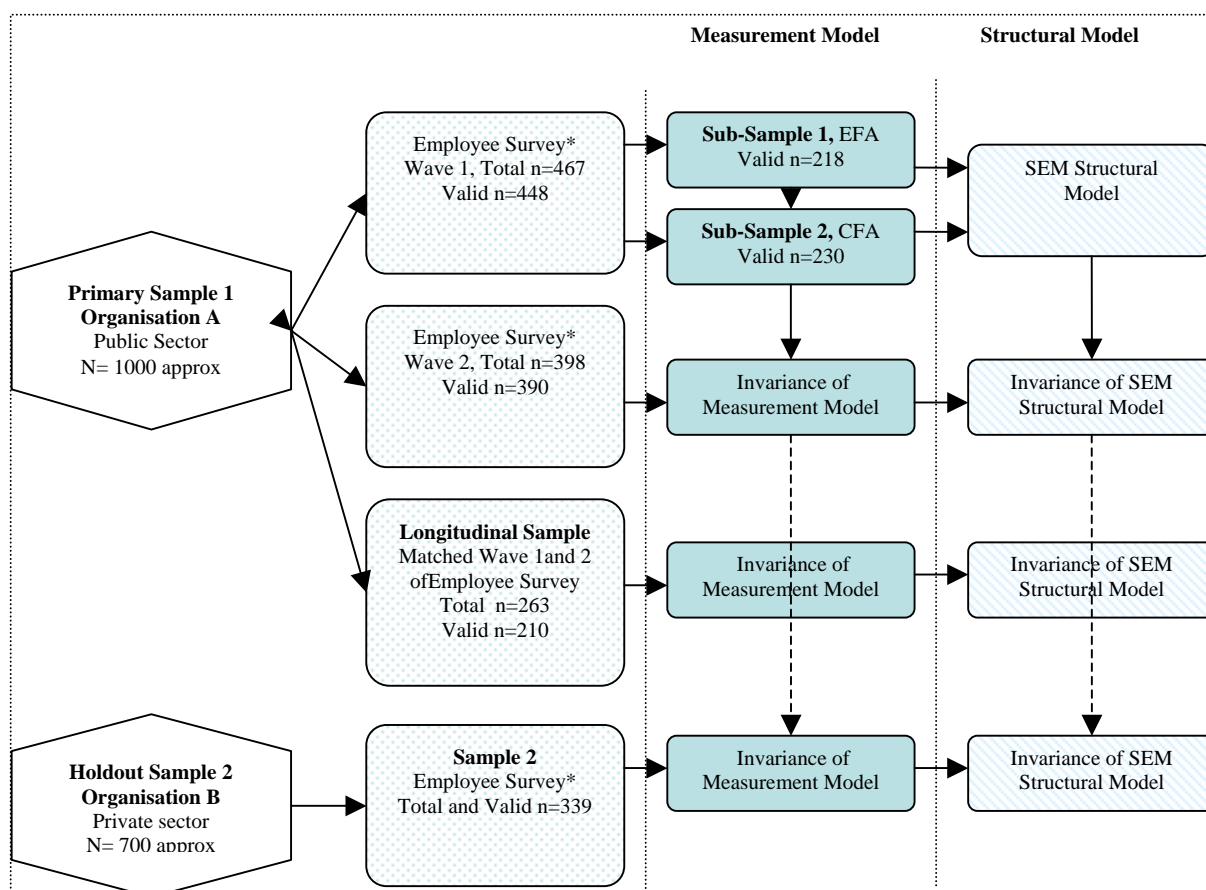
Figure 3.1. Samples used for Study 1

From Figure 3.1 it can be seen that Organisation B (Sample 2) was elected as the holdout or cross-validation sample for Study 1. It was surveyed once in June/July 2004 using just the employee questionnaire, with a response rate of 49% (n= 340). The practice of cross-validation in structural modeling examines the generalisability of measures and models from one sample to another (Byrne, 2001). In this case, the measures and models which were developed using Sample 1 were cross-referenced with Sample 2 to test if a range of equivalence conditions were satisfied (Bollen, 1989). Chin (1998) and Cudek and Browne (1983) noted that a limitation of most published SEM research is a lack of appropriate cross validation with new data. Cross-validation procedures are discussed in more depth later in this chapter. Figure 3.2 details the 'leader' survey samples drawn from Organisation A.
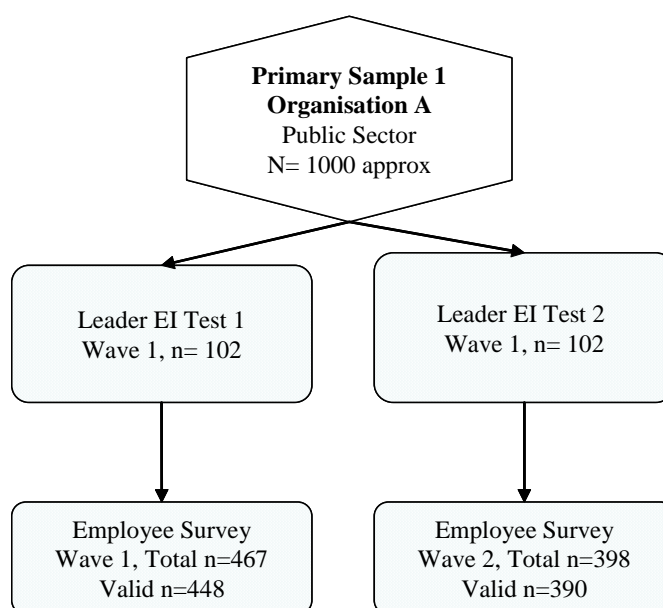
Figure 3.2. Samples used for Study 2. Employee survey responses were 'matched' to their Leader's EI Ability Test Results

Table 3.1. shows that Sample 1 and Sample 2 for the employee survey (Study 1) were distinct in several ways. First, compared to the bi-national and majority-male Sample 2, Sample 1 was Australian and female-dominated. When weighed against Sample 1,

Table 3.1

Sample Characteristics

	Study 1 Employee Survey				Study 2 Leader-Only EI PerformanceTest	
	Sample 1 Wave 1	Sample 1 Wave 2	Sample 1 Longitud.	Sample 2	Sample 1 Test 1	Sample 1 Test 2
No. Survey Responses	467	398	263	339	107	104
Response Rate %	47	40		49	78	76
No. Valid Responses	448	390	210	339	102	102
Australian %	100	100	100	42	100	100
North American %				58		
Male %	29.2	33.1	32.3	70.3	34.3	43.1
Female %	68.8	66.7	67.3	29.7	65.7	55.9
Not recorded %	2	.3	.4	0	0	1.0
Age %						
15-24 years	3.6	2.6	2.9	8.5	0	2.0
25-35 years	23.7	25.4	28.8	68.8	10.8	9.8
35-44 years	32.8	31.0	28.0	12.4	41.2	39.2
45-54 years	33	34.9	34.2	8.3	42.2	41.2
55 years and above	5.4	5.6	5.8	2.1	5.9	6.9
Not recorded	1.6	.5	.4	0	0	1.0
Education %						
Secondary	3.1	4.4	3.3	0	2.9	5.9
Year 10 or Equivalent	8.0	7.9	6.6	2.4	10.8	9.8
Post-School Cert/Dip	14.1	20.0	21.4	10.6	7.8	12.7
Year 12 or Equivalent	43.8	40.3	40.7	15.4	49.0	41.2
Bachelor's Degree	20.8	19.5	19.8	46.3	16.7	17.6
Honours Degree	5.8	4.9	4.5	12.8	5.9	5.9
Masters Degree	2.2	2.8	3.3	12.7	6.9	5.9
Doctoral Degree	0	0	0	2.1	0	0
Not recorded	2.2	.3	.4	0	0	1.0
Position %					Manager 39%	Manager 37%
Sample 1* *Sample 2**					Team Ldr 61%	Team Ldr 63%
Band 4 Senior Mngmt	7.6	4.6	2.5	2.1		
Band 3 Mid. Mngmt	28.1	33.1	32.1	13.7		
Band 2 Non Mngmt	56.3	58.2	56.4	57.4		
Band 1 Professional	2.0	1.1	1.3	25.9		
Other	4.9	5.1	5.6	2.1		
Not recorded	1.1	2.3	2.2	0		
Tenure						
Years	11.6	11.8	10.7	3.9	15.3	16.8
Standard Deviation	7.96	7.65	7.5	2.52	8.3	8.6

* Position levels do not correspond between Sample 1 and Sample 2. E.g. Band 2 of Sample 1 does not indicate they are equivalent to being non-management in Sample 2.

Sample 2 participants were also younger, had further tertiary education, and had shorter tenure. The demographics for age, gender, tenure and education within Sample 1 (Wave 1, Wave 2, and Longitudinal) for the employee survey were quite similar. In essence, there were unambiguous differences between the two different organisational samples. Persuasive arguments supporting the measurement model and structural relations could be forwarded if the models were to conform across these diverse groups.

The leader-only samples for Study 2 (Test 1 and Test 2) were made up of team leaders and managers from Sample 1, and had different demographics. Most markedly, the average tenure of participants was 15.3 and 16.8 years for Test 1 and Test 2 participants, which was 4 to 5 years longer than the employee samples. Similar to the employee Sample 1, there were a greater percentage of females compared to males, but this difference was most perceptible for Test 1 subjects. Approximately 30% of both leader samples had at least a bachelors degree, while over 50% had the equivalent to a Year 12 or post-school qualification. Study 2 was designed as an add-on to Study 1, with the latter being the focus of the present thesis. Financial and time restraints restricted the replication of Study 2 to Organisation B.

Information obtained from both organisations supported that the samples were representative of their organisations. Similar statistics were attained for gender, age, tenure and position compared to previous internal staff surveys. Past information for education was not available for comparison. Overall though, support could be found for the similarity between the sample characteristics and those of the organisational populations.

Sample Size Issues

Along with representativeness, adequate sample size was an important

consideration in the research. Miller (1994) acknowledged that a well-conducted survey

generally yields a response rate of 45 percent to 55 percent and above. The projected

sample sizes for the current research were thought to be adequate according to these

frequencies; it was expected that at least 450 subjects from Organisation 1 (Wave 1) and

315 subjects from Organisation 2 would return surveys. Indeed, Figure 3.1. shows

obtained samples for Study 1 had at least 300 cases.

As SEM is a large sample-size technique, some authors have offered guiding

principles on the definition of what constitutes a 'large' sample (Kelloway, 1998). Boomsa

(1983) recommended samples of at least 200 for reasonably complex models, suggesting

that any less than 100 would result in the collapse of a model (in Kelloway, 1998).

Gerbing and Anderson (1992) were less stringent and estimated that fairly robust estimates

could be achieved with fewer than Boomsa's (1983) recommended sample size of 200.

They noted that 'medium' samples between 150 and 200 subjects would ensure the power

of statistical tests in SEM, depending on the model. Rather than quoting total sample size,

Bentler and Chou (1987) recommended that a ratio of subjects to parameters be between

5:1 and 10:1. Thus, while there seems to be some dissension in the literature, the

likelihood of encountering a problem in SEM is heightened when the sample size is small

and models are more intricate (Kline, 2005).

The expected sample for Wave 2 of Study 1 (Sample 1) was expected to be smaller

due to attrition rates associated with much of longitudinal research (Lyons, Carter, Carter,

Rush, Stewart & Archbold, 2004). Attrition in organisational research may be a problem

when subjects do not wish to participate after the first wave of research, leave the organisation, move locations, change positions or managers, or do not give appropriate identifiers that can be matched at various times. As such, the rate of attrition generally increases as time passes (Pedhazur & Pedhazur-Schmelkin, 1991). While longitudinal attrition rates seem to differ according to the field of study and the research design, Pedhazur and Pedhazur-Schmelkin (1991) reported dropout rates as high as 50% in certain studies. Lyons et al (2004) presented several strategies for countering this, such as building relationships, appropriate follow-up, and professional communication of objectives and results. Given the expected sample size for Wave 1, it was anticipated that the longitudinal employee sample would be large enough (approximately 200) to perform appropriate SEM analyses for the current study. Further information on the implemented analyses is presented shortly.

The researcher recognised that Study 2 (Sample 1) *leader* survey responses would not result in appropriate numbers for SEM. A small number of subjects (<100) was anticipated given that less than 14% of the 1000-strong population were in leadership positions. While the response rates were excellent, the obtained samples of approximately 100 each were inadequate for quite a complex a priori SEM model with many parameters to be estimated. However, multiple regression analysis may generally be performed at a ratio of 10 subjects to each variable (Kline, 2005), although Francis (1999) posited that, ideally, the ratio should be closer to 20 subjects for each predictor. The required sample size for regression also depends on a number of issues, including the desired power, method of analysis, alpha level, skewness, number of predictors, and expected effect size (Green, 1991). While the leader survey sample sizes were expected to be small, the researcher progressed with this aspect of the study given the appreciable addition that

matching leader EI test scores to employee responses could make to the EI literature. Where applicable, effect size, and the power of each obtained effect size, were considered within each analysis.

Measures

Study 1: Employee Survey

All employees completed a survey made up items contained within Appendix A. The items were selected to explore the research aims of purifying a measurement model and testing structural associations between EI and a number of constructs. In all, 96 items were used within a survey of a variety of constructs. Questions were either drawn from the literature, or developed and implemented by the researcher in previously published and unpublished preliminary studies (Connell, Ferres, & Travaglione, 2003; Ferres, 2002; Ferres, Connell, & Travaglione, 2004; Ferres & Travaglione, 2004; Ferres & Crombie, 2003). Within each scale, all items were coded consistently, in that all were either positively worded or negatively worded. Using a mixture of positive and negatively worded items within scales has been found to be detrimental to reliability, factor validity, and the creation of method factors from careless responding (Rodebaugh, Woods, Thissen, & Rapee, 2004). Some experts advocate that 'reverse-worded' items be discarded through item analysis (Rigdon, 2005; Marsh, 1986).

Of primary concern for the employee survey was the measurement of leader EI. A critical review of available surveys is provided, before an outline of the chosen EI instrument is given. The measures implemented for both transformational leadership and trust are then outlined. Following this is a brief discussion of the items used to measure change cynicism and turnover intention.

Leader Emotional Intelligence

    Background. As briefly mentioned in Chapter II, surveys are often used to measure EI in organisational settings. When constructing their own self-report EI tool Schutte et al. (1998) proposed that the "development of tools to assess emotional intelligence has not kept pace with interest in the construct" (p. 167). Since that time however, the available literature reveals a litany of available survey tools, mostly based on mixed-model conceptions and a smaller number derived from the ability-model. Table 3.2 displays a critical summary of some of the chief EI survey instruments in use today.

    While a critical overview of every existing measure in the EI domain is beyond the scope of the current discussion, some other scales that are absent from Table 3.2. at least bear mention. For instance, the Trait Meta-Mood Scale (TMMS, Salovey et al., 1995) is another self-report scale which assesses attention to emotion, emotional clarity and emotional repair. Another commonly used scale is the Toronto Alexithymia Scale (TAS-20), though it was not originally designed to measure EI. In some ways, the TAS-20 investigates the antithesis of EI; a person's inability to identify feelings, describe feelings or conduct externally oriented thinking (Bagby et al., 1994). Third, Bernet's (1996, cited in Schutte et al., 1998) Style in the Perception of Affect Scale (93 items) has also been used in EI investigations. Further measures include the Emotional Control Questionnaire (Roger & Najarian, 1989), Weinberger et al.'s (1979) Repression Sensitization Scale and the Response Styles Questionnaire (Nolen-Hoeksema & Morrow, 1991). Of these tools, it is important to note that many measure one or more dimensions of 'emotionality' normally associated with EI, not EI itself. In this respect, Ciarrochi et al. (2001) recommend caution when exercising some of the latter-discussed self-report measures; many were constructed "before the concept of EI came into vogue" and thus "are likely to

serve as instruments by which new tests of EI are validated rather than serving to define this concept in all its complexity" (p. 41). In any event, there is an array of self-report tools accessible to EI researchers and organisational practitioners, although the preceding discussion illustrates that their operationalisation has been mired by several difficulties.

Table 3.2.

A Summary of Some Existing EI Survey Measures

Researchers (Year) and Instrument	Instrument Orientation and Focus	Comments and/or Limitations
Boyatzis and Goleman (HayGroup, 2002), Emotional Competence Inventory (ECI 2.0)	Based on the competencies identified by Goleman's (1995; 1998) mixed-model and Boyatzis's competency assessment framework (SAQ; Self Assessment Questionnaire, 1982; 1994). The latest version looks at 20 work-related competencies or traits (such as 'optimism' and 'initiative') clustered within the factors of self-awareness, self-management, social awareness and relationship management.	A 360 degree work-related instrument; 63 items (previously 110 items) where 'other ratings' are more reliable; Stated to be predictive of performance in some contexts (Hay Group, 2002); Items are based on day-to-day work behaviours which do not seem face valid in terms of the underlying EI model on which it is based; Intercorrelations too high; Unstable reliability for some competencies (α = .53 - .94); High correlations with personality scales (low discriminant validity, Ciarrochi, Deane and Anderson, 2002); No factorial validity (Hay Group, 2002); Development based on speculation (Fisher & Ashkanasay, 2000).
Bar-On (1997) Emotional Quotient Inventory (EQ-i)	A mixed-model perspective, the EQ-i attempts to measure personality and intellectual dimensions as well as emotional dimensions; Describes a single EI factor, five second-order factors and 15 dimensions; The broader conceptual components include: intrapersonal abilities, general mood, interpersonal abilities, adaptability and stress management.	The EQ-i is a long and comprehensive EI measure (133 items), which can also be a disadvantage; Available as a 360 degree assessment; Scales have internal consistency alphas ranging from .69 to .89 with a full-scale alpha of .76 (Bar-On, 1997); Criticised for its inclusiveness (Mayer et al. 2000; Roberts et al. 2001) as the scale correlates highly with measures of personality; Bar-On (1997) claims the EQ-i has predicted occupational performance, yet Mayer et al. (2000) argue this is inaccurate, with the EQ-I sharing a moderate correlation with a "sense of competence" (p. 410); Factor structure unclear (Palmer et al., 2003). May be measuring 'well-being' (Jordan et al., 2002).

Researchers (Year) and Instrument	Instrument Orientation and Focus	Comments and/or Limitations
Schutte, Malouf, Hall, Haggerty, Cooper, Golden, & Dornheim (1998) Self Report Inventory (SRI)	Drew its content from Salovey & Mayer's (1990) three-part ability-model: appraisal and expression, regulation and utilisation. Mayer et al (2000) state it is a mixed measure as Schutte et al. decisively interpreted their original model to include diverse attributes (such as social functioning) reflected in the popular EI literature (e.g. Goleman, 1995); One factor retained in its development, thus claims to measure a general EI factor.	Succinct 33-item measure; Appeared to show some discriminant and criterion validity and good reliability ($\alpha = .91$) (Schutte et al., 1998). Seems to be face-valid. Lack of factorial validity; Does not load onto Salovey and Mayer's (1990) model; Cannot measure a general factor by virtue of its construction technique; Homogenised item-keying; Confirmatory analyses revealed scale is not unifactorial (Petrides & Furnham, 2000).
Cooper and Sawaf (1997) EQ Map; (Orioli, Trocki, & Jones, 2000)	A mixed-model perspective with 20 scales within five sections (Current Environment, Emotional Literacy, EQ Competencies, EQ Values and Beliefs, EQ Outcomes). Some overlap with Goleman (1995) yet wider-reaching in scope. Unlike other EI models, aims to capture information on environmental contingencies, making it more congruent with emotions systems theory models (Robins & Novaco, 1999).	Highly inclusive and comprehensive (250 items); Measures more than emotional intelligence and emotional dimensions; Used and developed for consulting rather than academia where it has received negligible attention; Poor to very good estimates of internal homogeneity range from .53 to .91 for the 20 subscales (Orioli et al, 2000); Some sections likely to overlap considerably with personality; No outcome studies evident in the scientific literature; Likely to be useful for developmental purposes but not prediction.
Palmer, Gardner and Stough (2003a) Swinburne University Emotional Intelligence Test (SUEIT) or the Genos (commercial version) (Genos 2003)	Items based on a factor analysis of 6 existing EI scales covering a variety of ability models and mixed models. Designed to assess: (1) Emotional Recognition and Expression (in oneself), (2) Understanding Emotions External, (3) Emotions Direct Cognition, (4) Emotional Management and (5) Emotional Control.	64-item survey normed on Australian data ($N = 3012$ general population, $N = 1059$ Senior Executives); Available in self and 360 degree versions; Lower than desired level for one factor ($\alpha = .63 – 83$, total scale $\alpha = .88$) but good test-retest reliability. Low to moderate correlations with personality factors (Genos, 2003); Hard to theoretically distinguish between the 'Emotional Management' and 'Emotional Control' factors; Independent analyses/outcome studies not yet published.

Researchers (Year) and Instrument	Instrument Orientation and Focus	Comments and/or Limitations
Jordan, Ashkanasay, Hartel, & Hooper (2002) Workgroup Emotional Intelligence Profile-Version 3 (WEIP-3)	Previous versions adhered to Salovey and Mayer's (1990) model, but Version 3 is more aligned with Mayer and Salovey's (1997) revised model (see Jordon et al 2002. p.202); Has two major scales: 1. Ability to deal with own emotions (with 3 subscales: Awareness of emotion; Ability to Discuss Emotion; Ability to Use Emotion to Facilitate Thought), and 2. Ability to deal with others' emotions (with 4 subscales: Ability to recognise other's emotions; Ability to detect false emotion; Empathetic Concern; Ability to manage other's emotions).	Items measure EI within a team (e.g. 'I can explain the emotions I feel to team members'); Predicated on the notion that the influence of EI on teams can be considered as an aggregate phenomenon; Good total scale reliability ($\alpha = .86$) but two of the seven individual subscales were below the desired level of $\alpha = .7$ in initial study (Aware of own emotion $\alpha = .58$; Detect false emotions $\alpha = .63$); Emergent factors do not load onto the Mayer & Salovey (1997) model; Team EI scores predicted performance, but there was also a counter-intuitive result. The performance of the Low EI teams inexplicably matched the High EI teams by the end of the study. (Jordon et al. 2002)
Petrides & Furnham (2002) Trait Emotional Intelligence Questionnaire (TEIQue) and Sort Version (TEIQue-S)	A mixed-measure of trait EI, aligned with personality and EI competencies; 15 subscales including factors such as adaptability, assertiveness, emotional expression, happiness etc.	A 144-item measure with a shorter 30-item version available (Petrides & Furnham, 2002); Full-scale reliability good ($\alpha = .86$) but four of the 15 subscales had reliabilities less than $\alpha = .7$ in preliminary study (Petrides & Furnham, 2002); Inadequate reporting of validity testing for both versions; Psychometric properties of shortened version have not been published at this time.
Law, Wong & Song (2004) Wong and Law Emotional Intelligence Scale (WLEIS)	Based on Davies et al's (1998) definition of EI. The four dimensions of this definition include: 1. Appraisal and expression (oneself), 2. Appraisal and recognition of emotion (others), 3. Regulation (oneself), and 4. Use of emotion to facilitate performance. This definition is most related to Mayer & Salovey's (1997) ability perspective.	A short 16-item survey of general EI framed within 4 subscales; Item pool initially generated by undergraduate and MBA students from Hong Kong; Unidirectional item-keying; Validated mostly on students; Evidence of convergent and divergent validity presented by the authors; Low to moderately correlations with some personality variables; Good reliability (Law et al., 2004; Wong & Law, 2002); Not independently tested at this time.

Table 3.2. shows that there are some psychometric concerns with EI surveys.

Generally, each of the reviewed scales has at least one area of weakness, whether it be low

reliability (e.g. Hay Group, 2002), a lack of factorial validity (e.g. Schutte et al., 1998), or an absence of independent research predicting important outcomes (e.g. Wong & Law, 2002). Yet perhaps the most important issue is that implementing some self-report measures may be problematic due to their tendency to overlap with personality variables (Ciarrochi, et al., 2000; 2001; Muchinsky, 2000; Higgs, 2001). The link between EI and personality may reflect the formative influence of personality on EI development, or personality itself being able to influence affective experiences. It is also possible that EI measures that significantly overlap with trait measures are reclassifications of personality typologies (Matthews et al., 2002). Yet, while remaining critical of such scales, Mayer et al (2000a) observed that the content of some self-report items are sufficiently divergent from personality tests and thus may measure a distinct construct. In contrast with many EI self-report measures, typologies of personality and their corresponding measures do not represent actual behaviours (Higgs, 2001). EI research with some self-reports may serve to emphasise and reframe aspects of personality which explicitly or implicitly influence behaviour in organisations. Others are more certain that the overlap with personality represents a serious challenge to the conceptualisation of EI as a cognitive ability (Roberts et al., 2001).

Another problem with EI surveys relates to possible response-set bias inherent in the self-report method. In this regard the scales rely on a person's self-awareness, which is an EI ability in itself. Rather than measuring actual EI, these tools can only gauge information concerning perceived EI. This self-perception may not be particularly accurate due to tendencies towards socially desirable responding and impression-management (Roberts et al., 2001). To offset these concerns, some surveys adjust EI scores according to embedded 'response bias' scales (e.g. Bar-On, 1997). However, the effectiveness of

these 'hidden' measures is equivocal and largely untested. Regardless, it may be argued that both self-perceived EI and actual EI are of consequence in organisational research. EI self-perceptions may still predict a variety of phenomena, such as adaptability to life's difficulties (Ciarrochi et al., 2001) and academic achievement (Schutte et al., 1998).

Table 3.2. also shows that some EI scales are available in 360 degree or 'other-rated' forms, or can be adapted as such. This change of foci may avert some response-style issues, although a respondent rating his/her peers' EI also needs a sound degree of awareness to be accurate. Even if a person's perception of another's EI is erroneous, important information may still be uncovered through other-rated methods. This is because affective responses are dependent on perceptions, or, "what people believe to be true can be as important as what is true" (Ciarocchi et al., 2001, p. 30). How employees perceive others' EI seems central to predicting workplace attitudes and other important outcomes.

Despite many limitations, self-report or other-rated EI surveys have some distinct advantages for the researcher. The major strength is their usability and cost-efficiency in allowing people to summarise EI (or perceived-EI) with a relatively small number of items. In addition, while they may not satisfy criteria for an intelligence measurement, in the very least they may be investigating behaviours related to emotional competence (Ciarocchi et al., 2001). On the whole many self-report measures also have good internal consistency, especially at the total-test level.

Rahim and Minors (2002) Emotional Intelligence Scale. Completed by all participants, the 40-item Rahim and Minors (2002) instrument was chosen as the

emotional intelligence measurement for the employee survey. It measures EI as a mixed-model based on Goleman's (1995; 1998) EI typology. As such, the 5 dimensions were: 1. Self-Awareness, 2. Self-Regulation, 3. Self-Motivation, 4. Empathy, and 5. Social Skills, each measured by 8 items. These components were discussed in detail within Chapter II (Literature Review). This scale implemented a 7-point Likert scale as the response continuum, ranging from '1=strongly disagree' to '7=strongly agree'. A 7-point scale allows for a good range of scores and potentially enhances reliability (Springer, Abell & Hudson, 2002). Also, the midpoint option (4 = Undecided) allowed for the respondent to remain neutral. While some instrument developers prefer to omit this category in favour of a forced choice format, eliminating the neutral position may compromise the goal of the measurement; that is, to provide respondents, even neutral ones, the chance to report their true attitudes, intentions and perceptions (Springer et al, 2002).

Rahim and Minors (2002) developed the instrument using samples across six countries (N=1395) using 'other-rating' methodology to offset common method variance. As noted, reliability for one of the five subscales in the original study was found to be lower than desirable, (Rahim & Minors 2002, α = .62 – .96) but subsequent analyses showed very good internal consistency for all dimensions (Rahim & Minors, 2003, α = .75 – .96). The scale has also demonstrated good face, convergent and discriminant validity (Rahim & Psenicka, 2002). In terms of factorial validity, in Rahim and Minor's (2002) study, the five factors loaded cleanly onto Goleman's (1995) model. However, a recent independent study suggested the structure of the scale needs further research and validation (Schlechter & Boshoff, 2003). The scale has showed some promise in predicting important organisational outcomes, such as problem solving during conflict and a concern for quality (Rahim & Minors, 2003).

The scale was chosen for in part due to its focus on the Goleman mixed-model. It was reasoned that this may offer interesting insights into current measurement debates, and present a contrast to the implemented ability measures within Study 2. Goleman (2001) argued that EI, as defined by Mayer and Salovey (1997), represents our potential for achieving mastery of specific abilities in this domain, while the emotional competencies themselves represent the degree to which an individual has mastered specific, skills and abilities that build on EI and allow them greater effectiveness in the workplace (Goleman, 2001). The research design, which requested that employees rate their leaders' emotional intelligence, also necessitated the choice of an 'other-rated' EI questionnaire or an amended EI 'self-report' survey. While perhaps needing further refinement, the Rahim and Minors scale has sound reliability, is succinct and demonstrates potential for predictive validity.

It should be noted that the Genos (2003) and the Wong and Law Emotional Intelligence Scale (WLEIS) (2002; Law et al., 2004) may also have been usefully investigated in the current research given their concise framework and reasonably low correlations with personality. However, neither were available at the commencement of this project.

Transformational Leadership (TL)

TL was measured with a 20-item subscale contained within a 32-item adapted version of the Multi-Factor Leadership Questionnaire (MLQ) (Engelbrecht, 2001, personal communication; Kraft, Englebrecht & Theron, 2003). All items were measured on 6-point Likert scale from '1=strongly disagree' to '6=strongly agree'. The original MLQ was initially developed by Bass and Avolio (1995), and, according to Parry (1998) is the most

widely used measurement for transformational and transactional leadership characteristics. Working with Avolio, Engelbrecht (2001, personal communication) purified the original instrument via exploratory and confirmatory factor analysis to produce seven factors, each parallel to the dimensions contained in the full-length MLQ and shortened MLQ (5X). The four transformational subscales within the adapted MLQ included idealised influence (eight items), inspirational leadership (four items), intellectual stimulation (four items) and individualised consideration (four items). The unearthed transactional leadership subscales were contingent reward (four items), management-by-exception (Active) (four items) and management-by-exception (Passive) (four items). Englebrecht found good internal consistency reliabilities for all subscales, ranging between α=.72 to α=.93. The shortened questionnaire was chosen over the original as it was parsimonious whilst still being construct valid. While all items were included in the employee questionnaire, only the transformational subscale items were analysed, as only these were relevant to the study hypotheses.

There were two major reasons for choosing a variant of the MLQ to measure transformational leadership behaviour. One reason was the amount of available data supporting the MLQ's adequate psychometric properties (Awamleh & Gardner, 1999). Bass (1997) cited an extensive range of studies from almost every sector and every continent to support the reliability of the questionnaire. Comparable to Englebrecht's figures, Bass and Avolio (2000) reported good internal consistency of all original subscales, with alpha reliabilities ranging from .7 to .92. A second reason for implementing MLQ items is they have been used in a wide variety of studies that have linked leadership with important organisational outcomes (Bono & Judge, 2003; Chen, 2004; Dvir, Eden, Avolio, & Shamir, 2002; Hepworth & Towler, 2004; Hetland & Sandal,

2003; Kahai, Sosik, & Avolio, 2003; Parry & Proctor-Thomson, 2003; Sivasubramaniam, Murry, & Avolio, 2002; Sosik, Potosky, & Jung, 2002). While use of the MLQ is unquestionably prolific, studies into its structure have been more ambiguous.

There is some evidence that the factor validity of the full-scale MLQ and its derivatives is problematic in some contexts. While some studies have found the seven factor structure of the MLQ to be stable across divergent groups (Jung, Avolio, & Bass, 1998; Kraft, Engelbrecht, & Theron, 2003), others have supported that the scale may be measuring more or less than seven factors. For example, Antonakis, Avolio and Sivasubramaniam (2003) endorsed an invariant nine-factor leadership model. On the other hand, Vandenberghe, Stordeur and D'hoore (2002) and Bass, Avolio, Jung and Berson (2003) supported a six-factor solution, while Yukl (1999) contended that the high intercorrelations of transformational behaviours did not make it possible to separate their effects in survey research. These studies advocate the use of exploratory and confirmatory methods to investigate the implied dimensions of the adapted MLQ.

Organisational Trust

Organisational Trust was measured using the 36-item Workplace Trust Scale (WTS) previously developed by the author (Ferres, 2002) and measured on a 7-point Likert scale from '1=strongly disagree' to '7=strongly agree'. Within this scale, 3 subscales were each measured by 12 items, 1. Trust in Organisation, 2. Trust in Co-worker, and 3. Trust in Immediate Manager. A conceptual description of organisational trust was configured from qualitative investigations by the author before item development. The definition of trust generated by this analysis was 'an individual's willingness to act on the basis of his/her perception of a trust referent (peer,

supervisor/manager/organisation) being supportive/caring, ethical, competent and cognisant of others' performance'.

Investigations have backed the internal reliability and validity of the three WTS subscales. Ferres et al. (2004) found that the components had excellent internal reliability, ranging from α= .9 to α=.94. While all 36 items were included in the current study, only the 24 items measuring trust in organisation and trust in immediate manager were of interest to test the proposed theoretical relationships for the present study. Independent research using a double cross-validation of the two manager and organisation trust subscales has supported the construct validity of these dimensions (Schelchter & Boshoff, 2003; Schelchter, Boshoff & Englebrecht, 2004).

The WTS was developed considering the lack of an adequate trust instrument, particularly at the organisational level of analysis (Levin, 1999). For instance, some trust measures focus on trust in intimate relationships rather than organisational interactions (e.g. Johnson-George & Swap, 1982; Rempel & Holmes, 1986). Others were developed to measure personality only (Rosenberg, 1957; Rotter, 1967, 1971; Costa & McCrae, 1985). Some of those that do concentrate on organisational analysis deal only with dyadic interpersonal trust (Butler, 1991; Larzelere & Hutson, 1980; McAllistar, 1995). Indeed, most available information is based at the individual level concerning the perceived trustworthiness of certain individuals (Fairholm, 1994). Moreover, several instruments report inadequate reliability and validity testing (e.g. Larzelere & Hutson, 1980; Scott, 1981).

At a group level, Cook and Wall (1980) measured 'trust in management' and 'trust in peers' as clusters rather than focusing on the individual trustworthiness of a specific manager or peer, which was a useful addition to the literature. However, Levin (1999) has called into question the reliability of one dimension in their scale, and further research is needed clarify its psychometric properties. The work of Albrecht and Sevastos (2000) was also valuable due to their provision of a succinct measure of trust in senior management as a group, and because the scale has a behavioural focus. Unfortunately, the use of the instrument is restricted if one wished to assess the possible effects of peer trust or trust in immediate supervisors. Cummings and Brommiley's (1996) Organisational Trust Inventory (OTI) measures trust between different units within an organisation at a group level, and inter-organisational trust between separate organisations, while Dwivedi's (1980) measure is one of the only instruments that assesses trust at an organisational level. Missing construct validation information narrows the use of Dwivedi's (1980) scale, and the constrained focus of the OTI (i.e. trust *between* two departments or organisations) negates its use when aiming to explore trust at different levels within an organisation. In sum, the multi-level WTS seemed to offer the most potential for exploring trust in both managers and in the organisation.

Dispositional Trust

Five items measured trust as a personality trait on a 7-point Likert scale from '1=strongly disagree' to '7=strongly agree'. The trust questions were taken from the trust-cynicism subscale within the 'agreeableness' factor in the Revised NEO Personality Inventory (Costa & McCrae, 1985). The NEO is one of the most widely used and reliable personality tests (Benjamin, Hopkins, & Nation 1994). Three negatively worded items from the original scale were not included, as the use of reverse coded trust items with

positively coded items is problematic (Kramer, 1996; Albrecht & Sevastos, 1999). The alpha reliability of the original NEO subscale was .90 (Costa & McCrae, 1985). The reliability coefficient of the 5 items in the study by Ferres (2002) was α=.82.

While acknowledging its existence, some organisational theorists have shown little interest in exploring the effect of dispositional trust on trust attitudes (Kramer, 1999). Yet some evidence exists to suggest that individuals vary greatly in their inclination to trust others (Gurtman 1992; Sorrentino, Holmes, Hanna, & Sharp 1995). Based on this assessment, it may be constructive to measure propensity to trust as an individual difference variable when exploring trust in organisational environments. This is consistent with Mayer et al's (1999) assertion that dispositional trust is likely to explain a significant amount of variance in organisational trust scores over and above other situational or organisational variables.

In the absence of any interactional history between individuals, dispositional trust will likely be more influential than situational factors (Creed & Miles, 1996; Kramer, 1999). That is, the influence of dispositional trust on ratings of trustworthiness may not be as strong where employees are asked to judge an individual they know well. In a recent meta-analytic review, a trusting disposition had a significant, albeit small, effect on trust scores (Dirks & Ferrin, 2002). Interactional history may account for researchers experiencing mixed results when using dispositional trust to predict interpersonal trust (McKnight, Cummings, & Chervany, 1988). Dirks and Ferrin (2002) speculated that future research and practice would have greater success if it focused on the characteristics of the trust referent and situational determinants rather than the individual differences of the respondents. Either way, a measure of dispositional trust should be included in studies

of organisational trust to examine the possibility of an individual's propensity to trust contributing to organisational trust ratings. As such, a measure of dispositional trust is included in this study as a control variable.

Change Cynicism

Change cynicism was measured by the 8-item Cynicism about Organisational Change (CAOC) scale (Wanous et al., 2000). The CAOC is divided into two subscales, 1. Pessimism about change, and 2. Dispositional attribution of those responsible for change, each measured by four items per component (alpha = .86 for each subscale). While Wanous et al stated that confirmatory factor analysis "provided some support for the proposed combination of two components of CAOC" (p. 146), actual RMSEA values suggested these two dimensions should be separated. That is, the RMSEA estimate for the unidimensional CAOC was significantly higher than their estimate for the two-factor model (Wanous et al., 2000, p. 141). This indicated that two factors provided a better fit to the data.

The 4-item 'pessimism' subscale was of most interest in the current study as it measured employees' broad attitudes towards change in the organisation. The 'dispositional attribution' component was not deemed theoretically relevant to hypotheses as items related to perceptions concerning 'the people responsible for…making things better/solving problems/making improvements/making changes', and this foci meant that employees could be referring to a specific group, manager, working party or level of management. That is, results could have been confounded by different perceptions of what was meant by 'the people responsible around here'. Thus, only the 'pessimism' scale items were included in the SEM analysis. However, the 'dispositional attribution' component

was included in exploratory analyses to ascertain if the dimension was mutually exclusive from the 'pessimism' items.

Intention to Leave

Intention to leave was measured using a 3-item instrument suggested by Cohen (1993). Cohen developed the scale following Mobley, Griffith, Hand, and Megliano's (1979) validated model of employee turnover, in which intention to leave an organisation is the direct antecedent to turnover. The respondents were asked to indicate their agreement with the following items on a 7-point scale (ranging from 1=strongly disagree to 7=strongly agree): (1) I think a lot about leaving the organisation; (2) I am actively searching for an alternative to the organisation; (3) When I can, I will leave the organisation. Cohen (1991) reported the reliability of the three items as α= .91.

Study 2

In Study 2, two leader EI ability tests were used to explore the effects of EI using performance-based methods. These were implemented in conjunction with the just described 'employee' survey items, so that leader EI scores could be coordinated with employee perceptions of leader EI (Rahim & Minors, 2002) and transformational leadership (Englebrecht, 2001, personal communication), and self-reported organisation/manager trust (Ferres, 2002), dispositional trust (Costa & McCrae, 1985), change cynicism (Wanous et al, 2000) and intention to leave (Cohen, 1993). The chosen ability tests are then outlined.

Critique of EI Ability-Testing

An appraisal of the Multi-Factorial Emotional Intelligence Scale (MEIS; Mayer and Salovey, 1997a; Mayer et al., 1999) and Mayer Salovey Caruso Emotional Intelligence Test (MSCEIT; Mayer, Salovey & Caruso, 2002) provides an overview of issues and concerns associated with ability-based emotional intelligence testing. First, studies evaluating the MEIS have generally provided support for its conceptual validity and reliability (Ciarrochi, et al, 2000; Mayer et al., 1999; Roberts, et al, 2001). Ciarrochi et al. (2000) argued that the strengths of the measure were that it was based on actual performance, the test samples an ample array of behaviours, the subscales were generally reliable and it correlated with a number of criterion measures such as general intelligence, age, life satisfaction and empathy. Roberts et al. (2001) also found positive correlations between subtests of the MEIS, which support an important criterion for an intelligence measure. In addition, evidence generally supports the conceptual independence of the MEIS from well-established personality tests (Ciarrochi, Deane & Anderson, 2002; Forgas & Mayer, 2001; Roberts et al., 2001). The MEIS has also been shown to fulfill the three important criteria for EI to be considered an actual 'intelligence' previously described. Such research provided encouragement for using the MEIS in research and applied settings, yet it also stimulated debate concerning its psychometric properties.

One issue of contention was the reliability of the smallest components of the MEIS. In their study, Mayer et al. (1999) found that the split-level reliability of the test at the full-scale level was excellent ($r = .96$), and branch-level reliability for their revised factors was very good ($r = .81$ to $r = .96$). However, some of the alpha reliabilities for the single subtests were below the desirable level, a finding mirrored in studies from Ciarrochi et al (2000) and Roberts et al. (2001). In their study, Ciarrochi and colleagues (2000)

removed the task with the lowest reliability from further analyses and concluded that the uncovered emotional intelligence factors reached satisfactory reliability levels. Roberts et al (2001) were more abrasive in their criticism of the MEIS subtest reliability, particularly within the emotion management branch, and argued that it should not be used in applied settings. Mayer et al. (2001) responded by saying that the focus should not be on the reliability of the smallest components of the test but on the branch or full-scale level. They argue that Roberts et al's (2001) expectation that all subcomponents should display consistently high reliability "has little to do with whether EI exists" (239) but concede that it is an issue of utility. That is, the scores fed back to participants should be an accurate indication of their abilities. Yet they contest that given the satisfactory reliability of the full-scale and branch-level scores, the MEIS would still be acceptable for use with activities such as organisational selection and leadership development (Mayer et al. 2001).

Another criticism directed towards the MEIS concerned its two scoring methods (Roberts et al. 2001). The first method involves converting each response to an expert answer established by Mayer and Salovey (1997) to determine responses that are more correct than others. Responses matching the expert answer (choosing the selected value, or the integer on either side of it) score '1'. If the participant does not choose the expert answer (plus or minus one), they score a '0' for that item. In the second method, the group consensus serves as a criterion (Mayer et al., 1999). Each response is scored according to its conformity with the proportion of the participant group who chose the same alternative.

Mayer et al's (1999) results provided evidence of the general superiority of the consensus scoring method in relation to the MEIS expert scoring method, as did Roberts et al.'s (2001) research. Yet Roberts and colleagues (2001) leveled criticism, conceptually, at a method that scores correct answer on the basis of group agreement. Determining correct

answers to items of ability tests using a consensus scoring method is different from many other tests of cognitive ability, and the method precludes items of graduated difficulty (Palmer, Gignac, Manocha & Stough, 2003b). Yet some researchers such as Legree (1995, in Mayer et al. 1999) have asserted that such a method is advantageous. Legree's (1995) research indicated that individual experts are typically unreliable, and that as experts are aggregated they might be expected to approach the general consensus in the area. Nonetheless, Roberts' et al main concern was a lack of convergence between these scoring methods. Mayer et al (2001) countered this point by indicating that over half of the scores moderately converged in their MEIS study. Still, it is equivocal as to whether this degree of convergence could be taken as evidence that "better answers can be distinguished from worse answers" (Mayer et al. 1999, p. 288). Mayer et al (2002; 2003) further addressed this problem in their development of a new expert consensus criterion for the MSCEIT. Yet previous MEIS studies support the likelihood of general consensus scoring bringing differential results compared with the original expert method when using the earlier MEIS scale. Indeed, consensus scores are probably expected to be more reliable and to result in a clearer factor structure when using the MEIS due to an underdeveloped MEIS expert-scoring criterion.

There have also been varied findings concerning how many factors the MEIS measures. Being based on a four-part model, critics argue that four factors should emerge in factor-analytic investigations (Roberts et al., 2001). Early results were supportive of the scale representing a general factor of emotional intelligence and a four-branch model of 'emotion perception', 'emotional facilitation', 'emotional understanding', and 'emotional management' (Mayer & Salovey, 1997b). Later factor analytic work from Mayer et al (1999) found evidence for an overall factor that represented three underlying skills where

the 'emotion perception' and 'emotion assimilation' tasks combined to form a single 'understanding' factor along with the 'perception' and 'management' facets. In another study, Roberts et al. (2001) reported that the scale measured three comparable components and a general factor. However, unlike Mayer et al., the assimilation items in their study did not load onto any of the EI factors. Furthermore, Roberts et al's later confirmatory factor analyses tended to support Mayer and Salovey's (1997a) initial conception of the four-branch EI model being superior to a three-factor model. Ciarrochi et al's (2000) findings with the MEIS were different again. Their explorations indicated the test was picking up on a general factor of emotional intelligence identified by two EI dimensions labeled 'emotion perception' and 'emotion understanding and management'.

While mostly deviating from Mayer et al.'s (1997a) original four-part EI model, the MEIS factors found in previous studies overlap conceptually. Each of the aforementioned studies indicated that EI, as measured by the MEIS, might be represented as a two-level hierarchy (Mayer et al., 2000). At the crest of the hierarchy is an overall EI factor characterised by a set of correlated abilities. The construct might be further broken down into two, three or four secondary factors representing a mix of emotion perception, emotion assimilation, emotion understanding and emotion management. Indeed, Mayer et al (2003) believe that the domain of EI is well-described by a variety of models, including, but not limited to, one, two, and four-factor representations.

Recently, Mayer et al. (2000) revised the MEIS instrument to provide a shortened version for professional use, the MSCEIT, which informed debate over scoring, reliability, and factor structure. In their 2003 study ($N = 2112$), Mayer et al found that answers from 21 experts (from the International Society of Research in Emotion) converged on correct

test answers with greater reliability than the general consensus sample. A high level of convergence between expert consensus and general consensus scoring was also found, and participants' scores were near interchangeable according to these two different methods. Palmer et al. (2003b) obtained similar findings in regards to scoring method convergence when they recently replicated Mayer et al's standardisation study with an Australian sample ($N = 451$). Mayer et al (2003) reasoned that if such findings continued, then the expert criterion "may become the criterion of choice for such tests" (p. 104). Also, these findings may allay concerns from Roberts et al. (1998) that "the most severe psychometric difficulty" with the MEIS was "the lack of convergence between expert- and consensus-scored dimensions" (p. 224).

Despite the reduced length of the test compared to the MEIS, Mayer et al (2003) found that the total-test reliability of the MSCEIT was excellent, and its reliability at the branch level was good for both scoring methods. However, like the MEIS, reliabilities at the task level were at times less than the desired level and again results implied that interpretation should focus on the total scale, area and branch levels. Despite this recommendation, Palmer et al's (2003a) independent study found that the MSCEIT was below desirable reliability levels at the branch level. Most notably, the reliability of the MSCEIT was found to be much lower than that reported by Mayer et al. (2003) at all levels, with branch scores across various norms ranging from $r = .44$ to $r = .70$, compared to Mayer et al.'s (2003) range of $r = .76$ to $r = .91$. Palmer et al. (2003b) noted differences in sample size, ethnic composition and test administration as possible causes of this discrepancy and called for further independent reliability analyses of the MSCEIT.

With regards to factor structure, Mayer et al.'s (2003) confirmatory factor analyses cross-validated earlier studies supporting one, two and four factor solutions of emotional

intelligence (Ciarocchi et al., 2000; Roberts et al., 2001). While all models fit well and

provided viable representations of EI, there was an increasingly better fit from the simpler

one-factor model to the four-factor model. Consistent with Mayer et al.'s (2003) results,

Palmer et al. (2003b) uncovered progressively better model-fit statistics as the number of

factors inputted increased from one, to two, to four. Unlike previous findings however,

Palmer et al. (2003b) found that only the four-factor model provided a really good fit with

their data. This provides evidence that the MSCEIT assesses the underlying theory of EI

that it was designed to measure (Mayer et al., 2003).

While preliminary evidence of the reliability of the MSCEIT is equivocal, results

from two extant studies suggests an improvement in the validity of scoring methods and

factor structure compared with the MEIS (Mayer et al., 2003; Palmer et al., 2003b). As has

been described, performance-based instruments such as the MEIS and MSCEIT may have

the most potential for furthering research in the area of emotional intelligence, at least

from an ability perspective (Weinberger, 2002). Mayer et al (2002) noted that such tests

offer assessment based on objective ability-based data "that is not overly subject to

response-style biases" (p. 8). However, to provide utility, these tools need to be tested,

validated, retested and revalidated by independent researchers. Also, as Mayer et al (2003)

observe, the value of any measurement instrument can be settled by studies of their

predictive power.

Given its brevity and adequate psychometric properties, the MSCEIT is perhaps

the scale of choice for assessing EI organisational environments. However, there are

potential problems with its operation. At this point in time, unlike its MEIS antecedent, the

MSCEIT is in relative infancy and largely unsupported by published, independent research

linking it to important outcomes. A further limitation may be its cross-cultural

representativeness; while Mayer et al. (2002) maintained that "the favourable reactions from respondents from different countries lend support to the international applicability of the test" (p. 29-30), the majority of the normative sample was made up of white Americans. Ashton-James (2003) posited that both the MEIS and MSCEIT merely measure people's knowledge of emotion, rather than tapping into true emotional abilities. For Ashton-James (2003), people have to actually experience the emotion they are being asked to respond to in an authentic environment. Another potential limitation is the comparatively limited number of EI researchers who are using the MSCEIT. This may because scoring procedures are centralised and commercialised by the publisher, and it is very expensive to administer on a large scale. The MSCEIT was unavailable at the commencement of this project, so an adapted version of the MEIS was implemented for the first wave of data collection. The MSCEIT was then utilised for the second wave of data.

The Amended Organisational Multifactor Emotional Intelligence Scale (AO-MEIS)

The Amended Organisational MEIS (AO-MEIS) was based on a shortened version of the Multifactor Emotional Intelligence Scale (MEIS-v1.3, Mayer et al., 1997a). The test consisted of 7 tasks which were divided into 3 branches, as shown in Figure 3.3.
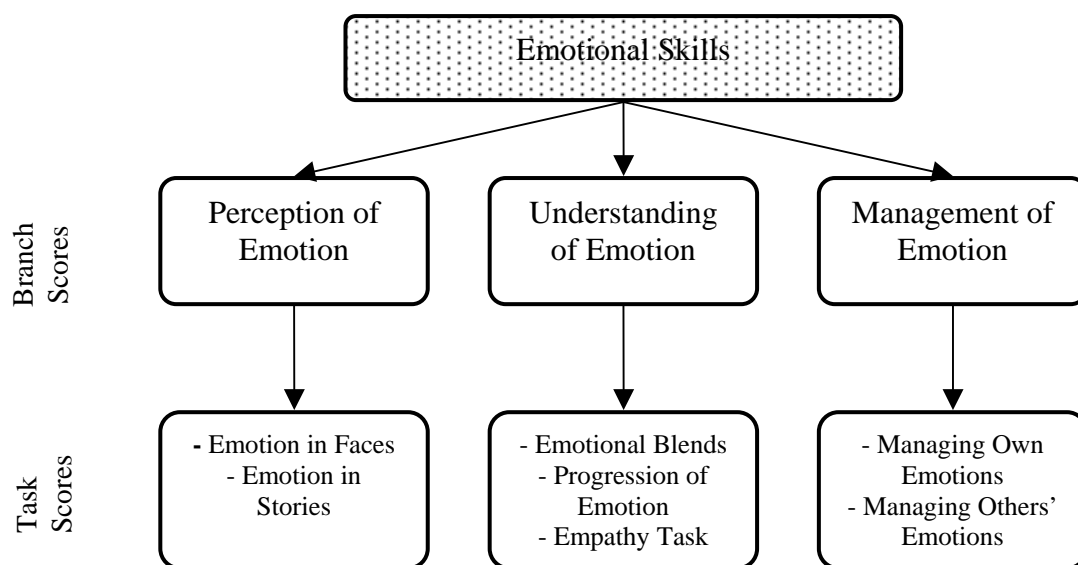
Figure 3.3. The structure of the AO-MEIS

Figure 3.3 shows three branches representing emotional intelligence. These branches are consistent with the emergent factors the study assessing the construct validity of the full MEIS (Mayer et al., 1999); perception, understanding and managing.

The MEIS-v1.3 was adapted for use by the researcher, with moderate changes involving conversions from 'personal' to 'work' based scenarios and the exclusion of a Synesthesia subtest. The Synesthesia test was deleted because it was the only task in the MEIS-v1.3 that measured the fourth 'Assimilation' branch in Mayer et al's (1997b) model, and 'Assimilation' did not emerge as a separate factor from 'Understanding' in Mayer et al's (1999) latter MEIS research. Also, none of the 'Assimilation' items loaded onto the emergent EI factors in Roberts et al's (2001) exploratory analysis of the full MEIS. The length of the remaining tasks remained unchanged from the MEIS-v1.3.

A pilot study of the first version of the AO-MEIS was conducted before distribution with Sample 1 (Ferres & Crombie, 2003). The split half reliability of all items

indicated that a composite score on the scale yielded a reliable measure of emotional intelligence (r(124) = .82). The 'Perception' and 'Understanding' branches also showed adequate split-half reliability (r(124) = .77 and r(124) = .72). However, the 'Managing' subscale (r(124) = .63) was below the recommended level of .7, and each of the branch score reliabilities obtained was less than those of the original MEIS factors (α = .81 to α = .96). The researcher added two further stimuli with twelve items to the 'Managing' subscale before further implementation of the instrument.

The 'Emotion Perception' branch consisted of 6 stimuli and 39 items that tested an individual's ability to correctly perceive emotional information. It was measured via two subtests- Faces and Stories. The Faces subtest (3 Stimuli, 18 Items) remained unchanged from the MEIS- v1.3. It consisted of three photographs of people's faces representing varying emotions. The respondent is asked to answer on a five-point Likert scale whether a specified emotion such as happiness was '(1) Definitely Not Present' or '(5) Definitely Present' in each of the photographs. The Stories task (3 Stimuli, 21 items) consisted of passages involving people experiencing different emotions. Two of the three passages were taken verbatim from the MEIS-v1.3, and one was amended. The test-taker is asked to read each story and indicate how much of a specified emotion is present in the person telling the story.

The 'Emotion Understanding' branch was measured by three tasks to evaluate a person's reasoning about and understanding emotions (18 Stimuli, 34 Items). These included Blends and Progressions, which remained unchanged from the MEIS-v1.3, and Relativity which was adapted by the researchers. The Blends task (6 Stimuli, 6 Items) required responding to items analysing the complexity or blending of emotions. For example, 'Optimism most closely combines which two emotions? (a) pleasure and

anticipation (b) acceptance and joy (c) surprise and joy (d) pleasure and joy.' The

Progressions task (8 Stimuli, 8 Items) asked participants to answer questions concerning

how emotional reactions proceed over time, with a focus on the intensification of feelings.

For example, participants were asked to predict what emotion would result from feeling

'guiltier and guiltier' to the point of questioning self-worth: (1) Depression (2) Fear (3)

Shame (4) Pity. The third task, Relativity (2 Stimuli, 20 Items) depicted social encounters

in a work context between two or more characters. The participant's task was to estimate

the feelings of two characters involved in the story.

The 'Emotion Management' (8 Stimuli, 32 Items) branch consisted of two tasks

that measured the ability to manage emotions in oneself and others (Management of Self,

Management of Others). Four of the stimuli were oriented toward being able to regulate

the emotions of others, while two concerned self-management. Three of the stimuli

remained unchanged from the MEIS-v1.3, and five were adapted. This task consisted of

brief descriptions of work-related situations involving either the participant or fictional

characters in need of assistance.

Consensus scoring was chosen as the scoring method for all items in this survey.

As previously reported, existing studies with the full MEIS (Mayer et al., 1999; Roberts et

al., 2001) reported more reliable results and a clearer factor structure using consensus

scores compared to the expert-scoring criterion. With this method, each response was

scored according to its conformity with the proportion of the participant group who chose

the same alternative. This involved calculating the frequencies of responses for each item.

In an example given by Mayer et al. (1999), "if .51 of the participant group reported that

anger was somewhat present ('4' on the scale), then a participant who chose '4' would

receive .51 for that item. If the participant believed that anger was definitely not present

('1' on the scale), and only .06 of the sample agreed, then the individual would receive .06

for the item" (p. 274). Mean percentages were calculated for each subscale, with the total

EI score being the mean of the subscale percentages.

MSCEIT V2

Developed from the MEIS, the MSCEIT V2 (Mayer, Salovey, Caruso, 2002) had

many structural similarities to the AO-MEIS, although the items and subscales were

different, as shown in Figure 3.4. The 141-item MSCEIT V2 comprised 8 subscales, 2

relating to each of the four branches of the ability model (Mayer & Salovey, 1997b): 1.

Perceiving Emotions (Perceiving), 2. Using Emotions to Facilitate Thought (Using), 3.

Understanding Emotions (Understanding), and 4. Managing Emotions (Management).

Like the AO-MEIS, each subscale comprised a number of stimuli or item parcels that

contained individual items. Some subscales contained unconnected items in that they

required only one response per stimulus, while many items required up to five responses

per stimulus. Mayer et al. (2002) varied the response formats across the subscales to

reduce correlated measurement error and to guarantee that results generalised across

response methods.
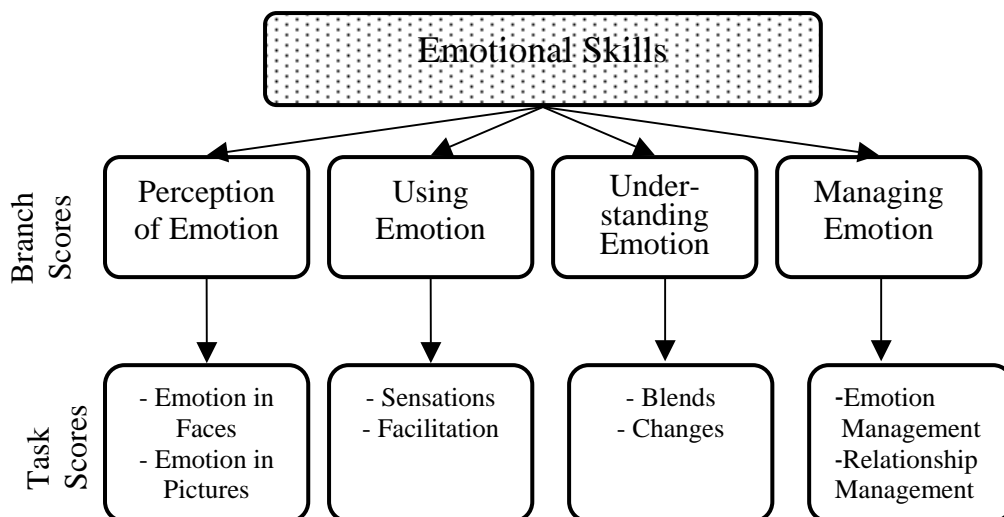
Figure 3.4. The structure of the MSCEIT V2

'Perceiving Emotions' (10 stimuli, 50 items) was measured by the Faces and Pictures tasks. In the Faces test (4 stimuli, 20 items) participants viewed four colour photographs of faces and were asked to indicate the degree to which five specific emotions- happiness, sadness, fear, surprise, and excitement- were inherent in the stimulus on a five-point rating scale. The Pictures test (6 stimuli, 30 items) was comparable except that different pictures of landscapes and abstract designs were presented as the stimuli and the response scale consisted of cartoon faces depicting varying degrees of the specific emotions.

'Using Emotions' (10 stimuli, 30 items) was measured by the Sensations and Facilitations tasks. In the Sensations task (5 stimuli, 15 items), subjects were asked to imagine certain emotions and to indicate the extent to which they matched different sensations. In the Facilitation task (5 stimuli, 15 items), participants were asked to indicate the extent to which certain emotions would assist certain cognitive tasks or behaviours. For example, to what extent would feeling anger, excitement or frustration be helpful to feel when composing an inspiring military march?

'Understanding Emotions' (32 stimuli, 32 items) was measured by the Blends (12 stimuli, 12 items) and Changes (20 stimuli, 20 items) subscales. The Blends test requested that participants identified emotions that combined to form more complex feelings (e.g., that shame, surprise, and embarrassment combine to form a. jealousy, b. sadness, c. guilt, d. envy, or e. humiliation). The Changes test participants are required to identify emotions that result from the intensification of certain feelings (e.g., a woman felt more annoyed that a coworker took credit for her work, and when he did it again, then the woman felt anger, annoyance, frustration, etc).

Lastly, 'Managing Emotions' (8 stimuli, 29 items) was measured by the Emotional Management and Emotional Relationships subscales. In the Emotional Management test (5 stimuli, 20 items), participants were asked to indicate how effective certain actions might be in regulating certain moods and emotions (e.g. reducing anger). Similarly, in the Emotional Relationships test (3 stimuli, 9 items), participants were asked to indicate how effective the actions of a person might be in regulating the emotions of another (Mayer et al., 2000a).

The test distributor, MHS, scored the present data using the expert consensus weights. Results were received at the Total, Area (Experiential, Strategic), Branch and Task levels. As stated, information sheets and all employee survey items are contained in Appendix A. A sample of items from the AO-MEIS and MSCEIT is also included in this appendix. Copyright restrictions negate the inclusion of more than six items of these two instruments.

Procedures

Although there were some similarities, research procedures differed somewhat for the two participating organisations. In part, this was due to the differences in locality, and also because Organisation B was not given the Leader Survey. The procedures for each sample are now discussed.

Sample 1 (Organisation A)

Several steps were taken to prepare Sample 1 for the upcoming research. Firstly, the researcher met with key representatives of the organisation to discuss research design and distribution. One month prior to administering the surveys, a presentation was made to all state-wide managers at a management retreat to outline the study. Three internal emails were sent to all employees discussing aspects of the research. These emails also noted times for three phone-hookups which provided employees with opportunities to ask questions and engage in dialogue with the researcher. On the eve of the survey circulation, the researcher presented two additional information sessions, which were open to all staff at the head office. The researcher was on-site for two days during the survey distribution to maintain visibility throughout the process.

The research for Sample 1 implemented an organisation-wide, longitudinal, mail-out/mail-back survey design. Survey methodology was chosen to gain breadth of information regarding the EI of leaders and related organisational variables. Survey method gave easy access to the study population thereby permitting the widest coverage of possible participants. While mail-out/mail-back survey response rates are generally lower than that of phone or in-person interviews, mail methods maintain the greatest amount of confidentiality and anonymity (Miller, 1994). Increased confidentiality was especially

important in the current research considering the sensitive nature of an employee rating their leader's EI. Mail is also one of the cheapest methods of data gathering and allows easy follow-up (Miller, 1994).

The surveys were distributed to leaders and employees across all areas within the organisation using confidential matched-sampling techniques. A person nominated by the organisation's management provided the researcher with an anonymous organisational chart, which noted all managers/team leaders, their location, position and the number of staff each supervised. The researcher then sent each manager and team leader a survey pack according to their position, without learning the names of any potential respondent.

Survey packs for Wave 1 consisted of one leader questionnaire (the AO-MEIS) plus a manager information sheet. Also included were numerous employee questionnaires, reply-paid envelopes and employee information sheets. Managers and team leaders were invited to complete the leader AO-MEIS and distribute an employee survey/information sheet/reply-paid envelope to each employee they managed. Employee surveys asked subordinates to rate their leader's emotional intelligence and leadership style, and self report on levels of trust, change cynicism and intent to leave (see 'Measures'). Leader and subordinate surveys were differentiated through different coloured paper, and matching of the two occurred through a numerical coding system. Confidentiality and anonymity was assured, as supplied reply-paid envelopes were addressed to the researcher, and did not travel via individual leaders.

All participants were asked to complete and return the survey within four weeks at their own convenience, either at work or at home. Individual non-respondents could not be

identified. However, two organisation-wide email reminders were sent during this time, including one from a senior manager encouraging participation in the research.

For Wave 2, the above procedure was repeated approximately 11 months following the collection of surveys from the first distribution. This time-lag was not optimal, but it was the most convenient for the organisation and allowed a significant interval to test for if the measurement model and relationships varied over time. The employee survey remained the same. However, after initial analyses showing poor reliability, the AO-MEIS was replaced with the MSCEIT for the second distribution. This meant that only the employee survey could be studied longitudinally. Passwords nominated at each survey distribution were coordinated across Time 1 and Time 2, and then replaced with a numerical code to maintain anonymity.

The longitudinal design was advantageous for two reasons. First, it provided a measure of the constructs across time, thus offering an opportunity to explore test-retest reliability. Second, the distribution of the second survey offered the chance to investigate sample representativeness. This can be achieved partly through the analysis of potential demographic differences between second-round consenting and non-consenting participants. This significantly reduces at least one threat that pre-existing differences among individuals account for differences in the models (Shklovski, Kraut & Rainie, 2004).

Shklovski et al. (2004) acknowledged that longitudinal designs are not panaceas, and are subject to some threats to validity within such studies. For instance, events coinciding with time may drive changes in explored variables and their outcomes. These

covariates could be internal to the individuals, such as learning or maturation, or external, such as a change in organisational culture. Also, Shklovski et al. (2004) argued that because of errors of measurement, pre-existing variation among participants is never completely statistically controlled in longitudinal designs.

Sample 2 (Organisation B)

Organisation B was approached by the researcher through their department of Human Resources. Prior to the survey distribution for Sample 2, the researcher encouraged participation by sending information to organisational representatives. Teleconferences were held between the researcher and Sample 2 management. Staff were also emailed twice about the upcoming research.

The employee survey was converted to a web-based questionnaire so that staff across all cities could be invited to participate. The items were parallel to those used in the Sample 1 employee questionnaire, in that respondents were asked to evaluate their immediate supervisor's EI and leadership style, and then report on their own levels of trust, change cynicism and intention to leave.

For the survey distribution, an email was sent out to all employees within Sample 2. This email contained an information page and a link to the on-line survey that was kept on the University of Adelaide's web-server. Two follow-up emails were then dispatched. Upon completion of each questionnaire, raw data was automatically transferred to a Microsoft Excel file from the server, which was subsequently converted to an SPSS spreadsheet. No identifiers were obtained throughout this process. Employees were

prompted by the computer program to complete each question on the survey before the survey could be submitted, meaning that there were no cases returned with missing data.

Due to the differences in response modes, equivalence between the employee surveys for Samples 1 and 2 cannot be automatically assumed. Some research has found differences in results across pen-and-paper and online modalities (Barbeite & Weiss, 2004; Cronk & West, 2002). Other research has supported that using different methods to distribute the same survey can bring corresponding results (Buchanan, 2001; Epstein, Klinkenberg, Wiley & McKinley, 2001). The advantage of the Internet sampling procedure for Sample 2 was that it allowed geographical borders to be crossed. While this method could have generated sampling bias in organisations without a high degree of computer usage, it was well-suited to the IT-focus within the company. In addition, the associated problem of generalising Sample 2 to other populations was addressed by the research design that looked at the invariance of results across Samples 1 and 2.

Statistical Programs

All analyses were conducted using SPSS Version 13, AMOS 5.0, LISREL 8.7 and SAS. SPSS 13 was used for descriptive statistics, exploring distributions/outliers, regression, analyses of variance (ANOVA) and exploratory factor analyses (EFA). AMOS 5.0 was used as the primary program for structural equation modelling (SEM), including confirmatory factor analysis (CFA) functions. LISREL 8.7 was also used to cross-reference SEM results from AMOS when applicable. The SAS program was used to calculate power and necessary sample size for the structural model, according to MacCallum et al's (1996) criteria. The syntax for the SAS power analysis is contained as Appendix C.

In regards to the choice of an SEM computer program, AMOS 5.0 was chosen as the principle program as it is 'by far the easiest of the products to use' and a very powerful SEM tool (Holmes-Smith, Coote, & Cunningham, 2004, p.56). LISREL 8.7 probably provides the most complete solution to the estimation problems of structural models, and is one of the only programs with the ability to calculate correlations between ordinal, dichotomous and continuous data (Joreskog, Sorbom, du Toit & du Toit, 2000). However, the LISREL program is relatively more complex in its operation (Kline, 2005). AMOS offers the flexibility of an easy-to-use graphical editor to draw models and generate output, and is packaged with SPSS for seamless use between the two programs. While recent features included with LISREL 8.7 also offer a graphical editor, this tool is arguably much less accessible than the AMOS editor.

There are two main disadvantages with the AMOS program. One shortcoming is that it treats all data as continuous and consequently does not calculate polychoric correlations for use with ordinal data. This may lead to slightly more conservative relationships between variables, but discrepancies are often minor in large samples (Holmes-Smith et al., 2004). Also, when the number of ordinal categories is four and above, "the failure to address the ordinality of data is likely negligible" (Byrnes, 2001, p. 72). Byrnes (2001) noted that continuous methods can be used with little concern if there are more than four categories, and if non-normality is taken into account. Second, AMOS's ease of use may also be a drawback in some instances. That is, "push-button modeling" can encourage the use of SEM in uninformed or careless ways; causes of complex problems or errors may not be readily identified by the researcher (Kline, 2005, p. 7). Thus, LISREL was also

implemented as a secondary program in the current research to clarify results when needed.

An advantage of most SEM programs today is the availability of procedures to accommodate violations of normality. For example, rather than transforming skewed data and losing the original metric of the variables, the asymptotically distribution free (ADF) estimation procedure within AMOS can deal with non-normal data, while LISREL can implement the weighted least squares (WLS) method to contend with the same (Kelloway, 1998). A problem with both these methods, however, is that they generally require exceptionally large sample sizes, which are often unavailable in research paradigms (Joreskog & Sorbom, 1996). In this case, it has been recommended that maximum likelihood (ML) methods be used with a suitable post hoc adjustment for non-normality (Hoyle & Panter, 1995). For LISREL, this involves specifying the Satorra-Bentler χ^2 statistic and standard robust errors (Joreskog & Sorbom, 1996), whereas in AMOS, the Bollen-Stine bootstrap p can adjust for the lack of multivariate normality (Byrne, 2001).

To this point, this chapter has outlined the samples, research design, measures, procedures and statistical programs used for the current project. Next, a synopsis and a rationale for the implemented analyses are enclosed.

Data Analysis

Before analyses were conducted, all data files were subjected to a screening process. Tests for normality were performed and outliers were identified and deleted where appropriate. As less than 5% of the data was missing, cases with missing data were deleted using the listwise method.

The remaining part of this chapter provides a systematic précis of the analyses used for Study 1 (Chapters IV to VI) and Study 2 (Chapter VII). A rationale for utilising Structural Equations Modelling (SEM) and Conformaory Factor Analysis (CFA) is given, along with an overview of the differences between CFA and exploratory factor analysis (EFA). It is argued that EFA and CFA are complementary rather than contradictory, thus justifying their use in ordered progression. The SEM modelling process is then charted, with a discussion of the stages of model specification and respecification of both the measurement model (Chapter IV) and the structural model (Chapter V). Within this discourse, applied cross-validation procedures are outlined before longitudinal analysis (Chapter VI) is discussed. Finally, non-SEM data analysis methods for the leader survey are summarised (Chapter VII).

Study 1: The Employee Survey

Structural Equation Modeling

The greater part of the analyses focused on the employee survey and SEM techniques. Kaplan (2000) suggested that SEM can be defined as a class of methodologies that seeks "to represent hypotheses about the means, variances and covariances of observed parameters defined by a hypothesized underlying model" (p.1). In simpler terms, SEM provides an umbrella of tools which can model relationships between variables of interest.

There are several reasons why SEM methods were used for the current project. In the first case, these techniques permit the specification of quite complex path models, which was a major aim of the research. These procedures are also said to be more flexible and exact than corresponding analytical procedures (Holmes-Smith et al., 2004). In addition, Kelloway (1998) noted that SEM simultaneously considers both issues of measurement and of forecasting relationships. Thus, SEM analyses can estimate relationships among

latent variables which are less likely to be affected by measurement problems compared to more traditional methods (Kline, 2005). CFA together with SEM is particularly useful for multi-group and longitudinal field data with a number of variables, such as that collected for the present research (Hurley et al., 1997).

SEM methods, however, are not without their disadvantages. Nachtigall, Kroechne, Funke and Steyer (2003) noted several potential pitfalls. One problem is the relative complexity of the involved theory and application. There is also a danger of complacently creating models post hoc based on modification indices alone, and ignoring substansive or theoretical issues. In this case, Nachtigall et al. (2003) recommended that researchers do not introduce theoretically meaningless paths and error covariances to improve model fit, but instead find the optimal balance with parsimony and the simplest of comparable models. A third concern is that the data requirements for SEM are very high, meaning that SEM can only be applied to certain projects that have large sample sizes. Despite these disadvantages, Kline (2005) stated that SEM tools incorporate, and supersede, other techniques such as regression, recursive path analysis, analysis of variance, exploratory factor analysis and analysis of covariance.

Factor Analysis

A recommended first step to SEM is identifying indicators or items which unequivocally define the constructs of interest via factor analysis (Anderson & Gerbing, 1988). CFA is an application of SEM that seeks to determine if the number of factors, and the loadings of measurement indicators, conforms to what is expected (Kelloway, 1998). CFA is thought of by many to be more rigorous and parsimonious than 'more traditional'

EFA techniques (Kelloway, 1998). The CFA method also allows the researcher to frame factor analysis within explicit a priori specifications, while EFA is guided by ad hoc rules and intuitive processes. As such, CFA is driven more by theory in "the tradition of hypothesis testing" (Kelloway, 1998, p.2). It also allows better estimates of model parameters by accommodating corrections for measurement error (Kline, 2005).

First-generation techniques such as EFA are often used in conjunction with CFA and SEM to define unidimensional items and constructs. Some researchers have advocated the practice of first specifying an EFA model, and then testing it with CFA on new data (Hurley et al., 1997). EFA offers an efficient means of examining interrelationships among items on a scale. These interrelationships are used to reveal clusters of items that have sufficient common variation to justify their grouping as a factor (Nunnally & Berstein, 1994). CFA procedures, however, do not allow for items to load onto factors other than those which are initially hypothesised (Muller, 1996).

In an article presenting a conversation amongst several academic experts on EFA versus CFA, Hurley et al (1997) offered the argument that CFA alone is too restrictive to result in well-fitting models. Considering the fallibility of most measures, it was argued that EFA can help to maximise the convergent and discriminant validity of items in scales before they are entered into CFA and other SEM procedures. Using EFA before CFA has been justifiably employed in past studies to obtain a refined and functional measurement model (Anderson & Gerbing, 1988). However, as Schrieshem noted (1997, in Hurley et al., 1997), if any parameters are changed in the CFA based on mathematical data, the analysis becomes partly exploratory. The use of CFA in this exploratory manner has attracted some criticism, but is still performed within myriad studies (Hurley et al., 1997).

Notwithstanding, there seems to be greater evidence that both exploratory and confirmatory techniques can coexist when diagnosing scales and their items (Hurley et al., 1997).

Based on the preceding justifications, both EFA and CFA methods were included in the data analyses to specify the measurement model. As a first step, the primary validation sample was split in two. Kline (2005) observed that it is not entirely appropriate to estimate an EFA and a CFA based on the same data, because the respecifications of the model might capitalise on chance fluctuations in a way that compromises generalisability. Subsequently, all employee survey items were entered into an EFA using Sub-Sample 1 from Organisation A. This analysis aimed to uncover the underlying structure of the entire set of variables within the data. This also allowed for an initial examination of factor discriminant validity. Anderson and Gerbing (1982) clearly set out the advantages of testing the dimensionality of several scales related to a specific domain, rather than testing each scale separately. Maximum likelihood extraction with an oblique rotation was used in the EFA, as recommended by Holmes-Smith et al (2004). While the oblique rotation makes the identification of the factors more difficult compared to varimax solutions, it should be used in instances where correlations between the factors are expected (Francis, 1999). Kaiser-Meyer-Olkin (KMO) statistics were also calculated to test sampling adequacy, while Bartlett's test of sphericity was generated to assess if there were significant correlations between the factors. Through the EFA process, a feasible model was produced by retaining items that: (1) Had factor loadings above .3, and (2) Clearly loaded onto one factor only. Items with loadings less than .3 (or -.3) are rarely, if ever, included in final EFA matrices (Smith & Smith, 2004; Kline, 1995). A factor correlation

matrix was created through this process. The analyses then turned to confirmatory methods.

In CFA, there has been debate about the number of items or variables that should be inputted. Classical measurement theory indicates that, all other things being equal, more items lead to better construct representations, greater validity and higher generalisability (Little, Lindenberger, & Nesselroade, 1999). However, modern SEM approaches generally aim for an optimal rather than a maximal number of indicators as a rule in research design (Little et al., 1999). This is particularly true when there is a possibility of too many similar items masking true underlying factors, leading to suboptimal solutions or "bloated factors" (Garson, 2004, p.12). Recent works have emphasised that three indicators per construct in SEM is an optimal number to define each construct (Little et al., 1999). However, these items must be both reliable and construct valid.

Garson (2004) discussed strategies to avoid suboptimilisation in CFA. He implied that the researcher should not just use EFA items with the highest loadings on each emergent factor. The researcher should work with a set of justifiable, face-valid items which adequately represent the construct and that also load on the factor of interest. Garson noted an example if 'job satisfaction' is being measured, including three items in a CFA such as 'I like my office', 'My office is nice', 'I like working in my office' would result in a highly reliable factor, but it would be measuring an 'office satisfaction' domain rather than job satisfaction. To be construct valid, items that represent the broader range of job satisfaction should be chosen, such as those related to the work environment, coworkers, pay and so on (just as long as they all load onto the same job satisfaction

factor). This would result "in the most defensible final factors" (Garson, 2004, p.12). In sum, CFA item selection should fit with underlying theory, rather than being determined purely on the grounds of statistical analyses. This stance was considered in the current study when items for the emergent EFA factors were validated for unidimensionality and fit using CFA.

Before building a complete measurement model, individual, or 'congeneric', CFAs were performed on Sub-Sample 2 to identify a parsimonious set of indicators for each construct they were presumed to represent. This was done in a step-wise fashion, whereby a set of reliable and face-valid items were selected to explain each construct, and the break-down of the model was monitored (Garson, 2004). In most cases, this resulted in three unidimensional items for each factor. In the congenerics with just three indicators, two of the error variances were set to equal to gain a degree of freedom. Otherwise, the three item models resulted in a just identified model with no degrees of freedom (Byrne, 2001). The congenerics were then combined to shape the full model, which was inclusive of all constructs. Convergent validity was established before discriminant validity was assessed. The discriminant analysis involved pairing each congeneric with another to determine if there was excessive collinearity which may vastly inflate standardised regression coefficients in a structural model (Jöreskog, 1999). This examination led to further amendments to the combined measurement model before it was cross-validated.

Fit Indices

Model fit in CFA and SEM can be assessed via a great number of fit indices. The most widely reported method of fit assessment is the chi squared (χ^2) test, which determines whether the observed variables' unrestricted population covariance/variance

matrix is equal to the model-implied covariance/variance matrix (Mueller, 1996). This is an absolute fit measure whereby smaller and significant chi squares suggest less discrepancy between the actual and estimated matrices (Kline, 2005).

While extensively used, several shortcomings associated with the χ^2 hypothesis test have been noted in the literature (Mueller, 1996). For instance, the χ^2 depends on a number of assumptions, such as multivariate normality, a large sample size and the validity of the null-hypothesis. It cannot test just-identified models, rewards more complex models, and is very sensitive to sample size (Mueller, 1996). On this last point, as sample size increases, χ^2 generally increases, leading to the predicament that reasonable models might be rejected based on the χ^2 statistic (Kline, 2005). To reduce this sensitivity to sample size, some reserachers divide the χ^2 statistic by the degrees of freedom, which commonly results in a lower value called the normed chi-square (NC) (Kline, 2005). Rather than looking at χ^2 and its corresponding p value of significance, NC values of 2 to 3 or even up to 5 have been said to indicate reasonable fit (Bollen, 1989). While the χ^2 statistic should generally be reported, if the value is too high, "conventional wisdom is to ignore the χ^2 and to examine other fit indices" before disregarding the model (Hurley et al., 1997, p. 678). Alternative fit indices illustrated in Table 3.3. are less influenced by sample size and have additional interpretative norms.

Table 3.3.

Comparing Fit Indices

Fit Index	Abbreviation and Acceptable Level for Close Fit	Comments
Root Mean Square Error of Approximation and RMSEA Confidence Intervals	RMSEA<.05 = close fit; straddling 0.05 = close fit cannot be rejected; Values up to RMSEA <.08 may be a reasonable fit; 0.08 -0.10 indicate mediocre fit and >.10 indicate poor fit	An absolute fit index that estimates how well the model might fit the population covariance matrix. Also enables models to be tested on the basis of confidence intervals (MacCallum et al., 1996).
Goodness of Fit and Adjusted Goodness of Fit	GFI and AGFI >.95 Values greater than GFI/AGFI .9 indicate reasonable fit	An absolute measure of the relative amount of explained variance and covariance. The AGFI adjusts for the number of degrees of freedom in the model (Byrne, 2001)
Root Mean-Square Residual	RMR<.05	An absolute fit index representing the average of residual value derived from the fitting of the variance-covariance matrices of the hypothesised and sample data (Kline, 2005).
Tucker Lewis Index	TLI>.95 Values greater than TLI .9 indicate reasonable fit	An incremental fit index comparing the fitted model with a baseline model (usually a null model, in which the only relationships are the variances of observed variables) (Byrne, 2001)
Comparative Fit Index	CFI>.93 Values greater than CFI .9 indicate reasonable fit	An incremental fit index again weighing the fitted model against another model (Byrne, 2001)
Akaike Information Criterion and Consistent Akaike Information Criterion	AIC and CAIC have no defined level of fit, but is used to compare two or more models	Addresses issue of parsimony, and takes the number of parameters into account. Smaller values represent a better fit of the hypothesised model (Mueller, 1996)
Expected Cross-Validation Index	ECVI has no defined level of fit, but is used to compare two or more models	Smaller values present the greatest potential for replication (Byrne, 2001)

Returning back to the CFA analyses for the current studies, the fit of the

measurement model was interpreted via the normed χ^2 statistic (NC) and number of

indices included in Table 3.3. The principal measures used were the: (1) Root Mean

Square Error of Approximation (RMSEA), (2) Tucker-Lewis Index (TLI), (3)

Comparative Fit Index (CFI) and the (4) Consistent Akaike Information Criterion (CAIC).

With the RMSEA, MacCallum et al. (1996) strongly recommended the use of confidence

intervals. As AMOS reports a 90% confidence interval around RMSEA values, these were

also considered in the reporting of results and calculations of power. On this last point,

MacCallum et al. (1996) conceived a test of power based on the RSMEA. They provided

both tables and procedures to calculate the power or sample size to achieve the

recommended level of .80. In all, five selected indices gave a broad overview of absolute

(NC or normed χ^2, RMSEA), incremental (TLI, CFI) and parsimonious model fit (CAIC).

Cross-Validation of Measurement Model

After establishing the measurement model in one sample, of central concern was

whether the model was invariant across groups. Cross-validation would be achieved if the

factorial structure of the model could be replicated across independent samples of the

same population (Byrne, 2001). The multi-sample techniques described by Byrne (2001)

were subsequently used to determine the generalisability of the model.

The cross-validation procedure progressed through a number of stages. First, the

form of the baseline measurement model developed from Sub-Sample 1 was separately

estimated for Sample 2. Such models are not expected to be identical across groups, but

they should show uniformity in terms of similarly specified parameters and loadings with

the same factors (Byrne, 2001).

A second step involved analysing the two groups simultaneously for specific

between-group differences, using a series of increasingly restrictive equality hypotheses

(Byrne, 2001). Within this analysis, the pattern of fixed and free parameters remained

constant to the baseline model for each group. The first equality restraint to test group-invariance involved fixing the factor loadings to be equal. The differences in the χ^2 statistic were monitored, with the new degrees of freedom equal to the difference in degrees of freedom for the two models (Bollen, 1989). If the increase in χ^2 was not significant, then the results suggested that the loadings were equivalent across the two groups. The second equality restraint involved keeping the loadings equal, but concurrently constraining the factor variances in the model to be equal. The third restraint involved setting all factor loadings, factor variances and factor covariances as equal. Again, if the increase in χ^2 was not significant at each stage, then the results suggested the model generalised across both samples. While some researchers progress to constraining error variances, Byrne (2001, p. 186) noted that "in general, testing for equality of error variances is considered excessively stringent". However, the methodical sequence of analytic steps just described is highly recommended (Byrne, 2001).

The Structural Model

After obtaining a measurement model, a subsequent step was to test the validity of the posited structural associations through covariance structure modelling (MacCallum et al., 1996). The SEM literature recommends that competing structural models be analysed to assess which model provides the best fit to the data (Kelloway, 1998; Kline, 2005). Tests of competing models were performed for the current study. Indeed, for any hypothesised model, there will often be alternatives that are acceptable in terms of overall model fit (Chin, 1998). In an examination of over 72 SEM studies, Breckler (1990) observed that only one did not specifically acknowledge the possibility of alternative models.

When estimating these models and relationships for the present study, the parameters of the measurement model were fixed so that various theoretically-bound variations were compared with the initially hypothesised (Anderson & Gerbing, 1988). Attention was paid to overall fit, but also to the strength of structural paths and loadings. At this stage, changes to the structural model were also considered (Kline, 2005). This brings the discussion to a fervently contested issue in SEM; that of post-hoc structural model modification.

There are two main positions on post-hoc model fitting. One stance involves researchers who completely oppose the practice (Cudek & Browne, 1983). Byrne (2001) stated that these traditionalists would argue that once a hypothesised model was rejected, that finding should be definitive. Others have taken a more relaxed perspective, and affirm that the respecification process can be theoretically and statistically meaningful, just so long as the researcher is aware that the analyses become exploratory rather than confirmatory (Byrne, 2001; Joreskog, 1993). This line of reasoning attests the value of further inquiry into why a particular model may not be fitting the data. Any respecification that occurs should be made substantively on theoretical grounds rather than purely based on modification indices. Parsimony should also be at the forefront of the researcher's thinking (Chin, 1998). A widespread SEM practice is the removal of nonsignificant paths from the model, or at least constraining these paths to zero (Kelloway, 1998). While respecification can be problematic, difficulties associated with the process are minimised upon confirmation of the structural model across different samples (Byrne, 2001).

The next step in the analyses involved the cross-validation procedure of the structural model. This process addressed the question of whether the model that had been

specified with Sub-Sample 2 could be replicated over an alternative group from the same population. A similar process to that undertaken for the cross-validation of the measurement model was conducted. Again, this method was recommended by Byrne (2001). Once the original model was tested and amended using the primary sample, the final specified model was estimated for the validation sample. Constraints were specified so that factor loadings, factor path coefficients, error terms and covariances between the exogenous variables were sequentially restrained to be equal across the two groups (Byrne, 2001). Once more, if the χ^2 change was not statistically significant from a baseline model at every phase, then results implied the structural model was invariant across both samples.

Longitudinal Analysis

The final set of analyses for the employee survey centred upon determining whether the measurement and structural models were stable over time. The benefits of longitudinal methods over cross-sectional designs were established earlier in this chapter, and longitudinal research is said to be unequivocally imperative for SEM, if not relatively rare (Lieberson, 1985). Kline (2005) presented the case of two-wave longitudinal data, whereby the researcher repeats the structural relationship twice in the same model, with the second set being the indicators and latent variables at Time 2. This process was simulated for the current study using the longitudinal responses of Sample 1. The researcher posited unanalysed correlations linking indicators in Time 1 and Time 2, and also hypothesised that direct effects connected the Time 1 and Time 2 latent variables. With this specification, the model was explored in a similar manner to the previous structural models (Garson, 2004). The aim of this process was to see if the constructs and structural relations remained constant over time.

Summary

On the whole, a model which met the rigorous standards for the just described analyses would be highly defensible. Tests for the measurement model and structural model included cross-validation on separate samples, and longitudinal analyses encompassed a precise assessment of constancy from one time to another. Now we visit the analyses for the leader survey.

Study 2: The Leader Survey

As mentioned, the leader emotional intelligence surveys were designed as a supplement to explore the ability perspective of EI. One EI test was used at Time 1, while a different test was used at Time 2. As the tests varied, this aspect of the study was not longitudinal. Because the sample size was small, SEM could not be performed, nor could the samples be split to cross-validate responses. However, preliminary analyses could provide an excellent basis for future explorations in the area.

Firstly, for each EI test, spreadsheets were arranged so that individual leader EI responses corresponded to employee survey responses. For each leader, that meant calculating the mean response for all employees who they managed. Rather than using the original full measures, the means for the employee survey were determined using the indicators previously validated by CFA within Study 1. If ten subordinates completed the employee survey for one

leader, then the ten responses were averaged for each variable and leader. Some

leaders had only one employee survey response, while others had up to fifteen.

Several analyses were performed for the leader data. Firstly, descriptives were

calculated, as were reliabilities for each scale and subscale. Correlations were then

computed before analysing semi-partials that controlled for dispositional trust. Linear

regressions were then processed for each dependent variable.

Garson (2004) noted that having ordinal dependants in regressions is problematic

because their "discreteness violates the assumptions of normal distribution of error with

constant variance" (p.15). He recommended a method that was adopted in the current

study. That is, analyses tested for significant differences in the regression equations when

calculated separately for each value class of the ordinal dependent. In basic terms, if the

independents seemed to function uniformly across each of the ordinal levels of the

dependent, then use of an ordinal dependent was judged suitable.

General linear regression was implemented rather than stepwise regression due to

the small leader sample sizes. In accordance with Tabachnick and Fidell (2001), sample

requirements for stepwise regression are at least forty cases for each independent variable.

This is because stepwise methods affected by noise too easily and may not generalise with

a small number of cases (Garson, 2004). This would have limited the present analyses to

two possible independents for each regression, seeing as sample sizes were just over 100.

Alternatively, general testing of regression coefficients has less stringent requirements, as

previously discussed. However, because larger sample sizes are needed when the

dependent variables are skewed, transformations were also conducted to correct for nonnormality where possible.

In brief, this chapter has provided an overview of methodological considerations with reference to the current research.   Each of the subsequent four chapters provides the results from the analytical procedures outlined. The first three results chapters deal with the analysis of the employee survey, or Study 1: (1) Chapter IV focuses on the development of the measurement model, (2) Chapter V deals with the structural model, and (3) Chapter VI provides an overview of the longitudinal results. Finally, Chapter VII is presented as Study 2 whereby leader survey results are overviewed. As well as presenting results, each of these chapters has a brief introduction, a summary of method, and a discussion.

CHAPTER IV

STUDY 1: EMPLOYEE SURVEY MEASUREMENT MODEL

Introduction

As stated in Chapter II, the concept of emotional intelligence (EI) has been the focus

of a vast amount of popular press, and attention from academics continues to gather

momentum. Research investigating the importance of emotionally intelligent leadership to

organisations should be sure to operationalise constructs of interest in a reliable and valid

way. While Mayer et al. (2000a) have argued that their measurement methodology has

progressed estimably considering the relatively short existence of the construct (Mayer et al.,

2000a), research with both ability tests and EI surveys have at times highlighted the

difficulties of EI evaluation (e.g. Palmer et al., 2003c; Petrides & Furnham, 2000). Factors

that may have hindered the interpretation of some studies include substandard reliability or

validity (e.g. Orioli et al., 2000), psychometric irregularities across research using the same

instrument (e.g. Mayer et al., 2003; Palmer et al., 2003c) differing measurement methods (e.g.

ability tests versus surveys), and conflicting conceptualisations (e.g. Goleman, 1995; 1998;

Mayer & Salovey, 1997b). Indeed, the diversity of EI approaches can be challenging as it can

be difficult to provide a common language across the various measures. Yet the

distinctiveness of each perspective may have promoted the development of the total construct

and its significance to organisational factors such as transformational leadership, trust, change

cynicism and intention to turnover.

Dimensionality

The clear majority of organisation-oriented EI research has been conducted using the

survey-based instruments that were critically reviewed within Chapter II and Chapter III.

These instruments have variously focused on EI using one dimension (Schutte et al., 1998) up to twenty dimensions (Orioli, et al., 2000). Most of these instruments have been validated via exploratory factor analysis (e.g. Petrides & Furnham, 2002; Schutte et al., 1998), although some surveys have little information supporting factorial validity (e.g. HayGroup, 2002; Orioli, et al., 2000). It is only in recent times, with researchers such as Wong et al. (2004), Palmer et al. (2003b) and Rahim and Minors (2002, 2003), that EI survey methodology has been driven by more precise confirmatory methods. Of these, independent confirmatory testing has been conducted on the Rahim and Minors (2002) instrument, which was based on Goleman's (1995) five-factor conceptualisation of EI. Instead of uncovering discrete factors for self-awareness, empathy, motivation, social skills and self-regulation, Schlechter and Boshoff (2003, 2004) found support for three dimensions- self-motivation, self-mastery and emotional awareness. The structure of this scale will be evaluated further within this chapter.

The dimensionality of the other instruments included within the employee survey will also be investigated. Firstly, four aspects of transformational leadership are expected in studies utilising variations of the MLQ- inspirational leadership, idealised influence, intellectual stimulation and individualised consideration. As previously mentioned, comprehensive research into the structure of the Multi-Factorial Leadership Questionnaire (MLQ, Bass & Avolio, 1995) has indicated that the factors of transformational leadership may not behave consistently across diverse environments (Antonakis et al., 2003; Avolio et al., 1999; Vandenberghe et al., 2002; Yukl, 1999). Yukl (1999) argued that the transformational dimensions were not discriminate at all, while Antonakis et al. (2003) found support for five transformational dimensions by dividing the factor of idealised influence into two separate variables; (1) attributes, and (2) behaviours.

A number of dimensions have also been employed to frame trust and individual trustworthiness. Themes such as ability, integrity, care and concern appear regularly in the trust literature (e.g. Butler, 1991; Cummings & Bromiley, 1996; Mayer & Davis, 1995). Interpersonal trust scales and measures of a trusting personality generally focus on these areas (e.g. Butler, 1991; Johnson-George & Swap, 1982; Rempel & Holmes, 1986; Rosenberg, 1957; Rotter, 1967, 1971), but some organisational researchers have tailored their scales to include a mixture of cognitive, affective, behavioural and normative trust dimensions (Cummings & Bromiley, 1996; McAllistar, 1995). Fishbein and Ajzen (1975) instruct that cognition should be modelled separately from affective attitudes and subsequent behaviour, but investigations (Cummings & Bromiley, 1996; Ferres, 2002) cast doubt on whether some of these dimensions can be measured differentially. The majority of organisational researchers have subsequently structured measures that focus on an individual trust referent. Adopted measures have centred on trust in supervisors or immediate managers (Ferres, 2002; Tan & Tan, 2000), management as a group (Clark & Payne, 1997; Cook & Wall, 1980), senior management (Albrecht & Sevastos, 1999), peers or co-workers (Cook & Wall, 1980; Ferres, 2002), and the organisation as an entity (Dwivedi, 1980; Ferres, 2002; Tan & Tan, 2000). From these studies it appears that most measures based on a trust referent have been successful in discerning dimensions that remain true to their original categorisation. For example, it would be expected that a measure of trust in immediate managers and trust in the organisation itself would result in two clear factors.

Scales assessing cynicism towards change and intention to leave have also been designed with a specific structure. As mentioned in the previous chapter, although originally treated as a unidimensional scale by its authors, the one existing measure of change cynicism

(Cynicism about Organisational Change scale, CAOC; Wanous et al., 2000) actually assesses two factors relating to pessimism about change, and dispositional attribution of those responsible for change. In contrast, intention to leave is mostly operationalised as one factor (Tett & Meyer, 1993).

Aims and Hypotheses

The fundamental aim of this stage of the research was to explore the factorial or construct validity of a set of items designed to measure leader emotional intelligence and transformational leadership with employee trust, change cynicism and intention to leave. The invariance of the measures across two dissimilar organisations, 'low-trust' versus 'high-trust' employees, and two nationalities was also investigated. The measurement model analysis was designed to culminate in the selection of a minimal amount of valid items to measure each construct. This is consistent with the ideal of parsimonious and contruct-valid measurement espoused by some SEM theorists and practitioners (Byrne, 2001).

One hypothesis summarises the projected findings:

H4.1. Using exploratory and confirmatory factor analytic methods, the emergent employee survey variables will be valid, discriminate, reliable and invariant across different samples.

Method

Sample

A total of 806 responses to an employee survey were used to develop the measurement model. Of these, 467 of these subjects were employees from an Australian state-wide public

sector organisation (Sample 1: Wave 1, Organisation A), while 339 were employees in a bi-national (Australian n = 142/North American n = 196) private sector company (Sample 2, Organisation B). Differences between the Australian and North American subjects were investigated.

Sample 1 was designated as the validation sample, while Sample 2 was selected as the cross-validation or hold-out sample. Listwise deletion of missing data reduced the number of participants in Sample 1 from 467 to 448, while there was no missing data for Sample 2. Incomplete responses were restricted by the internet collection method for this second group. That is, incomplete responses could not be submitted via the web-based program. Response rates were 47% for Sample 1 and 49% for Sample 2. The organisations were selected, on the basis of convenience and because of their disparity to each other. A sufficient number of employees were employed at each organisation (Ns = 1000 and 700 approximately), which made it likely that large enough samples would be obtained to adequately conduct SEM methods.

Full demographic statistics were presented previously in Chapter III (Table 3.1) but are briefly summarised here for purposes of continuity. Sample 1 was female dominated, while the majority of Sample 2 subjects were male. Sample 2 participants were also younger, better educated, and had been with the organisation for a much shorter mean tenure compared with Sample 1 subjects. As formerly discussed, the distribution of position level, gender, age and tenure in both samples was representative of the demographics of the authorities where the study was conducted.

Measures

The employee survey included items measuring employee perceptions of leader EI (Rahim & Minors, 2002) and employee perceptions of transformational leadership (Englebrecht, 2001, personal communication). The leader EI scale purported to measure five dimensions of empathy, self-awareness, motivation, self-regulation and social skills, while the transformational leadership scale targeted the four aspects of inspirational leadership, idealised influence, intellectual stimulation and individualised consideration. Items also assessed self-reported dimensions of organisation trust and manager trust (Ferres, 2002), dispositional trust as a control variable (Costa & McCrae, 1985), change cynicism (pessimism and dispositional attribution) (Wanous et al, 2000) and intention to leave (Cohen, 1993). Scales were drawn from the available literature, with the exception of the trust scales which were previously developed and validated by the researcher (Ferres, 2002).

Analyses

The preceding methodology chapter justified the processes that are involved in analysing the measurement model for the employee survey. In short, all data sets were screened for normality, missing data and outliers. These procedures found that the data was uniformly non-normal for all samples. All positively worded scales were slightly positively skewed, and the change cynicism and intention to leave scales were negatively skewed. After listwise deletion, there were no outliers identified. Rather than transforming the scales to obtain normality, multivariate non-normality was assessed and accounted for within latter CFA analyses where appropriate.

Before CFA, Sample 1 from the primary organisation was split into two groups, Sub-Sample 1 (n = 218) and Sub-Sample 2 (n = 230). This division was preformed via the random selection procedure available in SPSS. Descriptive and reliability information was also assessed. Using Sub-Sample 1, exploratory factor analysis (EFA) was conducted to assess the factor composition of the survey using maximum likelihood extraction with an oblique rotation. As recommended by Anderson and Gerbing (1982), all scales were included in the one factor analysis rather than analysing individual scales separately. After that, using Sub-Sample 2, items within each emergent factor were submitted to congeneric confirmatory factor analyses (CFA) to determine the most psychometrically robust and face-valid items for each construct. Where there were less than twelve observed variables and a sample size greater than 200 (Joreskog, & Sorbom, 1996), analyses were performed using the Asymmetric Distribution Free (ADF) procedure in AMOS or the Weighted Least Squares method in LISREL to account for multivariate non-normality (Holmes-Smith et al., 2004). If CFA sample sizes were inadequate for those analyses involving more than twelve observed variables, non-normality was counteracted via the bootstrapping procedure using the Bollen-Stine p in AMOS, or by generating the Satorra-Bentler χ^2 statistic in LISREL.

Respecification procedures were implemented to identify items which most clearly portrayed the concepts under investigation. Model fit was evaluated via a number of fit indices as discussed in the previous chapter. At least three items for each latent variable were subsequently entered into a combined CFA to determine the true number of constructs underlying the item data set. The convergent and discriminant validity of the measurement model were then determined. Competing measurement models were compared before the selection of a baseline model including all the combined contructs.

The baseline measurement model was then cross-validated with Sample 2 (n = 339) using SEM multi-sampling techniques. This phase involved the imposition of a variety of equality restraints on two independent data sets. Invariance testing between the Australian and North American subjects was also conducted. Descriptive statistics, reliability figures and correlations were then reported for the final constructs. Finally, partial correlations, accounting for the effect of dispositional trust, were computed. Results for these analyses are now outlined.

Results

A priori Descriptives

Table 4.l. shows the means, standard deviations and alpha reliabilities (*α*) across the pertinent samples for each construct and its sub-dimensions, where applicable. Higher mean scores indicate higher levels of all variables.

This table shows a positive pattern for all samples, in that all means for leader emotional intelligence, transformational leadership, and the trust variables were above the midpoint of their respective scales, and change cynicism and turnover intention were below their corresponding scale midpoint. No significant differences were found between the two sub-samples from Organisation A. However, compared to Sub-Sample 2, Sample 2 from Organisation B had significantly higher scores for two emotional intelligence dimensions, total transformational leadership, leaders' idealised influence and individual consideration and trust in the organisation. Sample 2 also had significantly lower cynicism towards change. In all, Sample 2 reported a significantly more positive leadership environment.

Table 4.1.

Descriptive Statistics for A priori Dimensions

	Mean a	SD	α	Mean ab	SD	α	Mean ab	SD	α	t Value
	Organisation A Sub-Sample 1 n = 218			Organisation A Sub-Sample 2 n = 230			Organisation B Sample 2 n = 339			
Tot. Leader EI	5.41	1.19	.98	5.49	1.23	.98	5.62	1.36	.97	-1.64
Empathy	5.17	1.42	.96	5.22	1.51	.95	5.53	1.43	.95	-3.71**
Self-Awareness	5.25	1.28	.94	5.30	1.31	.95	5.52	1.33	.93	-2.52**
Motivation	5.49	1.23	.93	5.58	1.20	.94	5.65	1.21	.94	-.78
Self-Regulation	5.64	1.20	.92	5.75	1.20	.92	5.72	1.29	.93	.32
Social Skills	5.50	1.26	.93	5.58	1.30	.92	5.72	1.29	.93	-1.72
Tot. Transformational Leadership	3.86	1.17	.96	3.97	1.15	.95	4.25	1.14	.94	-3.71**
Idealised Influence	3.82	1.18	.89	3.87	1.17	.90	4.36	1.14	.88	-6.43**
Inspirational Leadership	3.91	1.34	.89	4.05	1.24	.88	4.15	1.25	.87	-1.28
Intellectual Stimulation	3.78	1.29	.88	3.94	1.24	.88	4.00	1.26	.89	-.58
Individualised Considrtn	3.93	1.33	.86	4.02	1.32	.86	4.20	1.29	.87	-2.04*
Trust in Organisation	4.57	1.36	.95	4.46	1.39	.95	4.85	1.29	.94	-4.25**
Trust in Manager	5.12	1.19	.91	5.10	1.25	.94	5.16	1.18	.92	-.80
Dispositional Trust	5.49	1.10	.86	5.58	.92	.80	5.62	1.02	.79	-.66
Change Cynicism (Pessimism)	3.22	1.40	.88	3.21	1.49	.91	1.21	1.42	.87	10.26**
Intention to Leave	3.14	1.91	.87	3.10	1.92	.89	3.00	1.14	.88	-1.71

[a]Scale range 1 – 7 for each variable except transformational leadership scale range of 1 – 6; [b]t-values for differences between Sub-Sample 1 and Sub-Sample 2 were all non-significant (t = .50 to -1.7); [c]Significant differences between Sub-Sample 2 and Sample 2 at **$p<.01$, *$p<.05$

The alpha values contained in Table 4.1. show uniformly high reliability for all scales; internal consistencies ranged from α = .79 to α = .96. These values surpassed the recommended standard of α = .70 espoused within Nunnally's (1978) seminal work. In all cases, reliabilities for the emotional intelligence dimensions, total transformational leadership and organisational/manager trust variables exceeded α = .90, suggesting some redundancy in items. Factor analytic methods assisted in further exploring items and their reliability.

Exploratory Factor Analysis

Using Sub-Sample 1 (n =218), exploratory factor analysis (EFA) by means of maximum likelihood extraction and oblimin rotation was conducted on all items of the employee survey to gauge dimensionality. Although change cynicism (dispositional

attribution) and dispositional trust were not going to be included in the full CFA measurement model or hypotheses, these items were included in the EFA to determine if they were separate to other trust and change cynicism factors. In this first analysis, 14 factors had eigenvalues over one and explained a total of 75.25% of the variance in employee survey scores. While the factors were rotated to oblique structure, several correlations did not load exclusively onto one factor. Hence an alternate solution was examined using items with loadings of .35 or higher on a solitary factor (Kline, 1994).

The results of the second solution with the remaining 65 items are set out in Table 4.2. The matrix displayed shows a simple structure (i.e. with every item loading on just one factor) (Francis, 1999). Each of the 11 factors was well-defined by at least 3 items. In all, the factors explained a total of 74.45% of the variance. Bartlett's test of Sphericity was significant, $\chi^2(4950) = 24658$, $p<.01$ and the Kaiser-Meyer-Olkin Measure of Sampling Adequacy was .92, which was well above levels of acceptability. These last two measures indicated that the data was suitable for factor analysis. The results for this analysis, including inter-item correlations, are shown in Appendix B (Tables AB1.1 to AB1.4).

The 11-factor solution reproduced the unidimensional a priori trust in organisation (Factor 2), trust in manager (Factor 3), dispositional trust (Factor 5), change cynicism (pessimism) (Factor 10), change cynicism (dispositional attribution) (Factor 7) and intention to leave (Factor 6) constructs. However, with the exception of EI motivation (Factor 8) and EI (Self-Regulation), the transformational leadership and emotional intelligence items did not load onto their supposed dimensions. In all, the emotional intelligence items loaded onto three

EI factors instead of five anticipated factors, and the transformational leadership (TL) items

loaded onto two TL factors in place of the four proposed dimensions.

In addition to EI-Motivation (Factor 8) and EI-Self-Regulation (Factor 9), Factor 1

was the third emergent EI dimension. Factor 1 items explained a large amount of variance in

the data set (31.4%) and were made up of 6 'empathy' items, 6 'self-awareness' items and one

'social skills' item. The social skills item had the lowest correlation with the factor ($r = .35$).

All other items related to the awareness of emotions in both oneself and others, and a

perception of how emotions impact on behaviour. The items suggested that this factor

measures an underlying EI-Perception variable.

The two transformational leadership factors were Factor 4 and Factor 11. Factor 4 was

made up of items from the a priori 'inspirational leadership' and 'idealised influence'

dimensions. All items related to how a leader talks about, expresses, specifies, or articulates

values, goals, and the future. As such, this factor was interpreted as a Transformational

Leadership-Inspiring Influence (TLII). Factor 11 consisted of items from the 'individual

consideration' and 'idealised influence' dimensions of transformational leadership. Items

related to the concern of individual needs, developing strengths and acting in ways that build

respect and renounce self-interest. All items except one conveyed a sense of how the leader

Table 4.2.

Pattern Matrix of Employee Survey (n = 218)

A Priori Measure (Dimension): Item	Factor*										
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
EI (Empathy): Understands the feelings transmitted through non-verbal messages.	.80										
EI (Self-Awareness): Is well aware of his or her impulses.	.78										
EI (Self-Awareness): Is well aware of how his or her gut feelings influence decisions.	.74										
EI (Empathy): Understands the emotional cues from others.	.74										
EI (Self-Awareness): Is well aware of the non-verbal messages he or she sends to others.	.74										
EI (Empathy): Understands why people feel the way they do.	.62										
EI (Empathy): Understands the feelings transmitted through verbal messages.	.61										
EI (Empathy): Understands the links between employees' emotions and what they do.	.60										
EI (Self-Awareness): Is well aware of which emotions he or she is experiencing and why.	.56										
EI (Self-Awareness): Is well aware of his or her limitations.	.53										
EI (Empathy): Provides useful and timely feedback.	.42										
EI (Empathy): Helps others feel better when they are down.	.35										
EI (Social Skills): Does not allow the negative feelings of others to inhibit collaboration.	.35										
Trust (Organisational): It is generally accepted that this organisation takes care of employee interests		.74									
Trust (Organisational): I act on the basis that this organisation follows plans through with action		.68									
Trust (Organisational): Employees commonly believe that they are treated fairly at this organisation.		.68									
Trust (Organisational): I think that this organisation offers a supportive environment.		.65									
Trust (Organisational): I believe that this organisation recognises and rewards employees' skills and abilities.		.68									
Trust (Organisational): I express my opinion honestly at this organisation with the knowledge that my opinion is valued.		.52									
Trust (Organisational): I think that processes within this organisation are fair.		.50									
Trust (Organisational): I have positive feelings about the future direction of this organisation.		.41									
Trust (Organisational): I perform knowing that this organisation will recognise my work.		.38									
Trust (Manager): Most people at this organisation feel comfortable with their immediate managers/supervisors.		.35									
Trust (Manager): I feel that my manager listens to what I have to say.			.83								
Trust (Manager): I feel my manager is available when needed.			.81								
Trust (Manager): I believe that my manager follows through promises with action.			.80								
Trust (Manager): I proceed on the basis that my manager will act in good faith.			.80								
Trust (Manager): I act knowing that my manager will keep his/her word.			.76								

Table 4.2. continued…

A Priori Measure (Dimension): Item	Factor*										
	1	2	3	4	5	6	7	8	9	10	11
Trust (Manager): I act on the basis that my manager displays integrity in his/her actions.			.74								
Trust (Manager): I think that my manager appreciates additional efforts I make.			.58								
Trust (Manager): I feel that my manager trusts his/her employees to work without excessive supervision.			.52								
Trust (Manager): I believe that my manager keeps personal discussions confidential.			.48								
TL (Inspirational Leadership): Talks enthusiastically about what needs to be accomplished.				.73							
TL (Inspirational Leadership): Talks optimistically about the future.				.72							
TL (Inspirational Leadership): Articulates a compelling vision of the future.				.70							
TL (Idealised Influence): Specifies the importance of having a strong sense of purpose				.69							
TL (Idealised Influence): Talks about his/her most important values and beliefs				.56							
TL (Inspir. Leadership) Expresses confidence that goals will be achieved.				.37							
Trust (Dispositional): I tend to assume the best about people.					.85						
Trust (Dispositional): My first reaction is to trust people.					.82						
Trust (Dispositional): I believe that most people are generally well-intentioned.					.70						
Trust (Dispositional): I think that most people I deal with are honest and trustworthy.					.66						
Trust (Dispositional): I have a good deal of faith in human nature.					.66						
Intent to Leave: I think a lot about leaving the organisation.						.89					
Intent to Leave: When I can I will leave this organisation.						.86					
Intent to Leave: I am actively searching for opportunities to leave the organisation.						.80					
Ch Cyn (Disposition): The people responsible for making changes around here do not have the skills needed to do their jobs.							.90				
Ch Cyn (Disposition): The people responsible for making improvements do not know enough about what they are doing.							.86				
Ch Cyn (Disposition): The people responsible for solving problems around here do not try hard enough to solve them.							.69				
Ch Cyn (Disposition): The people responsible for making things better around here do not care enough about their jobs.							.62				
EI (Motivation): Has strong drive to attain organisational goals.								.81			
EI (Motivation): Has high motivation to set and attain challenging goals.								.73			
EI (Motivation): Stays focused on goals despite setbacks.								.64			
EI (Motivation): Does not hesitate to make sacrifices to achieve important organisational goals.								.48			
EI (Motivation): Accepts rapid change to attain the goals of his or her group/organisation.								.48			
EI (Self-Regulation): Keeps his or her anger in check.									.79		
EI (Self-Regulation): Maintains composure irrespective of his or her emotions.									.72		
EI (Self-Regulation): Remains calm in potentially volatile situations.									.65		
EI (Self-Regulation): Keeps his or her distressing emotions in check.									.62		

Table 4.2. continued…

A Priori Measure (Dimension): Item	Factor*										
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
EI (Self-Regulation): Keep his or her disruptive impulses in check.									.50		
EI (Self-Regulation): Manages his or her stress well.									.37		
Ch Cyn (Pessimism): Suggestions on how to solve problems will not produce much real change.										.74	
Ch Cyn (Pessimism): Plans for future improvement will not amount to much.										.72	
Ch Cyn (Pessimism): Attempts to make things better around here will not produce good results.										.65	
Ch Cyn (Pessimism): Most of the programs that are supposed to solve problems around here will lead to confusion.										.41	
TL (Individualised Consideration): Considers me as having different needs, abilities and aspirations from others.											.57
TL (Individualised Consideration): Treats you as an individual rather than just a member of the group											.53
TL (Individualised Consideration): Helps me to develop my strengths											.47
TL (Idealised Influence): Acts in ways that builds my respect											.41
TL (Idealised Influence): Goes beyond his/her self-interest for the good of the group.											.39
Eigenvalue	26.5	8.6	3.3	3.0	2.7	2.1	1.7	1.5	1.3	1.1	1.1
Variance Explained %	37.4	12.1	4.6	4.2	3.8	2.9	2.5	2.1	1.8	1.6	1.5
Culmulative Variance %	37.4	49.5	54.1	58.3	62.1	65.0	67.4	69.5	71.4	73.0	74.5

*Negative loadings were originally found for each item loading on Factors 2, 4, 8, 9 and 11; 'EI'= Emotional Intelligence; 'TL' = Transformational Leadership; 'Ch Cyn' = Change Cynicism

Table 4.3.

Factor Correlation Matrix (n = 218)

Factor	1	2	3	4	5	6	7	8	9	10	11
1. EI Perception	-										
2. Organisational Trust	.16	-									
3. Manager Trust	.31**	.53**	-								
4. TL Inspiring Influence	.37**	.21*	.26**	-							
5. Dispositional Trust	.14	.30**	.20*	.12	-						
6. Intent to Leave	-.13	-.45**	-.28**	-.16	-.20*	-					
7. Change Cynicism (DA)	-.18*	-.19*	-.14	-.06	-.20*	.17	-				
8. EI Motivation	.52**	.17	.28**	.42**	.07	-.12	.27**	-			
9. EI Self Regulation	.52**	.12	.25**	.11	.07	-.01	.16	.58**	-		
10. Change Cynicism (Pessimism)	.08	-.38**	-.22*	-.16	-.22*	.32**	.43**	-.05	-.05	-	
11. TL Concern/Behaviour	.32**	.14	.30**	.28**	.06	-.13	.14	.25**	.22*	.01	-

Note: Correlations significant at * *p*<.05, **p*<0.01

actually behaves rather than thinks or conveys information. This factor was translated as a

Transformational Leadership-Concern and Behaviour (TLIIB) construct.

Table 4.3. displays the correlations between the factors. Many variables were

moderately correlated, although there were some very low, non significant relationships.

Factor correlations ranged from $r = .01$, $p > .05$ between Transformational Inspiring-

Influence and Change Cynicism (Pessimism), to $r = .58$, $p < .01$ between EI Motivation and EI

Self Regulation. Dispositional trust had small, positive correlations with most variables except

for the intent to leave and change cynicism factors.

Confirmatory Factor Analysis

While a feasible factor solution was ascertained via EFA, the subsequent step in the

study was conducting confirmatory factor analysis (CFA) on an alternative sample (Sample 2,

Organisation A). First, congeneric CFAs were carried out on each of the nine factors that were

applicable to proposed structural relationships. That is, all items with EFA loadings above .35

on each factor were entered into individual CFAs analysing (1) EI-Perception, (2) EI-

Motivation, (3)EI-Self Regulation, (4)TL-Inspiring Influence, (5)TL-Concern/Behaviour, (6)

Trust in Organisation, (7) Trust in Manager, (8) Change Cynicism (Pessimism) and (9)

Intention to Leave. The aim of the congeneric analysis was to find a parsimonious set of face-

valid and reliable items for each factor before combining them into a full measurement model.

Respecification and final CFA item retention was guided by underlying theory, rather

than being determined purely on the grounds of statistical analyses or the highest EFA

loadings. For the emotional intelligence, transformational leadership, and change cynicism models, similarly worded items were discarded one by one until a three factor solution was reached, with two error variances set equal to obtain a degree of freedom (Byrne, 2001). This method avoided suboptimilisation and aimed to achieve defensible content-valid items. Because the intention to leave model started with three items, no respecification occurred with this model excepting the addition of two equal error variances. For the trust in organisation and trust in manager models, three items relating to 'behavioural intent' were retained, as these were most consistent with accepted definitions of trust being the 'willingness to act', as described in Chapters II and III.

The comparison of chi-square (χ^2), Normed Chi Square (NC) and Root Mean Square Error of Approximation (RMSEA) values for the starting models and the final three-item models is contained in Table 4.4. for each latent variable. A close-fitting model should have an NC of 3 or below, and an RMSEA value between .000 and .050. Reasonably fitting models may have an NC between 3 and 5 and an RMSEA between .05 and .08 (Mueller, 1995). Excluding the intention to leave congeneric, Table 4.4. illustrates that each respecified 3-item model provided a closer fit to the data when compared to the original models that included more items (RMSEAs <.05). The intention to leave model provided an acceptable fit to the data (RMSEA = .05).

Three items for each variable were then entered into a combined 9-Factor measurement model. Figure 4.1. displays the model diagram with selected items hypothesised to load onto their allotted factor. The constructs were freely allowed to co-vary.

Table 4.4.

Summary of Congeneric Analyses (Sub-Sample 2, n = 230)

Latent Variable (Initial No. Items)	df	χ2 (NC)	RMSEA	df	χ2*=NC	RMSEA
		Starting Model			**3-Item Model**	
EI Perception (11)	44	204.61 (4.65)	.126	1	.795	.000
EI Motivation (5)	5	32.75 (6.55)	.159	1	2.98	.048
EI Self Regulation (6)	9	42.98 (4.77)	.128	1	.010	.000
TL Inspiring Influence (6)	9	23.39 (3.89)	.080	1	.039	.000
TL Concern/Behaviour (5)	9	34.15 (6.83)	.156	1	.012	.000
Trust in Organisation (9)	27	37.93 (1.14)	.042	1	1.04	.013
Trust in Manager (9)	27	49.97 (1.85)	.057	1	1.85	.000
Change Cynicism/Pessimism (4)	2	6.2 (3.1)	.096	1	.040	.000
Intention to Leave (3)	1	3.2 (3.2)	.050	1	3.20*	.050

Note: χ2 = chi-square, NC= Normed Chi Square, RMSEA = Root Mean Square Error of Approximation, *Change in Chi-Square (Δ χ2) significant at *p*<.001 level, Δ χ2 n/a for intention to leave model

Table 4.5. shows resultant fit statistics for the nine-factor model compared to three competing models. The first rival model was an independent or 'null' model, which represented the instance where all indicators were uncorrelated (Model 2). The null-model is often used to see if a hypothesised model (in this case, Figure 4.1.) "fits significantly better than no model at all"(Hayduk, 1987, p.172). In a sense, the null model provided a baseline model against which others could be evaluated. The second competing model had 2-Factors; a 21 item factor that included all EI, transformational leadership and trust-related items, and a solitary 6-item factor incorporating the change cynicism and intent to leave indicators. This tested to see if the data was better represented by one 'positive' organisational factor, and one 'negative' organisational factor (Model 3). The third representation was a 5-Factor model which subsumed the nine items for perception, motivation, and self regulation and put them into a single 'EI' construct. It also took the six transformational leadership inspiring influence items and placed them into one 'Leadership Style' factor, and created a single 'Trust' factor from the six organisational trust and manager trust items. These were placed with the existing change cynicism and intent to leave constructs (Model 4).
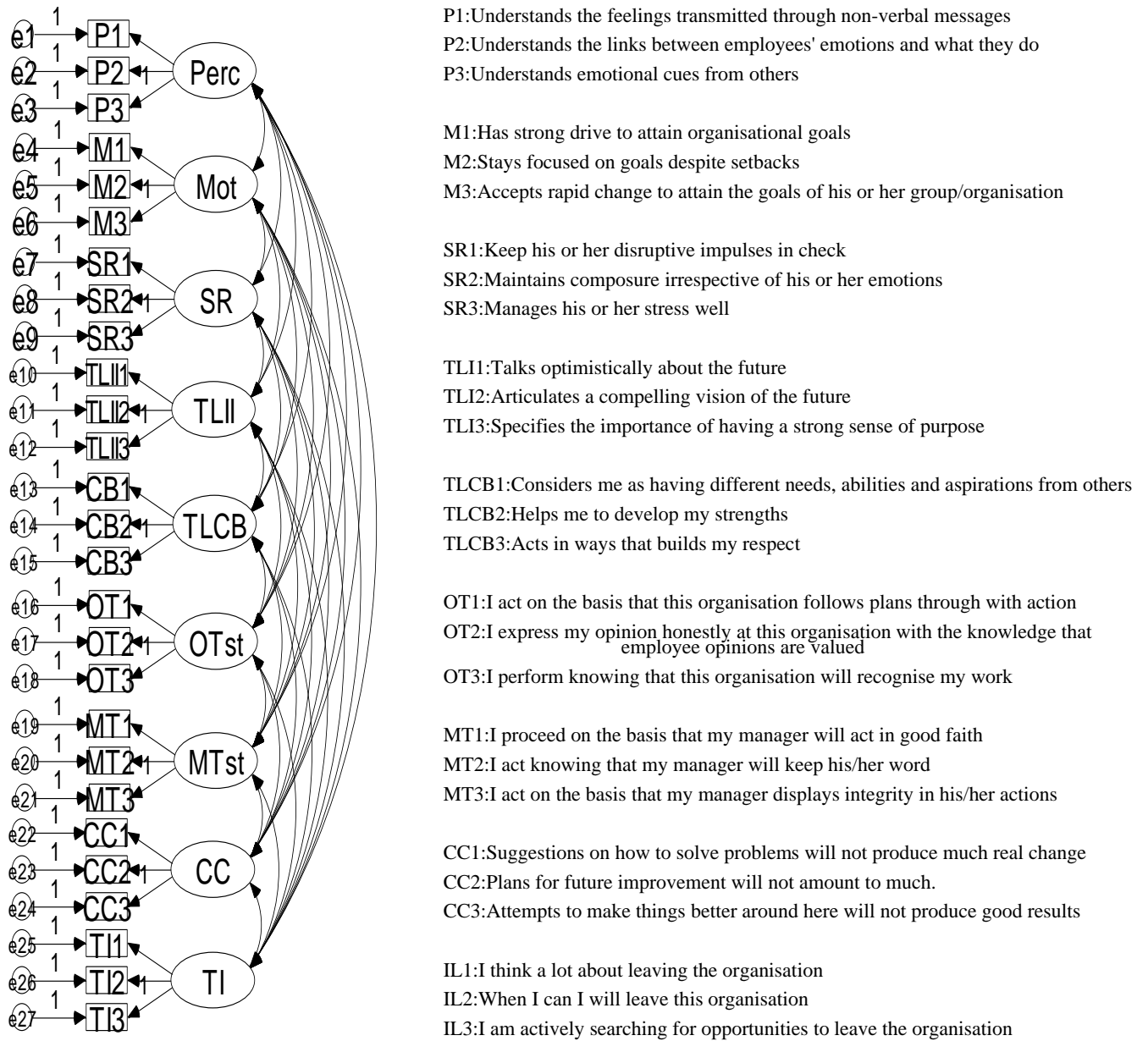
P1:Understands the feelings transmitted through non-verbal messages
P2:Understands the links between employees' emotions and what they do
P3:Understands emotional cues from others

M1:Has strong drive to attain organisational goals
M2:Stays focused on goals despite setbacks
M3:Accepts rapid change to attain the goals of his or her group/organisation

SR1:Keep his or her disruptive impulses in check
SR2:Maintains composure irrespective of his or her emotions
SR3:Manages his or her stress well

TLI1:Talks optimistically about the future
TLI2:Articulates a compelling vision of the future
TLI3:Specifies the importance of having a strong sense of purpose

TLCB1:Considers me as having different needs, abilities and aspirations from others
TLCB2:Helps me to develop my strengths
TLCB3:Acts in ways that builds my respect

OT1:I act on the basis that this organisation follows plans through with action
OT2:I express my opinion honestly at this organisation with the knowledge that employee opinions are valued
OT3:I perform knowing that this organisation will recognise my work

MT1:I proceed on the basis that my manager will act in good faith
MT2:I act knowing that my manager will keep his/her word
MT3:I act on the basis that my manager displays integrity in his/her actions

CC1:Suggestions on how to solve problems will not produce much real change
CC2:Plans for future improvement will not amount to much.
CC3:Attempts to make things better around here will not produce good results

IL1:I think a lot about leaving the organisation
IL2:When I can I will leave this organisation
IL3:I am actively searching for opportunities to leave the organisation

Figure 4.1. 9-Factor Measurement Model with 27 Items
*Perc= EI Perception, Mot= EI Motivation, SR= EI Self Regulation, TLI= Trans. Leadership Inspiring Influence, TLCB=
Trans. Leadership Concern/Behaviour, OTst= Trust in Organisation, MTst= Trust in Manager, CC=Change Cynicism,
IL= Intent to Leave

Overall, Table 4.5. demonstrates support for the 9-factor measurement model, showing that it was the only model to provide a reasonable fit to the data. The NC statistic was below the criterion of 3 and both the CFI and TLI values were 0.95 and above, indicating a close fit (Byrne, 2001). The 9-factor model had the lowest CAIC value, with smaller values representing better fit (Mueller, 1996). In addition, an RMSEA value of 0.56 indicated a reasonable fit, being just above the close-fit criterion of 0.50, yet beneath the value of 0.08 indicating mediocre fit. CFA output showing the item covariance matrix, means and standard deviations, standardised parameter estimates, factor correlations and error covariances for this analysis is contained in Appendix B2.

Table 4.5.

Goodness of Fit Statistics for Equivalent 9-Factor (27 item) Measurement Models (n = 230)

	Comparative Model	**χ^2 (NC)**	**df**	**RMSEA (CI)**	**CFI**	**TLI**	**CAIC**	**$\Delta \chi^2$**	**Δ df**
Model 1 Hypothesised 9-Factor Model	-	498.528 (1.73)	288	.056 (.048-.065)	.96	.95	1077.96	-	-
Model 2 Null-Model	*Model 1*	5734.50 (16.33)	351	.259 (.253-.265)	.00	.00	5908.32	5235.97**	63
Model 3 2-Factor Model *Factor 1 = EI/TL/Trust, 21 items Factor 2 = CC and IL, 6 items*	*Model 1*	2233.53 (6.91)	323	.161 (.154-.167)	.61	.65	2587.62	1735.00**	35
Model 4 5-Factor Model *Factor 1 = EI, 9 items; Factor 2 = TL, 6 items; Factor 3 = Trust, 6 Items; Factor 4 = CC, 3 items, and Factor 5 = IL, 3 Items*	*Model 1*	1123.68 (3.57)	314	.106 (.10-.11)	.85	.83	1535.72	625.15**	26

*NC= Normed Chi Square, RMSEA = Root Mean Square Error of Approximation, CI = Confidence Interval, CFI = Compartitive Fit Index, TLI = Tucker-Lewis Index, $\Delta \chi^2$ = Change in Chi-Square

Convergent and Divergent Validity

Convergent validity examines whether a construct correlates as expected with theoretically relevant items or variables. Results showed that each item in the nine-factor model showed good convergence with its respective factor, with highly significant parameter estimates ranging from 0.73 to 0.99.

While convergent validity of the items was clear, the next step looked at discriminant validity. In this respect, a degree of mutli-collinearity was found between the factors. Factor correlations were found to be highly significant, ranging from $r = -.19$, $p < .05$ between EI-Motivation and Change Cynicism (Pessimism), and $r = .89$, $p < .01$ between EI-Motivation and EI-Self-Regulation. While high correlations are expected between theoretically-related variables (such as subdimensions of the one scale) correlations above 0.80 may be problematic in SEM, as the two constructs may be measuring the same thing (Yoder, 1998). High multi-collinearity can cause SEM convergence failure, lead to highly inflated standardised regression coefficients, and cause theoretically-relevant variables to lose statistical significance (Yoder, 1998).

Discriminate validity was further explored in two ways. Firstly, using AMOS, each pair of constructs was assessed by comparing, (1) Chi-square values when covariances were fixed at one to, (2) Chi-square values when covariances between the factors were freely estimated. The results of this analysis are shown in Table 4.6. Second, using LISREL, paired one-factor congeneric models were tested by correlating the latent variables in a two-factor model with 3 items on each latent variable. These two-factor models were then compared to a

one-factor model which subsumed the same six items. This aimed to determine if the 'paired' constructs were better seen as unidimensional constructs, and whether the items had a stronger link to their allocated construct than they did to other related variables. Results from this latter analysis are displayed in Appendix B (Table AB2.5) rather than in the main body of this thesis, as the table spans numerous pages in its summary of over 70 individual CFAs.

The tests for discriminant validity led to mixed results. For each comparison shown in Table 4.6., the chi-square difference values, with one degree of freedom, were significantly different; setting the factor covariance to 1 for each paired analyses resulted in an inferior model fit in all cases. These results lend support to the discriminant validity of the proposed 9-Factor model shown as Figure 4.1.

The more rigorous test results displayed in Appendix B (Table AB2.5) were more ambiguous. In terms of chi-square values, each two-factor model was significantly different, or better-fitting, than the one-factor models. Nevertheless, an analysis of factor loading values indicated that the six EI-Self Regulation and EI-Motivation items measured a unidimensional factor, with all loadings above 0.70. This finding is bolded in Table AB2.5 (Appendix B). There were other 1-Factor models where the majority of items had loadings above or near 0.70, but factor correlations were not as high as the correlation between the EI-Motivation and EI-Self Regulation variables ($r = 0.89$, Appendix B Table AB2.5). Given this very strong association, and the fact that values above 0.70 suggest high factor loadings, results suggested that the EI-Motivation and EI-Self Regulation scales were linearly dependant and this could create major problems when entered into latter SEM analysis.

Table 4.6.

Discriminate Analysis of Paired Congenerics with Covariances Freed and Set to 1 (n = 230)

Latent Variable/s	χ2 (NC) Covariance freed: df(8)	χ2 (NC) Covariance set to 1: df(9)	Δ χ2** Δ df = 1
EI Perception with:			
EI Motivation	12.20 (1.52)	157.79 (17.53)	145.59
EI Self Regulation	26.81 (3.35)	451.88 (50.21)	410.07
Transform. Leadership Inspiring Influence	7.48 (.94)	234.02 (26.00)	226.54
Transform. Leadership Concern/Behaviour	19.53 (2.44)	136.13 (15.12)	116.60
Organisational Trust	9.98 (1.25)	266.94 (29.56)	256.96
Trust in Manager	31.81 (3.98)	482.79 (53.64)	450.98
Change Cynicism	18.04 (2.26)	429.01 (47.67)	410.97
Intention to Leave	8.47 (1.06)	360.91 (40.10)	352.44
EI Motivation with:			
EI Self Regulation	17.54 (2.19)	87.03 (9.67)	57.49
Transform. Leadership Inspiring Influence	9.74 (1.22)	128.98 (14.33)	119.24
Transform. Leadership Concern/Behaviour	28.09 (3.51)	139.99 (15.55)	111.90
Organisational Trust	10.05 (1.26)	262.63 (29.18)	252.58
Trust in Manager	24.68 (3.08)	260.72 (28.97)	236.04
Change Cynicism	16.86 (2.11)	443.78 (49.31)	426.92
Intention to Leave	13.31 (1.66)	187.66 (20.85)	114.35
EI Self Regulation with:			
Transform. Leadership Inspiring Influence	13.01 (1.63)	287.01 (31.89)	274.00
Transform. Leadership Concern/Behaviour	38.69 (4.84)	266.24 (29.58)	227.55
Organisational Trust	15.35 (1.91)	303.30 (33.7)	287.95
Trust in Manager	41.80 (5.22)	456.48 (50.72)	414.68
Change Cynicism	8.16 (1.02)	479.94 (53.33)	471.78
Intention to Leave	4.47 (.56)	468.22 (52.02)	463.75
Trans Leadership Inspiring Influence with:			
Transform. Leadership Concern/Behaviour	13.31 (1.66)	187.66 (20.85)	174.35
Organisational Trust	8.37 (1.04)	276.68 (30.74)	268.31
Trust in Manager	10.09 (1.26)	245.63 (27.29)	235.54
Change Cynicism	8.16 (1.02)	479.94 (53.33)	471.78
Intention to Leave	4.47 (.56)	468.22 (52.02)	463.75
Transform. Leadership Concern/Bhvr with:			
Trust in Manager	28.09 (3.51)	139.99 (15.55)	111.90
Change Cynicism	10.83 (1.35)	319.08 (35.45)	308.25
Intention to Leave	4.31 (.54)	293.38 (32.60)	289.07
Organisational Trust with:			
Trust in Manager	22.41 (2.80)	253.51 (28.17)	231.10
Change Cynicism	12.57 (1.57)	229.45 (25.49)	216.88
Intention to Leave	9.04 (1.13)	270.09 (30.01)	261.05
Trust in Manager with:			
Change Cynicism	16.43 (2.05)	362.04 (40.23)	345.61
Intention to Leave	9.04 (1.13)	270.09 (30.01)	261.05
Change Cynicism with Intention to Leave	30.05 (3.76)	353.71 (39.30)	323.66

Note: Δ χ2 = Change in Chi-Square, ** Δχ² significant at *p*<.001

As such, the six EI-Motivation and EI-Self Regulation items were coupled to form a

composite construct within an 8-Factor model. Because all six items referred to managing or

directing emotions to fulfill tasks, regulate stress or focus on goal accomplishment, this factor was interpreted as EI-Management. Firstly, all 27 items were entered into an 8-Factor CFA and compared with the original 9-Factor Model. The EI-Management factor was then respecified to test competing models of fit. From the perspective of parsimony, it made sense to retain two items from the original EI-Motivation and EI-Self Regulation factors so that EI-Management was measured by 4 items rather than 6 items. First, Item M1 from the original EI-Motivation scale was removed and fit indices compared. The subsequent step involved the removal of Item SR1 from the model, formerly from the EI-Self Regulation factor. These two items were selected as the wording of both had substantial overlap with similar questions on the EI-Management scale. In addition, they each had the weakest relationship with their previous constructs. Results of these analyses were compared with fit indices from the original 9-Factor model. Findings are represented in Table 4.7. and CFA output is attached in Appendix B (Tables AB2.1 to AB2.4).

The statistics in Table 4.7. display significant decreases in fit when the original 9-Factor model (Model 1) was respecified to an 8-factor model with 6 items measuring EI -Management (Model 2). However, there were progressive and significant increases in fit after items M1 (Model 2) and SR1 (Model 4), were removed. The fit of the final 25-item, 8-factor model (Model 4) was not significantly different from the 9-Factor Model 1. For Model 4, the NC statistic was well below the criterion of 3. In addition, the CFI and TLI values were 0.95 and higher, specifying a close fit (Mueller, 1996). Model 4 also had the lowest CAIC value, indicating that it was the best-fitting, most parsimonious model. The RMSEA value of 0.59

also indicated reasonable fit. In addition, the RMSEA confidence intervals straddled the 0.05

standard, meaning that 'close-fit' could not be rejected (MacCallum et al., 1996).

Table 4.7.

Goodness of Fit Statistics: Competing 8-Factor Models (n = 230)

	Comparative Model	χ^2 (NC)	df	RMSEA (CI)	CFI	TLI	CAIC	Δ χ^2	Δ df
Model 1 Hypothesised 9-Factor Model	-	498.528 (1.73)	288	.056 (.048-.065)	.96	.95	1077.96	-	-
Model 2 8-Factor Model 27 Items; 6 EI-Mot and EI-SR items subsumed in 'EI-Management' factor	*Model 1*	560.003 (1.89)	296	.062 (.054-.070)	.95	.94	1087.926	61.48**	8
Model 3 8-Factor Model 26 Items; Model 2 with Item M1 removed	*Model 1*	500.565 (1.85)	271	.061 (.052-.069)	.96	.95	1015.611	2.04	25
	Model 2							59.44**	17
Model 4 8-Factor Model 25 Items; Model 2 with Items M1 and SR1 removed	*Model 1*	443.347 (1.79)	247	.059 (.048-.067)	.96	.95	945.517	55.18^{ns}	41
	Model 2							116.66**	49
	Model 3							57.22**	24

Note: NC= Normed Chi Square, RMSEA = Root Mean Square Error of Approximation, CI = Confidence Interval, CFI = Comparitive Fit Index, TLI = Tucker-Lewis Index, CAIC = Consistent Akaike Information Criterion, Δ χ^2 = Change in Chi-Square, ** Δχ^2 significant at $p<.001$, ns = non significant

Final Model Selection

Overall, both the 9-Factor (Model 1) and 8-Factor models (Model 4) were well-

matched to the data. Model 4 was chosen as the final measurement model, partly on the basis

of the "parsimony principle", which states that "given two different models with similar

explanatory power for the same data, the simpler model is to be preferred" (Kline, 2005, p.

136). A structural model involving the 8-Factor measurement model would have fewer

parameters. Perhaps most importantly, this model does not contain the linearly dependant EI-Motivation/Self-Regulation subscales. Implementing Model 4 will likely reduce the many SEM problems associated with exceedingly high collinearity, such as inaccurate standardised regression coefficients (Yoder, 1998).

The convergent validity of the 8-Factor model was established by investigating the factor loadings of the remaining 25 items on their specific dimensions. Figure 4.2. shows that standardised parameter estimates ranged from 0.73 to .99, with all loadings being highly significant. Apart from the EI-Management factor, discriminant validity for all constructs in Figure 4.2 was established by results shown previously in Table 4.6. and Table AB2.5 (Appendix B). Similar tests on the EI-Management factor afforded support for the validity of the proposed dimensions in the hypothesised 8-factor model. EI-Management was paired with each factor to compare chi-square values when covariances were fixed at one to when covariances between the constructs were freely estimated. Two-factor models that matched EI-Management with each factor were then compared to a model which subsumed the same items within one-factor. For each comparison, the chi-square values, with 1 degree of freedom, were significantly different, and factor loadings indicated that items had a stronger link to their allocated construct compared to other related variables.
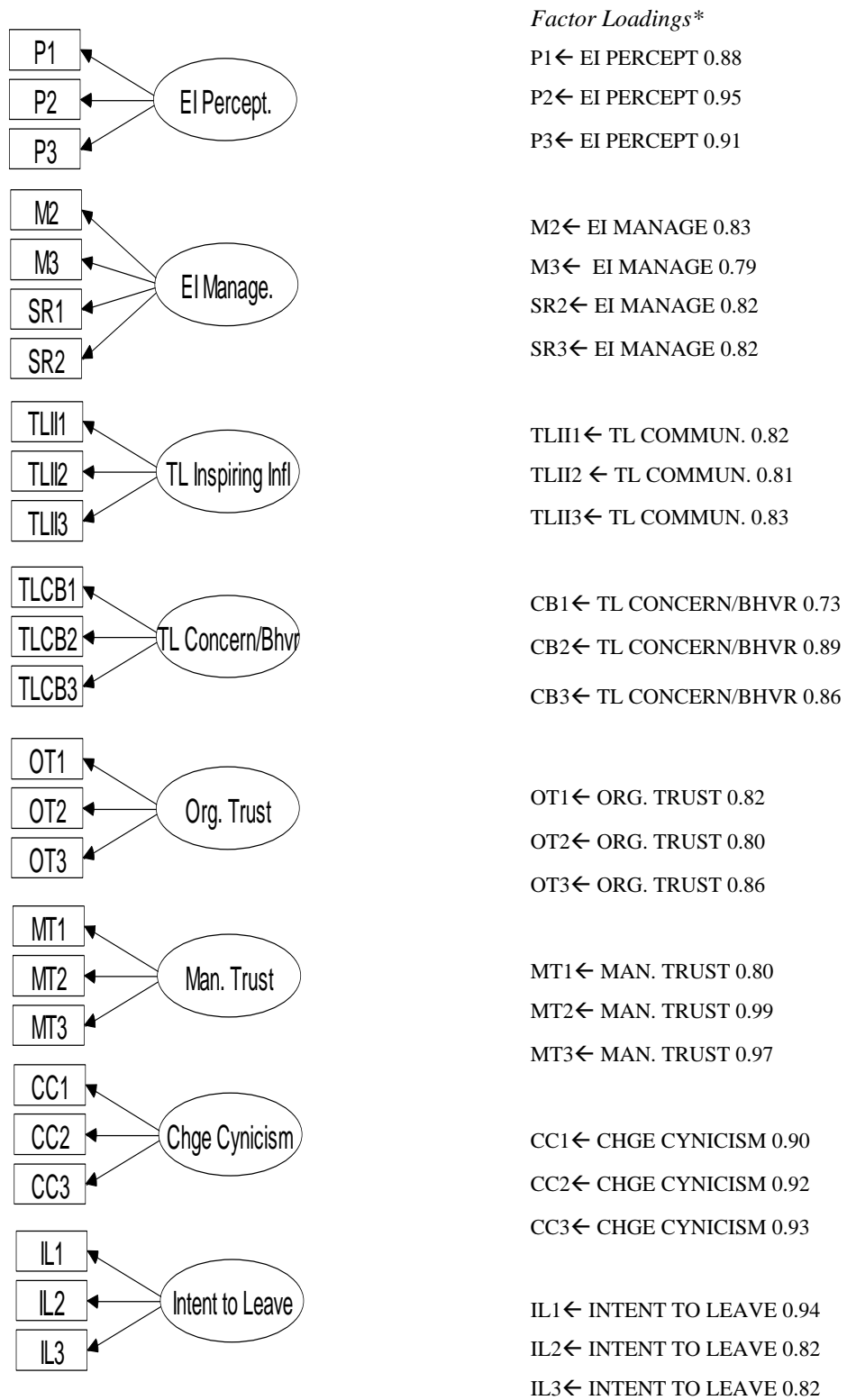
Figure 4.2. *Final 8-factor model with factor loadings; *Significant at p<.01;
Covariances and Error Terms not shown in Figure*

In summary, the data from Sub-Sample 2 was conceptualised by an 8-Factor measurement model (Figure 4.2.). Two discriminate EI dimensions were obtained, as were two transformational leadership factors. Trust in organisation, trust in manager, change cynicism (pessimism) and intention to leave emerged as unidimensional constructs. All items had very good convergent validity, shown by high factor loadings with their allocated construct. While some factors were highly correlated, discriminant validity of the final model was acceptable.

Invariance Analysis

Given that the model was developed and respecified using one sample, the next step was applying the model to an independent sample to assess factorial invariance. The 8-Factor measurement model was subsequently tested with Sample 2 from Organisation B (n = 329) to explore if the model operated equivalently across two disparate populations. Table 4.8. shows fit statistics for the hypothesised model compared to the null model using Sample 2. For the 8-Factor model, the values for the Normed Chi-Square (NC = 2.27), Comparative Fit Index (CFI = .95) and Tucker Lewis Index (TLI = .94) fell within levels indicating a close fit. The RMSEA (0.061) and RMSEA confidence intervals (0.055 – 0.068) reflected a reasonable fit to the data, and were clearly short of the 0.080 criterion for mediocre fit (MacCallum et al, 1996). The null model was a very poor fit to the data in all respects. These results were similar to those obtained for the previous sample (see Table 4.7.), supporting that the 8-Factor model may behave consistently across groups. In the very least, the validity of the model was established across both Sub-Sample 2 and Sample 2. However, the equivalence of item

measurements and factor form had to be tested statistically. It was possible that the tenability

of invariance would not hold when a variety of equality restraints were placed on the data.

Table 4.8.

Goodness of Fit Statistics for the 8-Factor Model (Sample 2, n = 339)

	Comparative Model	χ^2 (NC)	df	RMSEA (CI)	CFI	TLI	CAIC	$\Delta \chi^2$	Δ df
Model 1 Sample 2 8-Factor Model 25 Items	-	560.114 (2.27)	247	.061 (.055-.068)	.95	.94	1092.54	-	-
Model 2 Null-Model Sample 2	*Model 1*	6984.34 (23.28)	300	.259 (.252-.262)	.00	.00	7129.99	6037.47**	53

*NC= Normed Chi Square, RMSEA = Root Mean Square Error of Approximation, CI = Confidence Interval, CFI = Compartitive Fit Index, TLI = Tucker-Lewis Index, CAIC = Consistent Akaike Information Criterion, $\Delta \chi^2$ = Change in Chi-Square

The invariance analysis progressed through a number of stages that involved

identically specifying a model for the public organisation group (Sub-Sample 2) and the

private organisation group (Sample 2). All results are shown in Table 4.9. First, a 'baseline'

model (Model 1) was tested to compare the basic form of the hypothesised 8-Factor model

across the groups. Results revealed that this model was a close fit to the data. The CFI and

TFI levels were excellent (equal to or above .95), as were the RMSEA and CI values, which

were less than the requisite 0.05 that generally signifies close fit. These findings indicated that

the baseline model was well fitting across the two samples and could be used for comparative

purposes.

Table 4.9.

Invariance Analyses across 2 Groups (Sub-Sample 2, n = 230; Sample 2, n = 339)

	Comparative Model	$\chi 2$ (NC)	df	RMSEA (CI)	CFI	TLI	$\Delta \chi 2$	Δ df
Model 1 Hypothesised 8-Factor Model No Restraints	-	1018.226 (2.06)	494	.043 (.039-.049)	.96	.95	-	-
Model 2 Factor Loadings Equal	*Model 1*	1022.264 (2.00)	511	.042 (.38-.47)	.96	.95	4.04[ns]	17
Model 3 Factor Loadings and Factor Variances Equal	*Model 1*	1029.961 (1.98)	519	.042 (.38-.47)	.96	.95	11.74[ns]	25
Model 4 Factor Loadings, Factor Variances and Covariances Equal	*Model 1*	1051.840 (1.92)	547	.040 (.35-.044)	.96	.95	33.61[ns]	53

*NC= Normed Chi Square, RMSEA = Root Mean Square Error of Approximation, CI = Confidence Interval, CFI = Compartitive Fit Index, TLI = Tucker-Lewis Index, CAIC = Consistent Akaike Information Criterion, Δ $\chi 2$ = Change in Chi-Square, ns = not significant

Three equality restraints were imposed to further assess equivalency. Chi-square values were judged against the baseline model and reported within Table 4.9. First, factor loadings were restrained to be equal across the two groups (Model 2). Imposing this constraint effected a non significant change in chi-square relative to the baseline model, with $\Delta\chi^2 = 4.04$, 17 df, $p > 0.05$. After that, both factor loadings and factor variances were constricted to equal (Model 3), which also resulted in a non-significant change in chi-square compared with the first model, $\Delta\chi^2 = 11.74$, 25 df, $p > 0.05$. Next, the factor loadings, factor variances and factor covariances were constrained to be equal (Model 3). Again, this restriction did not lead to a significant change in chi-square, $\Delta\chi^2 = 33.61$, 53 df, $p > 0.05$. This cross-validation procedure supplied evidence that the measurement model was invariant across two disparate samples.

As Sample 2 was bi-national, invariance testing *within* this group was also conducted to control for nationality as a possible confounding variable. Sample 2 was split into an Australian employee sub-sample (n = 142) and a North American sub-sample (n = 196). Factor loadings, factor variances and factor covariances were constrained to be equal (Model 2) and compared with a baseline model with no equality restrictions. Results are displayed in Table 4.10. Imposing these constraints did not effect a significant change in chi-square relative to the baseline model, with $\Delta\chi^2$ = 54.15, 53 df, p>0.05. Results supported that the 8-Factor measurement model was well-fitting and invariant across the two samples.

Table 4.10.

Invariance Analyses across Australian (n = 142) and North American Subjects (n = 196)

	Comparative Model	χ^2 (NC)	df	RMSEA (CI)	CFI	TLI	$\Delta\chi^2$	Δ df
Model 1 Hypothesised 8-Factor Model No Restraints	-	828.934 (1.68)	494	.045 (.039-.050)	.95	.94	-	-
Model 2 Factor Loadings, Factor Variances and Covariances Equal	*Model 1*	883.083 (1.61)	547	.043 (.35-.45)	.95	.95	54.15 [ns]	53

*NC = Normed Chi Square, RMSEA = Root Mean Square Error of Approximation, CI = Confidence Interval, CFI = Compartitive Fit Index, TLI = Tucker-Lewis Index, $\Delta\chi^2$ = Change in Chi-Square, ns = not significant

Measurement Model Descriptives

Table 4.11. shows the means, standard deviations and alpha reliabilities (α) for Sub-Sample 2 and Sample 2 for each emergent construct. Mean results for the leader emotional intelligence, transformational leadership, and the trust variables were above scale midpoints, and change cynicism and turnover intention were below their corresponding scale midpoint. Compared to Sub-Sample 2, Sample 2 from Organisation B had significantly higher scores for

the emotional intelligence management dimension, and the transformational leadership

factors, and significantly less change cynicism.

The alpha values shown in Table 4.11. show very good reliability for all scales,

despite all being measured by only 3 or 4 items. Internal consistencies decreased slightly from

a priori values for some variables, but alpha coefficients still ranged from $\alpha = .85$ to $\alpha = .93$.

These values are well above the advocated standard of $\alpha = .70$ (Nunnally, 1978).

Table 4.11.

Descriptive Statistics for Emergent Factor Scales

	Mean [a]	SD	α	Mean [a]	SD	α	t Value[b]
	Organisation A Sub-Sample 2 n = 230			Organisation B Sample 2 n = 339			
EI Perception	5.14	1.59	.93	5.26	1.49	.91	-1.20
EI Management	5.69	1.21	.88	5.81	1.27	.90	-2.4*
TL Inspiring Influence	3.77	1.35	.86	4.04	1.37	.88	-2.95*
TL Concern/Behaviour	4.03	1.38	.86	4.29	1.37	.85	-2.6*
Trust in Organisation	4.34	1.56	.86	4.50	1.45	.85	-1.46
Trust in Manager	5.26	1.52	.92	5.30	1.41	.90	-.43
Change Cynicism (Pessimism)	3.03	1.56	.91	2.05	0.99	.91	9.44**
Intention to Leave	3.10	1.92	.89	3.00	1.14	.88	-1.71

[a]Scale range 1 – 7 for each variable except transformational leadership scale range of 1 – 6, Higher scores indicate higher levels of each variable; [b]Significant differences between Sub-Sample 2 and Sample 2 at **p<.01, p<.05

Correlation results are shown in Table 4.12. All relationships between the factors were

highly significant at the *p*<.01 level. Correlations for Sub-Sample 2 were mostly moderate in

strength and ranged from $r = -0.16$ to $r = 0.80$. Similar results were found for Sample 2, with

correlations from $r = -0.21$ to 0.81. The previous invariance testing suggested that the

relationships were equivalent across the two samples.

Table 4.12.

Correlations between Factors for Sub-Sample 2(n = 230) and Sample 2(n = 339)

Factors*	1	2	3	4	5	6	7	8
1. EI Perception	-	.81	.58	.68	.48	.53	-.21	-.25
2. EI Management	.80	-	.61	.64	.44	.53	-.24	-.25
3. TL Inspiring Influence	.55	.58	-	.69	.45	.47	-.31	-.27
4. TL Concern/Behaviour	.73	.68	.72	-	.44	.60	-.33	-.31
5. Trust in Organisation	.46	.38	.48	.42	-	.57	-.51	-.44
6. Trust in Manager	.64	.58	.57	.65	.58	-	-.36	-.25
7. Change Cynicism (Pessimism)	-.20	-.16	-.32	-.25	-.55	-.39	-	.43
8. Intent to Leave	-.31	-.27	-.37	-.37	-.47	-.34	.47	-

* Values below left diagonal represent correlations for Sub-Sample 2 (Organisation A) and values above right diagonal are from Sample 2 (Organisation B); All correlations significant at *p*<.01.

Partial correlation was then implemented to explore these relationships while controlling for scores on a person's propensity towards trust. Inspection of the values contained in Table 4.13. suggested that controlling propensity towards trust had very little effect on the strength of relationships between these factors. Values decreased by no more than 0.02 to 0.04 for both Sub-Sample 2 and Sample 2. Most of these very slight reductions occurred for relationships involving the change cynicism factor. All relationships were still highly significant at *p*<.01.

Table 4.13.

Partial Correlations Controlling for Dispositional Trust, Sub-Sample 2 (n = 230) and Sample 2 (n = 339)

Factors*	1	2	3	4	5	6	7	8
1. EI Perception	-	.75	.57	.68	.45	.51	-.17	-.23
2. EI Management	.74	-	.60	.64	.42	.52	-.21	-.23
3. TL Inspiring Influence	.54	.58	-	.69	.45	.46	-.30	-.26
4. TL Concern/Behaviour	.72	.68	.71	-	.43	.60	-.31	-.30
5. Trust in Organisation	.44	.37	.46	.40	-	.54	-.46	-.41
6. Trust in Manager	.64	.58	.56	.64	.56	-	-.32	-.22
7. Change Cynicism (Pessimism)	-.18	-.14	-.29	-.23	-.52	-.37	-	.41
8. Intent to Leave	-.29	-.27	-.36	-.36	-.46	-.32	.45	-

* Values below left diagonal represent correlations for Sub-Sample 2 (Organisation A, *n* = 230) and values above right diagonal are from Sample 2 (Organisation B, *n* = 339); All correlations significant at *p*<.01.

Discussion

At this stage of the research, Study 1 makes a distinct contribution to existing knowledge of emotional intelligence (EI) in the context of leadership and employee outcomes. In support of the lone hypothesis (H4.1), a set of constructs was identified to parsimoniously measure the variables of interest within a large employee survey. All items were analysed together through exploratory and confirmatory methods. Anderson and Gerbing (1982) clearly showed the advantages of testing several scales at once in comparison to testing each scale separately. While nine dimensions were posited after preliminary analysis, further testing revealed that two emergent EI factors (motivation and self-regulation) were linearly dependant and likely to cause difficulties in the structural modelling stage of analysis. This collinearity was a probable consequence of the semantic likeness between some of the motivation and self-regulation scale items. The two foregoing scales were subsequently combined and condensed into one factor- emotion management. Using robust quantitative techniques across two different samples, subsequent evidence was presented to support eight discriminate dimensions within an all-inclusive measurement model. At this stage, the contributions of the research are briefly overviewed and described with greater specifity within Chapter VIII.

Within the context of all of the employee survey variables and the current samples, it was found that Rahim and Minor's (2002) emotional intelligence scale (EIS) was best represented by two separate dimensions. One of these dimensions included a leader's displayed competency in emotional perception, which involves an understanding of their own and employees' feelings and emotional cues. The retained items were originally from

Goleman's (1995) empathy and self-awareness dimensions. The second variable

concerned emotional management and reflected a leader's ability to manage their own

emotions and to stay directed towards organisational goals. These items originated from

Goleman's self-regulation and motivation subscales. While the discriminant validity of the

emotion perception and emotion management dimensions was established, the correlation

between the two was nevertheless strong across the organisational samples. It is possible

that the two EI factors are better represented by a single higher-order factor when they are

utilised within a structural model. This result informs the next stage of analysis (Chapter

V), whereby the existence of a second-order factor can be assessed against a first-order

model. This higher factor could represent a general EI factor, and is consistent with

Mayer et al's (2003) belief that the field of EI is adequately illustrated by an assortment of

models, including those with just one global EI factor.

The investigation of EI using surveys has been challenging for some researchers,

with independent factor analytic studies often finding contradictions between established

frameworks and surfacing dimensions (Palmer et al., 2003; Petrides & Furnham, 2000;

Jordon et al., 2002). Unfortunately this precedent was sustained in the current

investigation with the two-factor EI solution providing the best fit to the data. The

emergent variables were very reliable and were substantiated via tests of discriminate and

convergent validity. They also appeared to be face valid, in that the retained items

appeared representative of their labels. However, the results were inconsistent with

Goleman's (1995) mixed-model of EI on which the original items were based. That is,

while Rahim and Minors' (2002) five EI facets were analogous to Goleman's framework,

the present findings did not replicate the original five-factor structure. The findings had more in common with those from Schlechter and Boshoff (2003) who established that EI, as measured by the EIS, was best depicted by three factors at most.

The factor structure of the transformational leadership scale was also incompatible with the theoretical agenda on which it was developed (Bass & Avolio, 1995; Englebrecht et al., 2001, personal communication). The theorised four-factor solution did not emerge from the data, with results instead supporting the emergence of two transformational leadership variables. One of these factors was a leader's inspiring influence, comprised of items relating to inspirational leadership and idealised influence. A transformational leader with inspiring influence successfully articulates or expresses optimistic values and goals for the future. The second factor was associated with a leader being able to build respect and show concern for the needs and development of individual employees. This factor subsumed items from the original individual consideration and idealised influence subscales (Bass & Avolio, 1995).

The results supported Antonakis et al's (2003) acknowledgement that transformational leadership subdimensions may deviate according to the situation and sample. Also, results established some support for Antonakis et al.'s (2003) findings that idealised influence was related to two separate variables regarding a leader's; (a) Characteristics, and, (b) Actions. The idealised influence items within the current study were distributed across both emergent transformational leadership factors, with one of these factors expressly denoting behaviour, and the other referring to how a leader is

positive, confident and aspirational. Current findings, however, were dissimilar to those of Yukl (1999) who found that the transformational dimensions were not discriminate at all. Yukl (1999) suggested that the original scale and model might be flawed, and this is one possible explanation for the current results in this thesis.

It could be argued that the present results cast doubt on the construct validity of the original EI and transformational leadership scales. However, another explanation for the reduction of factors may have been that the all variables within the original questionnaire were placed into an exploratory factor analysis at once. Through this process, a number of items had to be removed to create a clean factor solution. For example, some transformational leadership items loaded simultaneously on factors that were dominated by 'transformational leadership' and 'emotional intelligence' items, and were removed from further analysis. With this example, it is possible that different EI items may have been retained if EI was not being measured with transformational leadership. As stated, a measurement model should be analysed by placing all items for each construct together in the one analysis rather than analysing each scale separately (Anderson & Gerbing, 1982). In particular, this technique helps reduce multi-collinearity and overstated coefficients, which negatively impact the validity of results (Anderson & Gerbing, 1982). However, factor analytic results implementing the current scales may be different in studies investigating alternate organisational variables. Other reasons for the decrease in factors could include differences between study samples, response modes, study foci and variations in statistical methodologies. These, and other, explanations are further explored

in within the forthcoming conclusions and implications chapter (Chapter VIII). Chapter VIII also looks at the possible limitations of the research, including common method bias.

The results supported the construct validity of the trust, change cynicism (pessimism) and intention to leave measures. In regards to the former, trust in the organisation and trust in a manager were found to be distinct, but interconnected variables. Previous research has generally found consistent validity results for measures that are structured around different trust referents, such as a manager or peers (Cook & Wall, 1980; Tan and Tan, 2000). In terms of the change cynicism and intention to leave measures, each was highly reliable and consistent with the theories underpinning their construction. The construct validity of the scales was corroborated when items measuring the variables loaded onto just one factor during EFA, with the structure being upheld during confirmatory factor analysis (CFA).

The present research builds on current literature in regards to the measurement of each construct. The concise measures may be used in employee surveys, culture analysis, leadership assessment and research paradigms where longer questionnaires are unworkable. The depth of the employed confirmatory techniques across private and public sector samples lent further weight to the validity of the final measures. Many previous studies have employed exploratory methods that are determined more by post hoc analysis in comparison to theory driven confirmatory methods. In further support of the measurement model, results were evidenced after controlling for cross-national differences and the dispositional trust levels of respondents. In effect, researchers

and/or organisational practitioners can have considerable assurance that the emergent constructs can be reliably measured. However, it is urged that scales be factor analysed before use within alternate studies. The solutions presented in the current thesis may not be replicable across all data sets.

In conclusion, this chapter reported on the development of a highly reliable and parsimonious set of measures of leader emotional intelligence, transformational leadership, employee trust in organisation/leader, change cynicism and intention to leave. Chapter V applies these measures to a structural model that outlines specific relationships between the constructs.

CHAPTER V

STUDY 1: EMPLOYEE SURVEY STRUCTURAL MODEL

Introduction

The previous chapter reported on the measurement model of an employee survey that assessed leader emotional intelligence (EI), transformational leadership, employee trust in organisation/leader, change cynicism and intention to leave. The present chapter aims to investigate a model of structural relationships between the emergent dimensions. These relationships are based on the theoretical and empirical material presented in the literature review of this thesis (Chapter II). As recommended by the SEM literature (Kelloway, 1998; Kline, 2005), competing paradigms are analysed to assess if alternative structures provide a more acceptable fit to the data (Chin, 1988). Chapter V proceeds by summarising arguments in support of the hypothesised structural model and each comparative model.

Development of the Hypothesised Model

Figure 5.1 denotes the hypothesised first-order model of structural relationships (Model 1). The model employs paths that predict relationships between the two emotional intelligence factors and the two transformational leadership dimensions. As Chapter II discussed, there is a growing body of evidence in support of leaders with transformational qualities having higher emotional intelligence, particularly when survey-based instruments are implemented as the EI measure (Barling et al. 2000; Gardner & Stough, 2002; Palmer et al., 2001; Sosik & Megerian, 1999; Srivsastava & Bharamanaikar, 2004). An ability to perceive emotion may enable leaders to engage in transformational behaviours. These actions may

include the formulation an emotionally-appealing vision and individualising employee development based on an understanding of existing mental frameworks.

Secondly, the hypothesised model reflects empirical evidence that supports that transformational leadership influences trust development (e.g. Dirks & Ferrin, 2002). Specifically, Model 1 shows a relationship between a leader with inspiring influence and trust generated in that leader and the organisation itself. The model also predicts a relationship between a transformational leader who displays concern for employees and trust in that leader and the company. Intuitively, an inspiring transformational leader may facilitate trust at various levels through engendering a shared organisational purpose. The same leader may convey a willingness to comprehend the individual needs and capabilities of followers and perhaps build better trusting relationships (Jung & Avoilio, 2000). Chapter II critically analysed several studies that supported strong links between transformational leadership and trust in a leader (e.g. Connell et al., 2003; Ferres et al., 2005; Gillespie & Mann, 2004; Jung & Avolio, 2000; Pillai et al., 1999). Results from Ferres and Travaglione (2004) also showed a highly significant relationship between employee-rated transformational leadership and reported trust in an organisation. A path in the model reflects the plausible assumptions that trust in a leader breeds trust in the company as a whole (Ferres & Travaglione, 2004).

Despite numerable findings to the contrary, some research has indicated that only certain transformational practices are consistently linked to trust creation (Butler et al., 1999; MacKenzie et al., 2001; Podsakoff et al., 1996). Specifically, behaviours relating to intellectual stimulation, the formulation of vision and the establishment of high performance goals may have an ambiguous relationship with the perceived trustworthiness of a

transformational leader. While this research must be considered, the hypothesised model

reflects the weight of research that maintains a link between the two contructs. A path also

replicates the assumption that the two transformational leadership factors are interlinked, in

that a leader who has inspiring influence is likely to be rated as showing more concern and

acting in transformational ways.

Alternate paths in Model 1 detail interrelationships between employee trust, change

cynicism and intention to leave. From a social exchange perspective, a high trust environment

may positively influence employees' affective experiences concerning change and intentions

to stay or leave an organisation (Rousseau & Tijoriwala, 1999). Albrecht and Travaglione

(1999) reported findings that change cynicism and intention to leave followed employees'

lack of trust in senior management. The model subsequently posits that employees' responses

to change and their intention to leave may stem from employees accepting the trustworthiness

of their manager and their organisation. Though not studied previously, the final path denotes

that negative attitudes towards change may feed plans to leave an organisation. Though the

proposition is exploratory, just as trust may result in felt attachment, change cynicism may

obviate employees' willingness to stay.

Development of the Competing Models

Models 2 to 5 show a variety of representations that are consistent with existing

theory and may better represent the data compared to the hypothesised model. Model 2

(Figure 5.2.) illustrates a higher-order paradigm. This figure details equivalent relationships to

those presented in Model 1, except for the 'EI- Perception' and 'EI-Management' dimensions

that are incorporated into a second-order 'EI' construct. Chapter IV noted the strong relationship between the two emergent EI dimensions. This may indicate that EI is better represented as a second-order construct rather than two separate factors. In this regard, the solitary higher-order EI factor captures the common features underlying both 'EI-Perception' and 'EI-Management' (Byrne, 2001). While the discriminant validity of the two original EI factors was supported, Model 2 is consistent with existing notions of emotional intelligence that incorporate the centrality of both emotion perception and emotion management in the overall definition of EI (e.g. Goleman, 1995; Mayer & Salovey, 1997b).
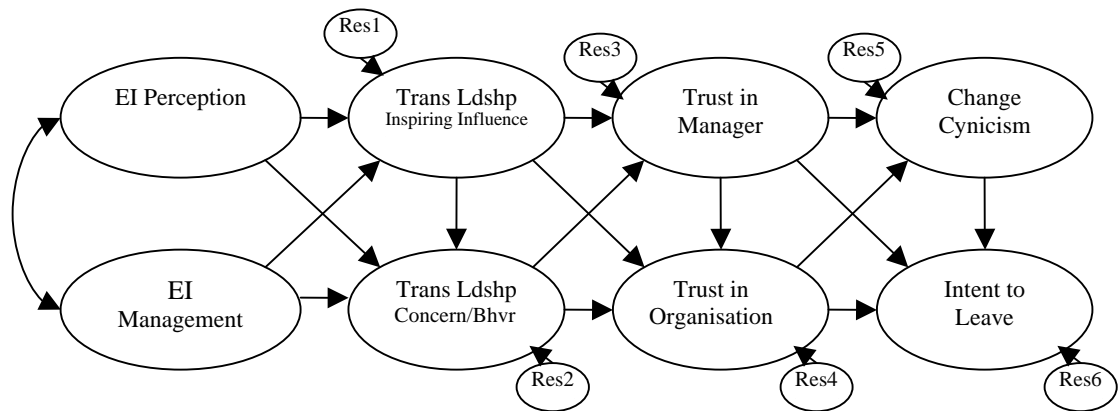

Figure 5.1. *Model 1: Hypothesised first order structural model where EI->TL->Trust->CC and IL*
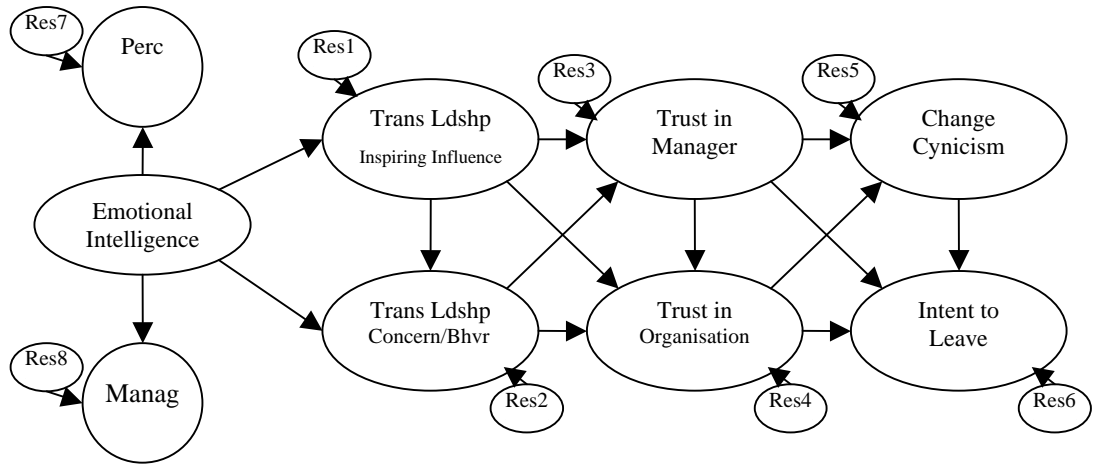
Figure 5.2. *Model 2: Higher order structural model where EI->TL->Trust->CC and IL*

Model 3 (Figure 5.3) also represents a second-order illustration of relationships. Here, the two EI factors and two transformational leadership dimensions are subsumed within a higher-order 'Leader Attributes' factor. This conceptualisation is an acknowledgement of the strong connection and shared characteristics between emotional intelligence and transformational leadership (Ashkansay & Tse, 2000). This higher-order leadership factor could explain the covariance between EI and transformational leadership when tested within a full structural model of relationships.
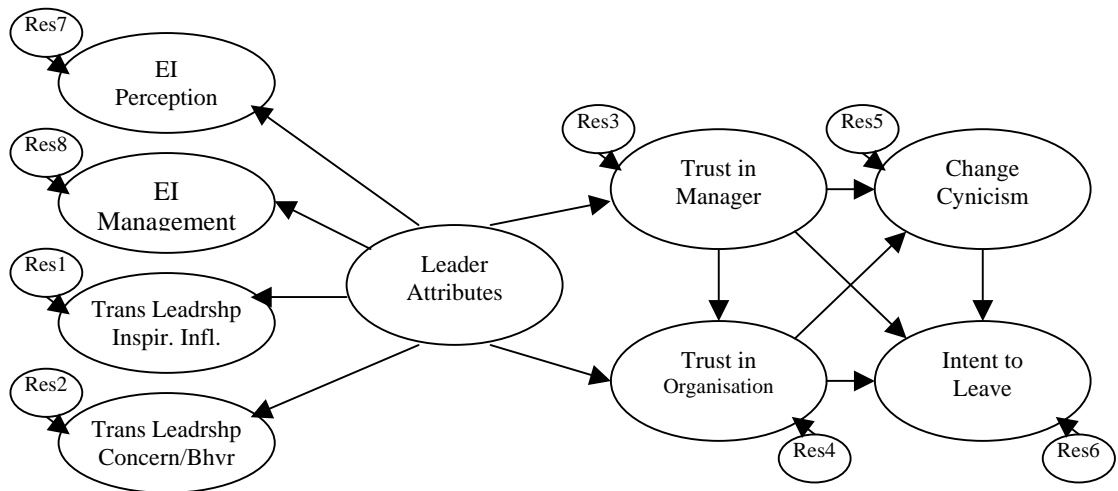

Figure 5.3. *Model 3: Higher order structural model where leader attributes->Trust->CC->IL*

Models 4 (Figure 5.4) and 5 (Figure 5.5) are first-order paradigms that incorporate slight variations to the hypothesised model. Whereas Model 1 shows direct paths between 'Trust in Manager' and both cynicism towards change and intention to leave, Model 4 theorises indirect relationships. That is, an employee's trust in a manager may lead to him/her trusting the organisation, which in turn impacts on change cynicism levels and intentions to stay or leave. Model 5 shows a similar process model, with the direct path from 'Trust in Organisation' to 'Intention to Leave' removed. Here, trust in an organisation may indirectly affect intentions to leave via change cynicism.
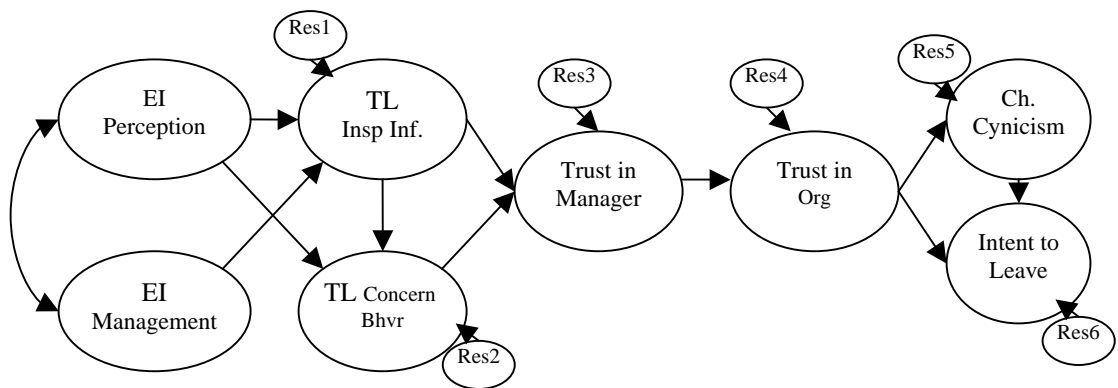

Figure 5.4. *Model 4: First order structural model where EI->TL->MT->OT->CC and IL*
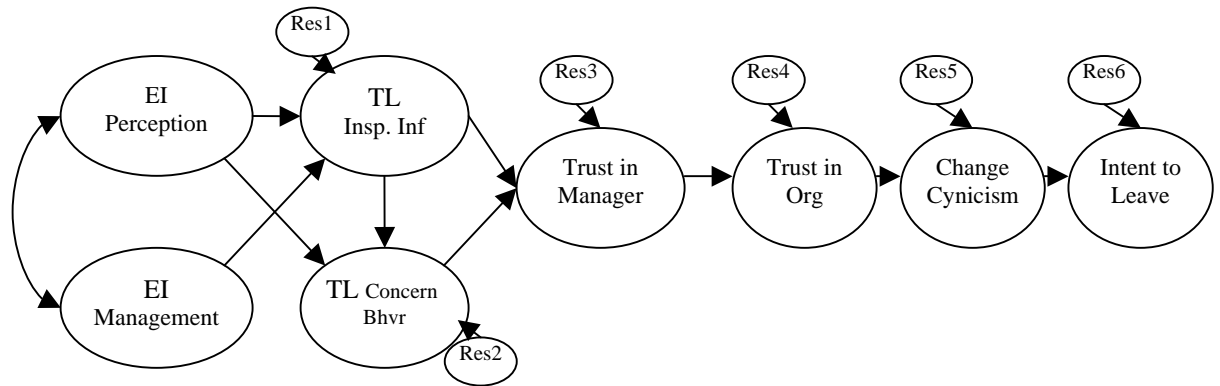
Figure 5.5. *Model 5: Process structural model where EI->TL->MT->OT->CC-> IL*

There are 9 hypotheses for this chapter:

H5.1.   Employee-rated leader EI-Perception and EI-Management will positively affect

ratings of Transformational Leadership (Inspiring Influence, TLII/ Concern and

Behaviour, TLCB).

H5.2.   Employee-rated TLII will positively influence observations of TLCB.

H5.3.   Employee-rated TLII and TLCB will have a significant and positive effect on

employees' Trust in Manager and Trust in the Organisation.

H5.4.   Employees' Trust in the Organisation will be positively affected by employees' Trust

in Manager.

H5.5.   Employees' Trust in Manager and Trust in Organisation will have a significant and

negative relationship with employees' Change Cynicism (Pessimism) and Intention to

Leave.

H5.6.   Employees' Intention to Leave will be proportionally affected by employee's Change

Cynicism (Pessimism).

H5.7. A higher order 'Emotional Intelligence' factor will explain the relationship between EI-Perception and EI-Management within a full structural model.

H5.8. A higher order 'Leader Attributes' factor will explain the covariance between EI and TL dimensions in a full structural model.

H.5.9. A structural model tested with the validation sample will be invariant across an independent cross-validation sample.

Method

Sample

Two samples were used to test structural relations in the employee survey, Sample 1 (Wave 1, $N = 467$) and Sample 2 ($N = 339$). While the generation of the measurement model (Chapter IV) required the division of Sample 1 into two sub-groups, the full sample was used here to obtain maximal power. Demographic statistics were provided in Chapter III, and showed that Sample 1 was quite dissimilar from Sample 2.

Measures

Twenty-five survey items were retained from the employee survey that was overviewed in Chapter III. These items measured eight factors that surfaced from exploratory and confirmatory factor analysis: (1) Leader EI-Perception, (2) Leader EI-Motivation, (3) Transformational Leadership Inspiring Influence, (4) Transformational Leadership Concern/Behaviour, (5) Trust in Manager, (6) Trust in Organisation, (7) Change Cynicism (Pessimism) and (8) Intent to Leave.

The analysis of the measurement model was designed to select a nominal amount of reliable items to measure each of the eight emergent constructs, while also keeping the issues

of construct validity paramount. While there is dissent in the literature surrounding the optimal number of indicators for SEM research (Little et al., 1999), arguments have posited that as little as two items are sufficient to delineate factors and meet SEM requirements (Kline, 1994). Others have highlighted that three indicators per construct is an optimal number to define each construct in SEM (Little et al., 1999; Bentler & Chou, 1987). The previous chapter described how three items were chosen as indicators for seven of the eight factors of interest. The other factor (EI-Management) had four representative items rather than three; in this case, the additional item afforded the construct greater face-validity. All items were measured on a 7-point Likert scale ranging from '1 = Strongly Disagree to 7 = Strongly Agree', except for the transformational leadership items which operated on a similarly-scaled 6-point metric. Response scales were consistent with those of the originally published questionnaires. Next, the 25 items are summarised.

Leader Emotional Intelligence

Seven items measured two factors of leader emotional intelligence (EI), EI-Perception (3 items) and EI-Management (4 items). All items were from Rahim and Minor's (2002) emotional intelligence measurement instrument, which was based on Goleman's (1995) model of EI. For EI-Perception, items asked employees to rate the level to which their leader 'Understands the feelings transmitted through non-verbal messages', 'Understands the links between employees' emotions and what they do' and 'Understands emotional cues from others'. These items were originally targeted to measure Goleman's EI dimensions of self-awareness and empathy. Alpha coefficients of $\alpha = 0.93$ and $\alpha = 0.91$ were obtained upon the investigation of the measurement model.

The four EI-Management items measured how much an employee's leader 'Stays focused on goals despite setbacks', 'Accepts rapid change to attain the goals of his or her group/organisation', 'Maintains composure irrespective of his or her emotions' and 'Manages his or her stress well'. The first two items were initially intended to measure 'Motivation' within Goleman's (1998) model of EI, and the latter two items were designed to measure 'Self-Regulation' within the same typology. Reported internal reliabilities were $\alpha = 0.88$ and $\alpha = 0.90$ for the four-item composite.

Transformational Leadership

Six items measured two subcomponents of transformational leadership (TL). The items were retained from an adapted version (Engelbrecht, 2001; Kraft et al., 2003) of the Multi-Factor Leadership Questionnaire (MLQ) (Bass & Avolio, 1995). For the factor of TL-Inspiring Influence, items directed employees to rate the extent to which their leader 'Talks optimistically about the future', 'Articulates a compelling vision of the future' and 'Specifies the importance of having a strong sense of purpose'. The items were part of the a priori MLQ 'inspirational leadership' and 'idealised influence' dimensions. In Chapter IV, stated reliabilities for this factor over two samples were $\alpha = 0.86$ and $\alpha = 0.88$.

For the second TL factor, Concern and Behaviour (TLCB), the three items asked employees to rate the degree to which their leader 'Considers me as having different needs, abilities and aspirations from others', 'Helps me to develop my strengths' and 'Acts in ways that builds my respect'. These items were from the 'individual consideration' and 'idealised influence' dimensions of the original scale (Engelbrecht, 2001, personal communication;

Kraft et al., 2003; Bass & Avolio, 1995). Alpha reliabilities were reported as $\alpha = 0.86$ and $\alpha = 0.85$ (Chapter IV).

Trust in Organisation and Trust in Manager

Six items from the Workplace Trust Scale (WTS) that were previously developed by the author (Ferres, 2002) were used to measure Trust in Organisation (3 items) and Trust in Manager (3 items). Items related to self-rated behaviours, and were selected due to their close alignment with the definition on which the scale was based. The said definition conceived trust as 'an individual's <u>willingness to act</u> on the basis of his/her perception of a trust referent (peer, supervisor/ manager/ organisation) being supportive/caring, ethical, competent and cognisant of others' performance' (Ferres, 2002, p. 42). The items for Trust in Organisation were 'I act on the basis that this organisation follows plans through with action', 'I express my opinion honestly at this organisation with the knowledge that employee opinions are valued' and 'I perform knowing that this organisation will recognise my work'. Reliabilities were reported as $\alpha = 0.86$ and $\alpha = 0.85$ in Chapter IV for the three-item scale. The items for Trust in Manager were 'I proceed on the basis that my manager will act in good faith', 'I act knowing that my manager will keep his/her word', and 'I act on the basis that my manager displays integrity in his/her actions'. Internal reliabilities were stated to be $\alpha = 0.92$ and $\alpha = 0.90$ in the previous chapter.

Change Cynicism (Pessimism)

Change cynicism was measured by three items from the Cynicism about Organisational Change (CAOC) 'pessimism' subscale (Wanous, et al. 2000). Only one item from the original scale was removed after confirmatory factor analysis. It was chosen due to

its comparatively lower factor loading (see Chapter IV). The remaining items were

'Suggestions on how to solve problems will not produce much real change', 'Plans for future

improvement will not amount to much' and 'Attempts to make things better around here will

not produce good results'. Alpha coefficients were stated as $\alpha = 0.92$ for both samples tested

within Chapter IV.

Intention to Leave

The intention to leave items remained unchanged from the original questionnaire.

The 3-item instrument was suggested by Cohen (1993) and asked respondents to indicate the

extent of agreement with the following items: 'I think a lot about leaving the organisation', 'I

am actively searching for an alternative to the organisation', and 'When I can, I will leave the

organisation'. Alpha reliabilities, as reported in Chapter IV, were $\alpha = 0.89$ and $\alpha = 0.88$.

Dispositional Trust (Control Variable)

Along with the 25-items retained for the measurement model, items measuring

Dispositional Trust were also included. Items remained unaltered from the original 5-item

scale described in Chapter III. That is, all questions were taken from the trust-cynicism

subscale within the 'agreeableness' factor in the Revised NEO Personality Inventory (Costa &

McCrae, 1985). Internal reliabilities were $\alpha = 0.83$ for Sample 1 and $\alpha = 0.79$ for Sample 2.

Analyses

As a preliminary measure, explore procedures were used to screen for normality,

missing data and outliers. Univariate analysis uncovered slightly skewed data for variables

within both Sample 1 and Sample 2. Rather than transforming the variables and losing the

scale for each variable, mutlivariate normality was monitored within calculations and

accounted for via the Bollen-Stine *p* value in AMOS (Byrne, 2001; Holmes-Smith et al., 2004). Listwise deletion was implemented, with no outliers being identified after final data screenings. Descriptive statistics for the pertinent samples were then produced.

The SEM literature fervently advocates the analysis of competing structural models to see if alternative models also provide a fit to the data (Kelloway, 1998; Kline, 2005; Chin, 1988). Using Sample 1, a hypothesised structural model and the four other models were evaluated for fit using a selection of indices. Values up to 3 for the Normed Chi Square (NC) statistic, and below 0.05 for the Root Mean Square Error of Approximation (RMSEA), suggested a model was close-fitting (Mueller, 1996). RMSEA values up to 0.08 were considered to reflect a reasonable fit (Byrne, 2001). Fit statistics over 0.95 for the Tucker-Lewis Index (TLI), and 0.93 for the Comparative Fit Index (CFI) were additional indicators of a close fit, while values above 0.90 for both these indices suggested adequate fit (Mueller, 1996; Byrne, 2001). Where applicable, the Consistent Akaike Information Criterion (CAIC) was generated as a comparative measure of a model's parsimonious fit (Byrne, 2001). Power analysis and required sample numbers for a desired power level of 0.80 were calculated for models using RMSEA confidence intervals and an SAS 'power analysis' program (MacCallum et al, 1996, Appendix C). A model that best represented the data was selected based on a composite of theoretical considerations, fit statistics and the strength of parameter estimates. If it did not fit the data, the model could be respecified via the sequential removal of non-significant paths. As discussed in Chapter III, this is a common yet somewhat divisive practice amongst SEM researchers (Kelloway, 1998).

The proposed model suggested that the effect of EI on change cynicism and turnover intention was mediated by transformational leadership and trust. To further support the model's structure, direct and mediating effects were explored. Borrowing from procedures outlined in Bollen (1989), various direct effects were either added or fixed to zero where required, so that variations could be compared with the initially hypothesised model. Explicit details of specified paths are contained within the forthcoming results section within this chapter.

To test the invariance hypothesis, the structural model was cross-validated with Sample 2. Similar to the invariance analysis of the measurement model, this process addressed the question of whether the fit of the structural model, specified with Sample 1, could be replicated with a dissimilar sample. First, the final model was estimated separately for the validation sample. Next, the model was concurrently estimated with both groups to form a comparative baseline model. Constraints were specified so that factor loadings, factor path coefficients, factor variances and covariances between the exogenous variables were, in turn, restrained to be equal across the two groups (Byrne, 2001). Once more, if the χ^2 change was not significantly different from the baseline model at every phase, results implied the structural model was invariant across both samples. Each of these analyses was performed using AMOS 5.0 software.

Results

Descriptive Statistics

The previous chapter detailed descriptives from the Sample 1 Sub-Samples (Wave 1, Organisation A) comparative to Sample 2 statistics (Organisation B). In this chapter, Table 5.1. shows the means, standard deviations and alpha reliabilities for the *combined* Sample 1

(Wave 1) as measured against Sample 2. In both groups, mean results for leader emotional intelligence, transformational leadership, and trust were above scale midpoints, and change cynicism and turnover intention were below their corresponding scale midpoints.

Table 5.1.

Descriptive Statistics for Sample 1 and Sample 2

	Mean [a]	**SD**	*α*	**Mean** [ab]	**SD**	*α*
	Organisation A Sample 1 (Wave 1) n = 448			Organisation B Sample 2 n = 339		
EI Perception	5.16	1.54	.92	5.26	1.49	.91
EI Management	5.64	1.21	.87	5.81*	1.27	.90
TL Inspiring Influence	3.73	1.40	.86	4.04**	1.37	.88
TL Concern/Behaviour	3.98	1.39	.86	4.29**	1.37	.85
Trust in Organisation	5.21	1.37	.85	4.50	1.45	.85
Trust in Manager	4.43	1.53	.92	5.30	1.41	.90
Change Cynicism (Pessimism)	3.05	1.52	.89	2.05**	0.99	.91
Intention to Leave	3.12	1.91	.88	3.00	1.14	.88

[a] Scale range 1 – 7 for each variable except transformational leadership scale range of 1 – 6, Higher scores indicate higher levels of each variable; [b] Significant differences between Sample 1 and Sample 2 at *p<.05, **p<0.01

Compared to Sample 1, Sample 2 rated their leaders as demonstrating significantly higher EI-Management and transformational leadership characteristics. Employees from Sample 2 also had less pessimistic attitudes towards change, although there was not a notable difference in mean intention to leave between the two groups.

Structural Equations Modelling

Competing Models

Various competing structural models were analysed to see if they also provided a fit to the data. Table 5.2. shows the fit indices for the hypothesised structural model (Model 1, Figure 5.1.) and four theoretically-bound alternatives (Model 2 to Model 5, Figure 5.2. to Figure 5.3). Positive fit statistics were obtained for each model. The Normed Chi-Square

(NC) values were all under the criterion level of 3 that generally indicates a close fit (Bollen, 1989). This was consistent with high Comparative Fit Index (CFI) values and good Tucker-Lewis Index (TLI) results for each model. All CFI and TLI estimates were 0.95 or more, which were equal to, or above, required levels designating a close fit (Byrne, 2001). Good fit statistics for Model 2 supported that the two EI variables could be conceptualised as a higher order 'EI' factor. Similarly respectable results for Model 3 implied that the four EI and TL variables could viably reflect a higher-order 'Leader Attributes' construct.

RMSEA values provided further evidence of fit. The entire RMSEA confidence intervals for Model 1 and Model 2 were below 0.05, meaning that 'not close fit' could be rejected for these variations (MacCallum et al, 1996, p. 137). These models also had the smallest Consistent Akaike Information Criterion (CAIC) estimates, with lower values indicating a better fit relative to parsimony. The higher-end RMSEA confidence intervals for Models 3, 4 and 5 were on the cusp of 0.050, meaning that neither the 'close fit' hypothesis nor the 'not-close fit' hypothesis could be abandoned. The difference of 0.006 between the lowest and highest RMSEA values was very small.

Judging by the fit statistics, each model provided at least a reasonable fit to the data obtained from Sample 1. Overall, Models 1 and 2 were the most workable alternatives, providing the closest fit to the data in accordance with all point estimates.

Table 5.2.

Goodness of Fit Statistics: Competing Structural Models (Sample 1, Wave 1, n = 448)

	χ^2 (NC)	df	RMSEA (CI)	CFI	TLI	CAIC

Model 1 Hypothesised Model, Figure 5.1. *First Order EI->TL->Trust->CC and IL*	454.742 (1.76)	259	.041 (.035-.047)	.98	.97	922.859
Model 2 Figure 5.2 *Higher Order EI->TL->Trust->CC and IL*	460.936 (1.77)	260	.042 (.035-.048)	.98	.97	922.748
Model 3 Figure 5.3 *Leader Attributes->Trust->CC and IL*	526.129 (2.00)	263	.047 (.040-.051)	.97	.96	966.627
Model 4 Figure 5.4 *First Order EI->TL->MT->OT->CC and IL*	494.455 (1.88)	263	.044 (.038-.050)	.97	.95	934.953
Model 5 Figure 5.5 *Process Model EI->TL->MT>OT->CC->IL*	527.406 (2.02)	261	.047 (.041-.051)	.97	.96	960.798

Note: NC = Normed Chi Square, RMSEA = Root Mean Square Error of Approximation, CI = Confidence Interval, CFI = Comparative Fit Index, TLI = Tucker-Lewis Index, CAIC = Consistent Akaike Information Criterion

The power of each analysis was determined via the RMSEA confidence intervals and tables contained within MacCallum et al's (1996) article. For Models 1, 2, and 3, the level of power for 'close' and 'not-close' fit for the various degrees of freedom and sample size (($df = $ 259 to $df = 263$, $N = 448$) was 1.0 for all analyses, the highest level possible. The analyses had strong power to reject null hypotheses. When df and N are large, and entire RMSEA confidence intervals are below 0.050, power is optimised, as was the case with the current study (MacCallum et al., 1996). Power estimates for Model 4 and Model 5 were also calculated to be 1.0 despite RMSEA confidence intervals straddling the 0.050 criterion.

A post-hoc determination of necessary sample size for a power of 0.80 was calculated via the SAS program contained within Appendix C. Via MacCallum et al's (1996)

standards, results suggested that an *N* of 448 was more than adequate for the analyses. The range for required sample sizes was calculated to be between $N = 92$ and $N = 104$ for the various models. Despite this outwardly small number, in reality, *N* must be substantially greater than the number of parameters contained within any model (Boomsa, 1983 in Kelloway, 1998). The number of parameters to be estimated for the Models 1 to 5 fluctuated between 103 and 107. Moreover, sample size must be large enough to uphold SEM techniques (MacCallum, 1996). As discussed in Chapter III, models have collapsed with sample sizes less than $N = 150$ (Gerbing & Anderson, 1992).

Due to the RMSEA confidence intervals and marginally better fit indices, Model 1 and Model 2 were conceived to be the most viable models and were chosen for closer investigation. Table 5.3. shows the standardised parameter estimates for both models. The table shows the two emotional intelligence (EI) factors significantly predicted the two transformational leadership (TL) variables. However, associations between the two areas were stronger when EI-Perception and EI-Management were subsumed within a higher order factor (Model 2). While all paths between EI and TL were significant, results from Model 1 showed that EI-Perception was more influential than EI-Management in affecting TL-Inspiring Influence. However, EI-Management had a stronger relationship with TL-Concern/Behaviour when placed in the same model as EI-Perception.

For both models, the effect of the two TL factors differed in respect to Trust in Manager and Trust in Organisation. TL-Inspiring Influence significantly influenced Trust in Organisation, while TL-Concern/Behaviour had a significant impact on Trust in Manager.

Against expectations, the inverse relationships were not significant; TL-Communication did not proportionally affect Trust in Organisation, and TL-Inspiring Influence did not significantly affect Trust in Manager.

In addition, the two trust factors had differential effects on the proposed outcomes in both models. Trust in Manager did not significantly influence Change Cynicism nor Intention to Leave, while Trust in Organisation had relatively strong relationships with both. This suggested that the paths between Trust in Manager and these outcomes were redundant. Recall that Model 4 (Figure 5.4.) had no paths between Trust in Manager and either outcome; only Trust in Organisation was posited to proportionally affect Change Cynicism and Intention to Leave. However, fit indices for Model 1 and 2 were better compared to Model 4. As such, the model was not respecified at this stage.

Table 5.3.

Standardised Path Estimates for Model 1 and Model 2 (Sample 1, n = 448)

Parameter	Estimate	S.E.	C.R.	Estimate	S.E.	C.R.
		Model 1			Model 2	
EI-Perception → TL Inspiring Influence	.214	.074	2.350[*]			
EI-Management → TL Inspiring Influence	.463	.102	4.859[**]			
EI-Management → TL Concern/Behaviour	.136	.160	1.974[*]			
EI-Perception → TL Concern/Behaviour	.440	.058	6.795[**]			
Higher Order EI→ TL Inspiring Influence				.673	.069	11.556[**]
Higher Order EI→ TL Concern/Behaviour				.636	.075	11.061[**]
Higher Order EI → EI-Management				1.00	Fixed Value	
Higher Order EI → EI-Perception				.896	.082	16.360[**]
TL Inspiring Influence → TL Concern/Bhvr	.439	.052	9.286[**]	.360	.055	7.237[**]
TL Inspiring Influence → Trust in Manager	.038	.038	.488	.040	.038	.518
TL Concern/Bhvr → Trust in Manager	.608	.047	5.748[**]	.606	.046	5.736[**]
TL Inspiring Influence → Trust in Org	.336	.090	4.154[**]	.350	.091	4.314[**]
TL Concern/Bhvr → Trust in Org	.040	.089	-.459	-.055	.088	-.629
Trust in Manager → Trust in Org	.490	.182	6.157[**]	.492	.183	6.171[**]
Trust in Org → Change Cynicism	-.695	.076	-10.477[**]	-.695	.076	-10.477[**]
Trust in Manager → Change Cynicism	.053	.150	.930	.053	.150	.930
Trust in Org → Intent to Leave	-.460	.124	-5.442[**]	-.460	.124	-5.442[**]

Trust in Manager → Intent to Leave	.087	.201	1.460	.087	.201	1.460
Change Cynicism → Intent to Leave	.234	.083	3.597**	.234	.083	3.597**

Note: S.E. = Standard error of regression weight; C.R. = Critical ratio for regression weight; Path significant at **$p<.01$, *$p<.05$

As a whole, most of the hypothesised path estimates were significant for both Model 1 and Model 2. Yet some results ran contrary to hypotheses. All nonsignificant findings were comparable across models. Indeed, there was an absence of major differences between the two models in terms of model fit and patterns of parameter estimates. Other considerations had to be taken into account when electing the definitive structure.

The parsimony principle could dictate that in this situation, the model with the lesser number of parameters should be chosen, or in this case, Model 2 (Kline, 2005). Yet the difference in complexity between the two models was arguably negligible, only 1 parameter and 1 degree of freedom. Given the small differences between the models, Model 1 (Figure 5.1) was chosen as the final representation. This model gained precedence for a few reasons. Ultimately, it was the originally hypothesised model with strong theoretical and conceptual backing. Compared to Model 2, it gave more information about the disparate relationships between dimensions of EI and transformational leadership and had slightly better RMSEA and χ2 (NC) values.

Model Respecification

In the next stage, the model was trimmed of its four nonsignificant paths in sequential order. Chi square difference tests were calculated to compare the fit of the respecified model after each item was removed, and results for this analysis are displayed in

Table 5.4. The removal of the non-significant paths had a negligible effect on the fit of the model. Indeed, deleting all four paths did not effect a significant improved change in chi-square relative to the original, with $\Delta\chi^2$ = 3.46, 4 df, p >0.05. At this stage, because respecification procedures based purely on empirical data are controversial, and considering no significant gains were to be made by model respecification, the originally hypothesised model was used for the remaining analyses.

Table 5.4.

Model Respecification: Comparative Fit Statistics

	Comp Model	χ^2 (NC)	df	RMSEA (CI)	CFI	TLI	$\Delta\chi^2$	Δ df
Model 1 Hypothesised Model, Figure 5.1.		454.742 (1.76)	259	.041 (.035-.047)	.98	.97	-	-
a. Remove TLII→MTst	*Model 1*	454.975 (1.75)	260	.041 (.035-.047)	.98	.97	.233[ns]	1
b. Remove TLII→MTst, TLCB →OTst	*Model 1*	455.194 (1.74)	261	.041 (.035-.047)	.98	.97	.452[ns]	2
c. Remove TLII→MTst, TLCB →OTst MTst →Change Cyn	*Model 1*	456.069 (1.74)	262	.041 (.035-.047)	.98	.98	1.37[ns]	3
d. Remove TLII→MTst, TLCB →OTst MTst →Change Cyn MTst →Intent to Leave	*Model 1*	458.202 (2.02)	263	041 (.035-.047)	.98	.98	3.46[ns]	4

Note: NC = Normed Chi Square, RMSEA = Root Mean Square Error of Approximation, CI = Confidence Interval, CFI = Comparative Fit Index, TLI = Tucker-Lewis Index, [ns] = non-significant

Direct Effects of EI

Model 1 hypothesised that a leader's EI impacted on employee change cynicism and intention to leave through relationships with transformational leadership and trust. To further examine relationships within the preferred model, the next step was to test if EI was indeed mediated. This was achieved by adding additional direct effects and then fixing other paths where required (Bollen, 1989). As nested models, χ^2 difference tests were computed between each competing model and Model 1 to test for effects of mediation.

The dotted arrowed lines in Figure 5.6. represent four direct effects that were added to Model 1. This was the first comparison model for the purposes of mediation testing (Bollen, 1989). These effects stretch from both EI variables to change cynicism and intention to leave. The first step in the analysis involved freely estimating all paths, including the new EI effects. Step two involved comparing these results to the proposed model where the new paths were constrained to zero (Model 1, or the 'mediating model'). In the third step, the paths between EI and TLII, and between EI and TLCB, were fixed to zero (Model B). This constrained the influence of transformational leadership and tested if EI influenced change cynicism and intent to leave through trust alone. In the fourth step, the paths from the EI factors to the TL variables were fixed to zero, as were the paths from the TL factors to both trust in organisation and trust in manager. The paths between TLII and TLC and between trust in manager and trust in organisation, were also constrained to equal zero at this stage (Model

C). This tested whether EI influenced CC and TL directly without being mediated by either
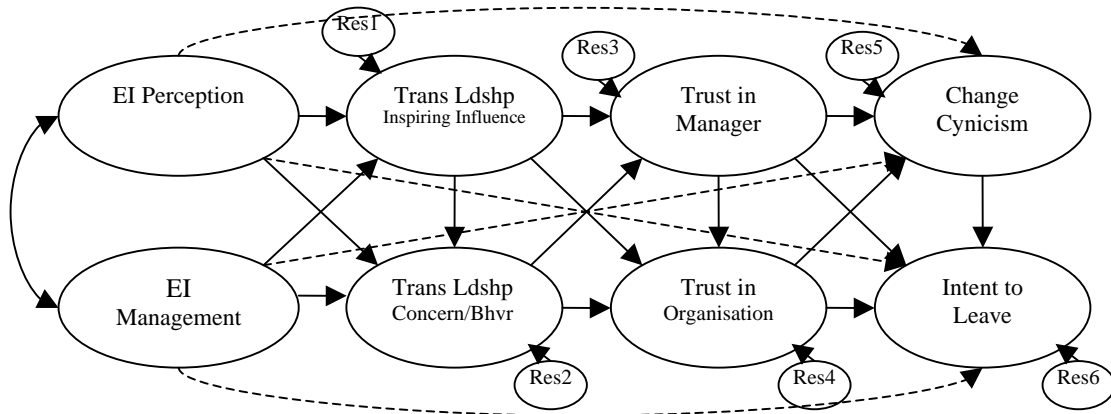
transformational leadership or trust.

Figure 5.6. *Baseline model (Model A) testing direct effects of EI on CC and IL*

An alternative baseline model (Model D, Figure 5.7.) was generated to test if EI

directly influenced both trust in organisation and trust in manager. Again, all paths were

freely estimated before comparing the results to a model where the new paths were

constrained to zero (Model 1). In a final step, paths between EI and TL, TL and trust, and

TLII and TLC, were set to zero, while the new paths remained freely estimated. This was to

test if EI directly influenced trust in manager and trust in organisation without being mediated

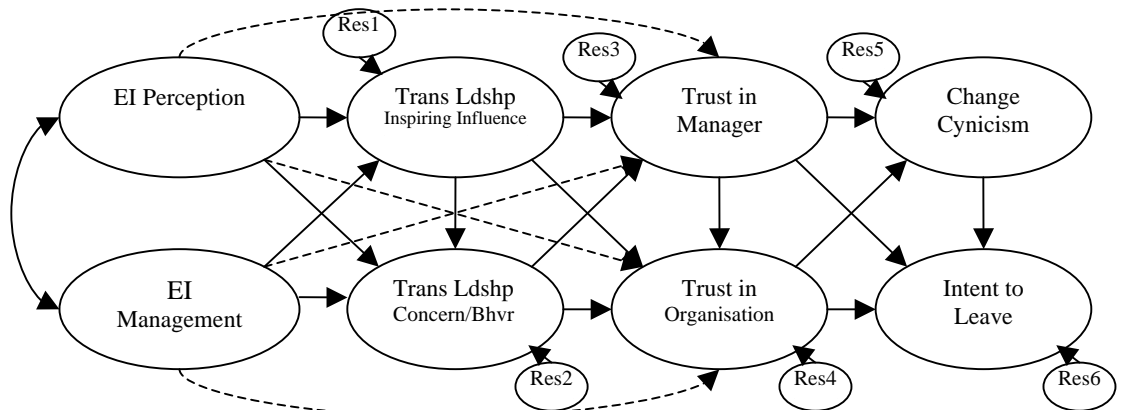by transformational leadership (Model E).

Figure 5.7. *Baseline model (Model E) testing direct effects of EI on trust factors*

Table 5.5. displays the results from the various tests. Adding four direct effects- from the EI factors to change cynicism and intention to leave (Model A)- did not result in a better-fitting model than the hypothesised mediating model where the same direct effects were set to equal zero (Model 1). Constraining the relationship of EI with both transformational leadership (Model B) and trust factors (Model C) led to significantly inferior fits compared to results for the proposed model. Adding four direct effects from the EI factors to Trust in Organisation and Trust in Manager (Model D) also did not result in a better-fitting model than the hypothesised mediating model, which set these paths to zero (Model 1). The results also demonstrated that the 'trust' direct effects model, with no mediation of EI by transformational leadership, provided a comparatively poorer fit to the data. Overall, the findings support the proposed mediating effects in the hypothesised model.

Table 5.5.

Testing for Direct EI Effects: Analysis of Competing Models (Sample 1, Wave 1, n = 448)

	Comp. Model	$\chi 2$ (NC)	df	RMSEA (CI)	CFI	TLI	$\Delta \chi 2$	Δ df
Direct Effects of EI on CC and IL								
Model A Model 1 with Direct Paths from EIP→CC, EIP→IL, EM→CC, EM→TI	-	451.131 (1.77)	255	.041 (.035-.048)	.98	.97	-	-
Model 1 Proposed Mediating Model Additional Direct EI Paths set to O	*Model A*	454.742 (1.76)	259	.041 (.035- .047)	.98	.97	3.611 [ns]	4
Model B Model A with EI→TL Paths set to O	*Model A*	849.919 (3.28)	259	.071 (.067 - .076)	.93	.92	398.785[**]	4
Model C Model A with EI→TL Paths and TL→Trust Paths, TLII→TLC, MT→ OT set to O	*Model A*	1560.50 (5.88)	265	.105 (.098 - .109)	.85	.83	1109.369[**]	10
Direct Effects of EI on Trust								
Model D Model 1 with Direct Paths from EIP→OT,	-	447.077 (1.75)	255	.041 (.035- .047)			-	-

EIP→MT, EM→OT, EM→MT								
Model 1 Proposed Mediating Model Additional Direct EI Paths set to O	*Model D*	454.742 (1.76)	259	.041 (.035- .047)	.98	.97	7.665 ns	4
Model E Model D with EI→TL Paths and TL→Trust Paths, TLII→TLC, MT→ OT set to O	*Model D*	579.703 (2.23)	265	.052 (.047 - .058)	.96	.95	132.626**	10

*NC = Normed Chi Square, RMSEA = Root Mean Square Error of Approximation, CI = Confidence Interval, CFI = Compartitive Fit Index, TLI = Tucker-Lewis Index, Δ χ2 = Change in Chi-Square, ns = not significant, **significantly different at $p<.01$

Invariance Analysis

The next stage involved applying Model 1 to an independent sample to assess structural invariance across two disparate groups. All results are contained in Table 5.4. As a preliminary measure, Model 1 was tested independently using Sample 2 from Organisation B ($n = 329$). Obtained values for the Normed Chi-Square (NC = 1.93), Comparative Fit Index (CFI = .95), Tucker Lewis Index (TLI = .95) and Root Mean Square Error of Approximation (RMSEA = 0.049) all fell within 'close-fit' point estimate levels. As the RMSEA confidence intervals were bestride 0.05, neither the 'close-fit' nor 'not-close' fit hypotheses could be rejected (MacCallum et al, 1996). Overall, the findings indicated that the model was well-fitting to the Sample 2 data. Further support for this finding came from simultaneously testing the model on Sample 1 and Sample 2 to form a baseline comparison for invariance. Table 5.6. shows that the resultant RMSEA confidence interval was below 0.050, the CFI and TFI values were 0.95, and the NC statistic was 2.06. Each of these values indicated that the baseline model was a good fit, and suggested that the model behaved consistently across the two groups. Further invariance testing could then proceed.

Equality restraints were imposed on sequential nested models, with chi-square values judged against the baseline model. Restraining factor loadings to be equal across the two

groups did not effect a significant change in chi-square relative to the baseline model, with

$\Delta\chi^2$ = 4.65, 17 df, $p > .05$. Likewise, when both factor loadings and path coefficients were

constricted to equal, the change in chi-square was not significant compared with the baseline,

$\Delta\chi^2$ = 10.218, 32 df, $p > .05$. Next, the factor loadings, path coefficients and factor variances

were constrained to be equal. Again, this restriction did not lead to a significant change in chi-

square, $\Delta\chi^2$ = 22.963, 40 df, $p > .05$. Finally, in maintaining all previously imposed equality

restraints while also constraining the lone factor covariance, the change in chi-square was

once more not significant, $\Delta\chi^2$ = 23.735, 41 df, $p > .05$. Table 5.6. shows that fit indices for

each multi-group model were situated within recognised levels of close-fit. The invariance

testing provided solid evidence that the proposed structural relations generalised from the

public sector employee sample to the private sector sample.

Table 5.6.

Invariance Testing of Structural Model (Model 1) (Sample 1, n = 448; Sample 2, n = 339)

	Comparative Model	χ^2 (NC)	df	RMSEA (CI)	CFI	TLI	$\Delta\chi^2$	Δ df
1. Single Group Analysis (Sample 2)	-	501.138 (1.93)	259	.049 (.045-.055)	.95	.95	-	-
2. Baseline (2 Groups)	-	1065.372 (2.06)	518	.043 (.039-.047)	.95	.95	-	-
3. Factor Loadings Equal	*2. Baseline*	1070.028 (2.00)	535	.042 (.039-.047)	.95	.95	4.65[ns]	17
4. Factor Loadings, Factor Paths Equal	*2. Baseline*	1075.590 (1.96)	550	.041 (.037-.045)	.96	.95	10.218[ns]	32
5. Factor Loadings, Factor Paths, and Factor Variances	*2. Baseline*	1088.335 (1.95)	558	.041 (.35-.044)	.96	.95	22.963[ns]	40

	Comparative Model	χ2 (NC)	df	RMSEA (CI)	CFI	TLI	Δ χ2	Δ df
Equal 6. Factor Loadings, Factor Paths, Factor Variances, Covariances Equal	*2. Baseline*	1089.107 (1.95)	559	041 (.35-.044)	.96	.95	23.735 [ns]	41

*NC = Normed Chi Square, RMSEA = Root Mean Square Error of Approximation, CI = Confidence Interval, CFI = Comparative Fit Index, TLI = Tucker-Lewis Index, Δ χ2 = Change in Chi-Square, ns = not significant

As a complementary analysis, Sample 2 was split into an Australian employee sub-sample ($n = 142$) and a North American sub-sample ($n = 196$) to test for differences in model fit across nationality. A full restrictive model was imposed, where factor loadings, path coefficients, factor variances and factor covariances were constrained to be equal. This was compared with a baseline model tested on both groups with no equality restrictions. Results are displayed in Table 5.5. Imposing these constraints did not effect a significant change in chi-square relative to the baseline model, with $\Delta\chi^2 = 32.621$, 41 df, $p > .05$. The fit indices for the models were all acceptable, with RMSEA values and confidence intervals suggesting a good fit to the data ($< .050$). Overall, the analyses supported the generalisability of the structural model across the Australian and North American employees.

Table 5.7.

Cross-National Sample 2 Structural Invariance Analyses (Australian, n = 142; North American, n = 196)

	Comparative Model	χ2 (NC)	df	RMSEA (CI)	CFI	TLI	Δ χ2	Δ df
Model 1 Baseline 2 Groups	-	879.167 (1.70)	518	.045 (.039-.049)	.95	.94	-	-
Factor Loadings, Path Coefficients, Factor Variances and Covariances Equal	*Model 1 Baseline*	911.788 (1.63)	559	.043 (.35-.45)	.95	.94	32.621 [ns]	41

*NC= Normed Chi Square, RMSEA = Root Mean Square Error of Approximation, CI = Confidence Interval, CFI = Compartitive Fit Index, TLI = Tucker-Lewis Index, Δ χ2 = Change in Chi-Square, ns = not significant

A supplementary invariance analysis was performed to test if structural relations differed according to 'propensity towards trust' levels. Sample 1 (Wave 1) was selected for the analysis as it had the largest sample size. Using the mean Dispositional Trust score ($M = 5.5375$), the group was split into a 'higher than average' Dispositional Trust sub-sample ($M = > 5.5375$ to 7.0, $n = 285$) and a 'lower than average' Dispositional Trust group ($M = 0$ to 5.53749, $n = 163$). Factor loadings, path coefficients, factor variances and factor covariances were constrained to be equal and then weighed against a baseline model with no equality restrictions. Results are displayed in Table 5.8. Results suggested that the structural paths were not significantly affected by employees having higher or lower than average levels of dispositional trust. Imposing the most restrictive equality constraints did not effect a significant change in chi-square relative to the baseline model, with $\Delta\chi^2 = 55.12$, 41 df, $p > .05$. The fit indices for the models were suggestive of a good fit to the data. RMSEA values were less than 0.050, TLI and CFI estimates were above 0.95, and the NC values were less than 2.

Table 5.8.

Structural Invariance Analyses for Variation in Dispositional Trust (DT) (Sample 1, Wave 1, High DT, n = 285; Low DT, n = 163)

	Comparative Model	χ^2 (NC)	df	RMSEA (CI)	CFI	TLI	$\Delta \chi^2$	Δ df
Model 1 Baseline 2 Groups	-	823.231 (1.59)	518	.036 (.034-.043)	.97	.96	-	-
Factor Loadings, Path Coefficients, Factor Variances and Covariances Equal	*Model 1 Baseline*	878.346 (1.57)	559	.036 (.35-.45)	.96	.96	55.12 [ns]	41

*NC = Normed Chi Square, RMSEA = Root Mean Square Error of Approximation, CI = Confidence Interval, CFI = Comparative Fit Index, TLI = Tucker-Lewis Index, $\Delta \chi^2$ = Change in Chi-Square, ns = not significant

The power of the three invariance tests (a. Sample 1 and Sample 2, b. Australian and North American, c. High Dispositional Trust and Low Dispositional Trust) was determined via RMSEA confidence intervals (MacCallum et al, 1996). The entire interval for each model was below 0.050. According to the table in MacCallum et al (1996, p. 142), the level of power was subsequently 1.0 for all models with *df* ranging from 259 to 559, and *Ns* between 163 and $N = 448$. The high power estimate for determining 'close' and 'not-close' models provided support for the validity of findings.

Next, necessary sample sizes for a power of 0.80 were determined for all tests of invariance. The range for required sample sizes was calculated to be between $N = 72$ and $N = 104$ for the assorted models. As such, results suggested that the number of subjects was sufficient to detect false hypotheses.

Discussion

Using data from two dissimilar, cross-sectional samples, the present research identified a well fitting model of structural relationships between factors of leader emotional intelligence, transformational leadership, employee trust, change cynicism and intention to leave. Consistent with theory, most of the study hypotheses were sustained, although there were a few counterintuitive findings. The results outlined in this chapter add significantly to the literature in a number of ways that may be of assistance to both theorists and practitioners. While discussed in more detail within the conclusions chapter of this thesis (Chapter VIII), some of the major implications are briefly reviewed.

Firstly, it was found that a leader's EI influenced transformational leadership. This was consistent with established conceptual theory and the limited cross-sectional empirical research in the area (Barling et al., 2000; Sosik & Megerian; Gardner & Stough, 2002). However, in opposition to all other research linking the two concepts, the current study was the first to use observer ratings for both EI and transformational leadership. It appears that the relationship between these two variables is relatively consistent across different scale forms.

Secondly, it was shown that transformational leadership (TL) was an antecedent of the level of trust amongst employees. These findings mirrored previous research that has suggested that most transformational leadership practices are positively associated with the perceived trustworthiness of the leader (Butler & Cantrell, 1999; Connell et al., 2003; Ferres et al., 2005; Gillespie & Mann, 2004; Jung & Avolio, 2000; Pillai et al., 1999; Posner & Kouzes, 1988). However, the results showed that the influence of transformational leadership differed across its two subdimensions. For example, there was no significant relationship between a manager who had TL-inspiring influence and trust in them as a leader, yet TL-inspiring influence shared a positive association with trust in the organisation as an entity. In constrast, a manager who was judged as showing TL-concern/behaviour inspired greater trust in their leadership, yet this TL factor did not impact on trust in the organisation. One reason for the dichotomous results could be that leadership behaviours related to vision are not related to trust in leadership, which was also a finding of Podsakoff et al. (1996). Another explanation is that each subdimension of TL is indeed related to both levels of trust, yet the study design and SEM techniques facilitated non-significant effects. Each of these explanations is discussed more fully within Chapter VIII.

The findings indicated that an employee who trusted their manager was more likely to trust the organisation. Sequentially, this seemed to lead to reduced change cynicism and lowered intentions to withdraw from the organisation. However, trust in a manager did not play a significant role in employees' change cynicism or intention to leave. This was likely due to the inclusion of two levels of trust within the same structural model. While the relationship between trust and change cynicism has not been studied empirically, the findings concerning trust in a manager and intention to leave were in direct opposition to previous research which has found a strong negative relationship between the two variables (Cunningham, & MacGregor, 2000; Ferres et al., 2005, 2002; Mishra, & Morrisey, 1990). The current finding that an employee's trust in an organisation had a negative relationship with their intentions to is, however, consistent with past studies (Costigan et al., 1998; Tan & Tan, 2000).

Fourth, the results inform knowledge concerning the emergent research area of change cynicism. Social exchange theory (Blau, 1964) may help explain why trust in an organisation is associated with reduced cynicism towards change. Exchange relationships are characterised by reciprocity; if employees believe that they work within a trustworthy environment, then they may counter with less contemptuous attitudes about change attempts. This result was also congruent with results from Albrecht and Travaglione (2003) who found that trust in senior management effectively impacted on employee change cynicism. In addition, the finding of a positive structural relationship between change cynicism and intention to leave is novel to existing empirical work, and underscores change cynicism as an important variable of interest.

The results also indicated that emotional intelligence and leadership attributes can be represented via second-order models. The emotional intelligence higher-order factor included both the emotion perception and emotion management dimensions. The existence of this factor is consistent with the view of Mayer et al, (2000a; 2003) who stated that EI can be represented as a two-crested hierarchy. At the peak of the hierarchy is an overall EI factor that can be further divided into secondary factors, including emotion perception and emotion management. Further backing for an alternate higher-order factor came from a second model where EI was placed with transformational leadership to effectively delineate a general leadership attributes factor. The upcoming conclusions chapter describes the implications of this latter finding in terms of supporting a strong link between EI and transformational leadership.

Apart from the aforementioned non-significant paths, the general structure of the hypothesised model was supported using detailed structural modelling and tests of mediation. In summary, leader emotional intelligence was associated with reduced employee change cynicism and intentions to leave via greater transformational leadership and increased organisational trust. This is the basic premise that underlines the major objective of the present thesis. The generalisability of this finding was maintained through several tests of invariance. The hypothesised model was supported across public and private sector employees and after accounting for cross-national differences and divergence in dispositional trust levels. From a practical perspective, managers and practitioners hoping to implement successful change programs and reduce the costs of voluntary turnover may look to trust-

building initiatives. The results of this study imply that a major focus on trust development should be leadership programs that focus on soft-skills. That is, training or coaching should centre on building emotional abilities in perception and management, in addition to engendering transformational behaviours such as projecting a vision, building respect and supporting employees.

Despite the use of multiple samples and control variables, the findings are limited at this stage of the research due to the cross-sectional nature of the data. Additional research is necessary to determine the reliability of these results over time. In response, the next chapter (Chapter VI) deals with a longitudinal analysis of the structural model.

CHAPTER VI

STUDY 1: EMPLOYEE SURVEY LONGITUDINAL MODEL

Introduction

The results presented in Chapter V supported a structural cross-sectional model of the emergent employee survey variables. Leader emotional intelligence (EI), characterised by the ability to perceive and manage emotion, significantly influenced transformational leadership. Evidence was also obtained to support that transformational concern and behaviour produced trust in a manager, and that a leader with inspiring influence prompted trust in an organisation. Trust in an organisation was subsequently found to be central to employees' change attitudes and withdrawal intentions. These relationships were evident after controlling for dispositional trust, and were cross-validated across employees from different organisations and from two different countries. In this chapter, the aforesaid relationships are tested across time. Specifically, analyses are carried out to establish whether the structural model is supported using a longitudinal sample.

Organisational studies using a longitudinal design are atypical, and even rarer within the EI domain. As stated in Chapter II, the majority of studies into EI in the workplace have used cross-sectional data. Generally, the few longitudinal EI studies relevant to organisations have examined the test-retest reliability of measurement instruments (e.g. Palmer et al., 2003a; Schutte et al., 1998) or reported on the efficacy of an EI training and development program (Dulweicz, et al., 2003; Dulweicz & Higgs, 2004; Cherniss & Caplan, 2001). In terms of the former, the test-retest reliability of a measure is a central psychometric property to consider when deciding on an instrument for use in research or practice. Good test-retest

reliability means that people can be reasonably confident that mood states do not seriously influence the way individuals complete a questionnaire or perform on a test. For example, Palmer and Stough (2003a) found that the Swinburne University Emotional Intelligence Test (SUEIT) had high test retest reliability over a one month period, with stability coefficients ranging from a low of .82 to .92. However, the SUEIT is an Australian test, not yet widely implemented in the international literature. Indeed, Tett et al (2005) recently argued that peer-reviewed journal evidence for test-retest reliability is lacking for all *major* EI self-report instruments except for the Schutte Self-Report Inventory (Schutte et al., 1998). Schutte et al. (1998) reported temporal consistency of .78, which is well within accepted standards (Anastasi & Urbina, 1997). Similarly good test-retest reliability (over .70) has been obtained for transformational leadership measures within variations of the Multi-Factorial Leadership questionnaire (Bass, 1999). Information is unavailable for the temporal stability of the measures of trust, change cynicism and intention to leave measures adopted for the current employee survey. A longitudinal analysis of all measures will be a sizeable additional to the literature.

Along with repeated-design EI research, the number of longitudinal studies involving the other variables of interest is also small. None of the relationships in the currently supported structural model have been tested over time. The few longitudinal studies that have examined associated organisational relationships include Dvir and Shamir's (2003) research predicting transformational leadership by followers' development level, Yammarino et al's (1993) study of transformational leadership predicting appraised performance, Robinson's (1996) examination of the relationship between organisational trust and psychological contract violation, and Mayer and Davis's (1999) study linking trust to procedural justice.

The lack of repeated designs is regrettable considering that longitudinal research offers several advantages to the researcher who implements structural equations modelling. First, the effects of common method variance are reduced because data are drawn from the same participants at different points in time (Spector, Chen & O'Connell, 2000). Second, although longitudinal analyses do not confirm causal relationships, analyses over time do lend more weight to inferences drawn about the direction of relationships within a model (Anderson & Gerbing, 1988). Third, in comparison to multiple regression, structural modeling over time allows for the concurrent assessment of direct and indirect effects among a set of variables while explicitly taking measurement error into account (Mayer & Davis, 1999). Likewise, time-series structural equations modelling may also be used to assess measurement equivalence across time, while simultaneously assessing any changes in structural relationships (Mayer & Davis, 1999).

Taris (2000) notes that the issue of invariance across time has often been addressed via Golembiewski et al's (1976, cited in Taris, 2000) three types of change. 'Alpha change' is the first of these concepts and involves changes in the level of a variable across time when the meaning of the construct has remained stable. For example, in the current study, alpha differences in EI ratings across time would represent an upward or downward transfer on a constant EI metric. Although ratings of a leader's EI may change, a person's actual view of the EI concept remains the same from one point to the next. Alpha change can be tested via methods such as analysis of variance or a simple t-test (Taris, 2000). In contrast, 'Beta change' occurs when a person reconstitutes the meaning of a measurement metric across time. With beta change, a change in the perspective of the respondent is involved so that they adjust

how rating scales (e.g. Likert intervals) are understood. The third concept is that of 'gamma change'. This involves a redefinition of some domain or a quantum shift in the conceptualisation of a construct. That is, a person may judge EI differently after a second round of surveying. Both beta and gamma change signify a lack of structural stability, and can be assessed via structural equations modelling (Taris, 2000). The stability of a longitudinal structural model can be substantiated by a lack of alpha, beta and gamma change, and this would allow for more justifiable conclusions about the relationships presented in Chapter V.

The Longitudinal Model

Figure 6.1 presents the proposed longitudinal model. The relationships within this model are representative of the structural model (refer to Figure 5.1.) at two points in time. Horizontal paths are used to delineate a relationship between each Time 1 variable and its corresponding Time 2 variable. These paths were outlined because there were no *significant* leadership development or change initiatives within the sample organisation between the two survey distributions. Unless noteworthy personal events affected experiences at work and leader-employee relationships, it was reasoned that an employee's initial view of their leader's emotional intelligence and transformational leadership style was likely to remain relatively static, as was their levels of trust, change cynicism and intention to leave. While there is limited empirical evidence of the stability of these constructs over time, with regards to trust and cynicism about change, there is some evidence to suggest that attitudes in general have the capability to endure over long periods (Bagozzi, Gopinath & Nyer, 1999). However, Taris (2000) warned that longitudinal research has sometimes demonstrated that "phenomenological processes may lead people to constitute and reconstitute their environment and the events that occurred to them" (p. 37). In line with this perspective,

Worchel (1979) noted that trust, for one, is more easily lost than it is attained. Despite these

views the longitudinal model denotes that the constructs will remain relatively stable given

that many attitudes remain invariant.

The non-horizontal paths displayed in Figure 6.1 represent the structural relationships

between the Time 1 variables and Time 2 variables. Paths in the model indicate that the EI

scores at Time 1 influence ratings of transformational leadership at Time 2. Another path

signifies that 'Transformational Leadership-Concern/Behaviour' at Time 1 influences 'Trust

in Manager' at Time 2. The model reflects the remaining cross-sectional relationships (argued
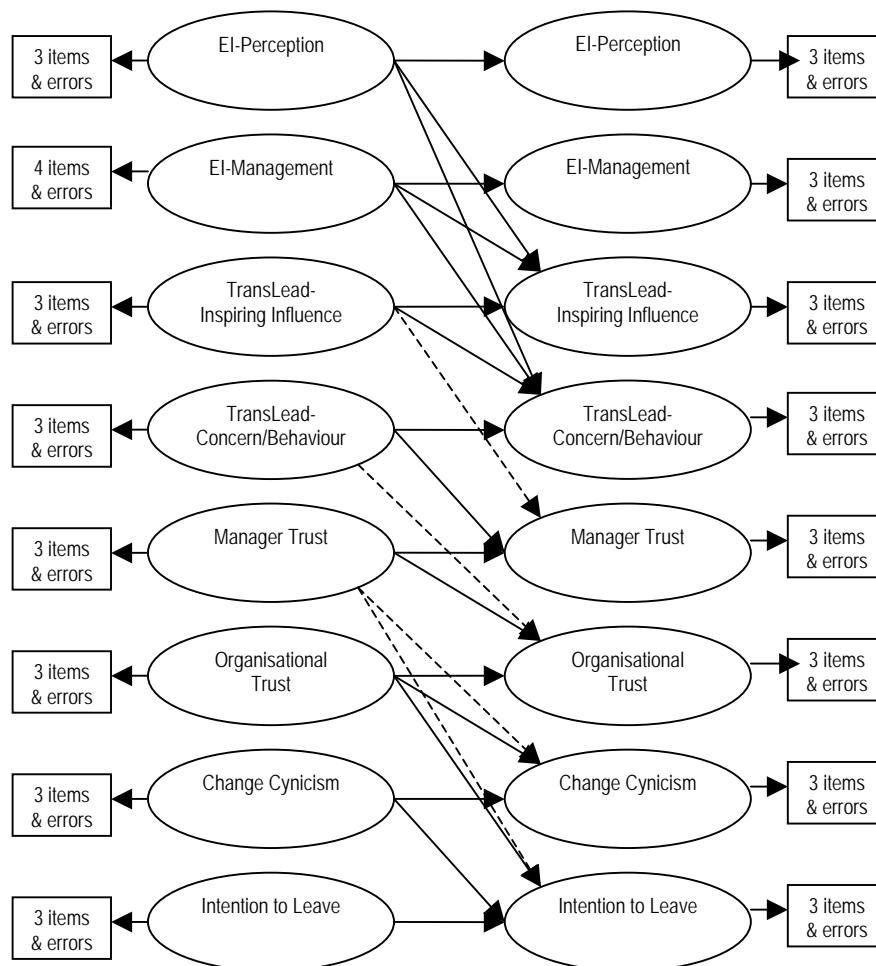
in Chapter V) in a similar fashion.

Figure 6.1. Simplified longitudinal model of study variables (dotted
lines denote proposed non-significant paths)

There are three hypotheses for the analysis of the longitudinal structural model:

H6.1.   Each Time 1 construct will influence its equivalent Time 2 construct. For example, EI-Perception at Time 1 will influence EI-Perception at Time 2.

H6.2.   The significant structural relationships between the study variables found at Time 1 will generalise to Time 2.

H6.3.   The non-significant structural relationships between the study variables found at Time 1 will generalise to Time 2.

Method

Sample

The longitudinal data sample was made up of 263 employees from Sample 1 who completed the employee survey at both Time 1 ($N = 467$) and Time 2 ($N = 398$). This meant that approximately 58 per cent of the Time 2 subjects were repeat respondents, while 42 per cent were filling in the questionnaire for the first time during the second wave. Listwise deletion of cases with missing data, and the removal of one outlier with means above possible scale maximums, reduced the total number of participants to 210 Time 2 cases. This group of participants consisted of employees from an Australian state-wide public sector organisation (Organisation A). Organisation A was targeted for longitudinal research as it had a large number of employees (>1000) and because the organisation indicated its interest in repeat survey distributions.

On the Time 2 questionnaire, participants were asked if they had completed the survey that was conducted the previous year. Cases were formally matched across time via self-

nominated passwords in conjunction with reported gender and age. When two or more subjects affirmed the same password, the affected cases were matched via gender, length of tenure, age bracket, position and education level. Respondents with different supervisors were excluded from the analysis via the same method. Those which could not be indisputably matched were excluded from the analysis.

As a proportion, 50 per cent of the 465 Time 1 participants responded to the second wave of data collection. This percentage was within the higher-range longitudinal drop-out rates reported by Pedhazur and Pedhazur-Schmelkin (1991). To test for selective non-response, a MANOVA was conducted to examine differences between responders and non-responders (Taris, 2000). For each measured organisational variable and dispositional trust, no significant differences were found between the two groups (*Wilks = .987, F*(1, 446) = .66*, p > .05, effect size = .013).* The representativeness of the longitudinal sample to Sample 1 was supported by this result.

Table 3.1 (Chapter III) displayed demographic data for the longitudinal sample compared to that of Sample 1 (Wave 1) and Sample 2 (Wave 2). The longitudinal sample had comparable statistics in terms of gender, education, tenure and age. However, there were slightly less participants from Band 4 (the most senior group) in the longitudinal sample (2.5%) compared to Wave 1 (7.6%) and Wave 2 (4.6%). A MANOVA compared Band 4 means with those from the other bands. The analysis revealed no overall difference based upon position level (*Wilks = .912, F(4, 438) =1.73, p > .05, effect size = .052).*

Measures

The same twenty-five survey items used to explore the structural model were used for the analysis of the longitudinal model. A full overview of these items was given in Chapter V. They measured the following eight variables: (1) Leader EI-Perception (3 items), (2) Leader EI-Motivation (4 items), (3) Transformational Leadership Inspiring Influence (3 items), (4) Transformational Leadership Concern/Behaviour (3 items), (5) Trust in Manager (3 items), (6) Trust in Organisation (3 items), (7) Change Cynicism (Pessimism) (3 items) and (8) Intent to Leave (3 items). Chapter IV provided strong support for the validity and reliability of the items.

Analysis

The analysis advanced through various stages to examine whether the structural model outlined in Chapter V was invariant across time. First, data was vetted for outliers and non normal data. Descriptive statistics were then generated for the longitudinal sample over Time 1 and Time 2. As with previous samples, most variables were slightly non-normal, and this was adjusted by the selection of the Bollen-Stine procedure in AMOS. Next, test-retest reliability was calculated via the Intra-Class Correlation (ICC) coefficient in SPSS. Some researchers implement Pearsons correlations between Time 1 and Time 2 measures for test-retest reliability. This approach is likely to be erroneous as Pearsons is an inter-group calculation rather than an intra-group estimate (McGraw & Wong, 1996).

Another preliminary step in analysing the full longitudinal model involved implementing the AMOS multi-sample technique recommended by Byrne (2001). Initially,

the longitudinal data file was divided into two separate files, where one file represented Time

1 ($N = 210$) responses and the other contained Time 2 data (both $N = 210$). The structural

model shown as Figure 6.1. was estimated separately for each time sample. Next, the model

was estimated simultaneously across Time 1 and Time 2 data to generate a comparative

baseline model. Similar to the analysis of the cross-sectional structural model in Chapter V,

constraints were specified so that factor loadings, factor path coefficients, factor variances and

covariances between the exogenous variables were, in turn, restrained to be equal across the

two groups (Byrne, 2001). Given any difference in degrees of freedom, if the χ^2 change was

not significantly different from the baseline model at every phase, results implied the

structural model and its measurement components were invariant across both time samples.

The full longitudinal model was then specified using LISREL. Due to the complicated

diagram of the complete longitudinal model, in this instance, LISREL syntax was chosen as

the more straightforward option compared to implementing the graphical interface within

AMOS.

Figure 6.1. shows a simplified version of the longitudinal model. In its complete form,

the model would also show each individual indicator and equivalent error terms for the eight

latent constructs at both time periods. Factor covariances between each exogenous (Time 1)

variable would also normally be displayed, as would correlated error variances from Time 1

to those of Time 2. For simplicity, indicators, error variances and covariances were not

included in the diagram.

The specification of the full longitudinal model was influenced by several published

sources featuring SEM longitudinal research. In a description of research using two waves of

data, Kline (2005) noted that it may be practical to correlate the residuals of the repeated

measures. As such, while not displayed in Figure 6.1., the measurement errors were set to

covary in the current study, as were factor disturbance terms as recommended by Ecob

(1987). Next, as described in Little, Schnabel, and Baumert, (2000), the measurement

parameters, or factor loadings at Time 1/Time 2 and covariances among the Time 1 factors,

were also constrained to be equal. With these specifications, the longitudinal model was

explored in the same manner as any other structural representation, with specific LISREL

coding adapted from Jaccard and Wan (1996, p. 44-53).

Consistent with the measurement and structural models from the previous two

chapters, the fit of the complete longitudinal version was appraised via various estimates. In

LISREL, a post-hoc adjustment of non-normality was made possible by implementing the

Maximum Liklihood method with an asymptotic covariance matrix. This led to the production

of the Satorra-Bentler χ^2 statistic in the LISREL output. Values up to 3 for the Normed Chi

Square (NC) statistic, and below 0.05 for the Root Mean Square Error of Approximation

(RMSEA), suggests a model is close-fitting (Mueller, 1996). RMSEA values and confidence

intervals up to 0.08 are considered to reflect a reasonable fit (Byrne, 2001). While the Tucker-

Lewis Index (TLI) is not generated by LISREL, the equivalent Non-Normed Fit Index (NNFI)

was used in its place in combination with the Comparative Fit Index (CFI) to provide alternate

incremental directories. Fit statistics over 0.95 for these later two indexes are additional

indicators of close fit, while values above 0.90 suggest adequate fit (Mueller, 1996; Byrne,

2001). The Consistent Akaike Information Criterion (CAIC) was also generated as a measure

of the model's parsimonious fit (Byrne, 2001). In sum, indices explored the full longitudinal model in terms of absolute, incremental and parsimonious fit estimates.

Joreskog (2000) emphasised that fit measures may not adequately express the quality of the model "judged by any other internal or external criteria" (p. 1). He explained that the overall fit of the model may be very good but one or more relationships might be weakly established, as judged by the squared multiple correlations. As such, the full longitudinal model was further examined by looking at the standardised path coefficients in addition to the squared multiple correlations (R^2) for each Time 2 variable. The model was supported if the hypothesised paths were found to be statistically significant, while the squared multiple correlations provided a measure of the percentage of variance explained in each Time 2 variable. For each variable, squared multiple correlations were equal to one minus the squared standardised value of the applicable disturbance terms (Tabachnick & Fidell, 2001).

RMSEA confidence intervals were then used to calculate power via MacCallum et al's (1996) power tables and criterion levels. The required sample number for a desired power level of 0.80 was also determined using the RMSEA confidence intervals and the SAS 'power analysis' program (MacCallum et al, 1996, Appendix C). Results of each of these analyses are now reported.

Results

Descriptive Statistics

Table 6.1. shows descriptive statistics for the longitudinal sample at both Time 1 and Time 2 ($N = 210$). The results showed very similar mean scores across the two survey distributions. A MANOVA supported that there was no significant difference between scores on the organisational study variables between Time 1 and Time 2 (*Wilks* = .998, *F*(1, 418) = .104, *p* > .05, *effect size* = .010).

Intra-Class Correlation (ICC) coefficients are also displayed in Table 6.1. These values showed that the scale items had high test-rest reliability, with ICCs ranging from 0.70 for EI-Management to 0.83 for Change Cynicism (Pessimism). In all, results supported the stability of the measurement indicators over time despite the 12 month interval between distributions.

Table 6.1.

Descriptive Statistics for the Longitudinal Sample at Time 1 and Time 2 (n = 210)

	Mean a	**SD**	*α*	**Mean** ab	**SD**	**ICC**
		Time 1			Time 2	
EI Perception	5.12	1.58	.92	5.04	1.66	.75*
EI Management	5.64	1.16	.87	5.57	1.29	.70*
TL Inspiring Influence	3.78	1.31	.86	3.76	1.32	.73*
TL Concern/Behaviour	3.98	1.33	.86	3.93	1.40	.78*
Trust in Organisation	5.29	1.19	.85	5.26	1.23	.80*
Trust in Manager	4.52	1.47	.92	4.47	1.43	.77*
Change Cynicism (Pessimism)	3.06	1.43	.89	3.16	1.44	.83*
Intention to Leave	2.99	1.81	.88	3.04	1.86	.76*

[a]Scale range 1 – 7 for each variable except transformational leadership scale range of 1 – 6; [b]No significant differences; α = alpha reliability at Time 1; ICC = Intra-Class Correlation coefficient; * *F* statistic significant at *p*< .05

Structural Equations Modeling

Preliminary Analysis

Table 6.2. shows the fit indices for tests of the structural model (Figure 6.1.) when the data from Time 1 and Time 2 was separated. These preliminary tests resulted in positive indices suggesting that the model was at least an adequate fit to the data at both points of time. Overall, marginally better fit statistics were acquired for Time 1 data. Obtained values for the Normed Chi-Square for both sets of data were under 2 while the Comparative Fit Index (CFI) levels were 0.95 or higher. Tucker Lewis Index (TLI) values were also 0.95 or above. Each of these point estimates signified that the model was a close fit to the data at both time intervals.

The Root Mean Square Error of Approximation (RMSEA) values for Time 1 and Time 2 fell short of the close-fit point estimate levels of 0.05, but were within levels of acceptable fit (RMSEA = 0.053 and 0.061). According to MacCallum et al. (1996), RMSEA confidence intervals for both time frames suggested that neither the 'close-fit' nor the 'not-close' fit hypothesis could be rejected. Overall, results supplied sufficient evidence to support satisfactory model fit, and further invariance testing was conducted.

Table 6.2.

Fit Statistics for the Structural Model at Time 1 (n = 210) and Time 2 (n = 210)

	χ^2 (NC)	df	RMSEA (CI)	CFI	TLI	CAIC
Time 1	413.157 (1.59)	259	.053 (.044-.063)	.98	.97	832.066
Time 2	508.363 (1.96)	259	.061 (.055-.065)	.95	.95	947.272

Note: NC = Normed Chi Square, RMSEA = Root Mean Square Error of Approximation, CI = Confidence Interval, CFI = Comparative Fit Index, TLI = Tucker-Lewis Index, CAIC = Consistent Akaike Information Criterion

Invariance Analysis

Next, the structural model was simultaneously applied to the separated Time 1 and

Time 2 data. This was achieved via the mutli-group SEM procedures for structural invariance,

as recommended by Byrne (2001). Results are displayed in Table 6.3. An analysis of the

baseline model, which tested the proposed structural paradigm on data from both time frames

concurrently, supported that the model was well-fitting over time. Table 6.3. shows that the

baseline Root Mean Square Error of Approximation value (RMSEA = .044) and RMSEA

confidence interval (0.037 – 0.049) were below 0.050, meaning that the 'not close fit'

hypothesis could be rejected (MacCallum et al., 1996). The Comparative Fit Index (CFI) and

Tucker Lewis Index (TLI) values were 0.95 and 0.94, and the Normed Chi-Square (NC)

statistic was 1.82. Each of these values signified that the baseline model was a good fit, and

indicated that the model behaved consistently across the two time frames. Constraining the

factor loadings to be equal across data from the two time frames groups did not lead to a

significant change in chi-square relative to the baseline model, with $\Delta\chi^2 = 6.489$, 17 df, $p >$

.05. When both factor loadings and path coefficients were constricted to equal, the change in

chi-square was also not significant compared with the baseline model, $\Delta\chi^2 = 11.807$, 32 df, p

$> .05$. Next, the factor loadings, path coefficients and factor variances were constrained to be

equal. Once more, this restriction did not lead to a significant change in chi-square, $\Delta\chi^2 =$

14.873, 40 df, $p > .05$. The final step maintained all previously imposed equality restraints

while also constraining the Time 1 factor covariance. Again, the change in chi-square was not

significant, $\Delta\chi^2 = 14.941$, 41 df, $p > .05$. Each multi-group model had fit estimates within

recognised levels of close-fit. Using progressively exacting equality restrictions, the proposed

structural model was well-fitting over Time 1 and Time 2 data. This led to the examination of

the complete longitudinal model (Figure 6.1.).

Table 6.3.

Invariance Testing of Structural Model over Time 1 (n = 210) and Time 2 (n = 210)

	Comparative Model	$\chi 2$ (NC)	df	RMSEA (CI)	CFI	TLI	$\Delta \chi 2$	Δ df
1. Baseline (2 Groups)	-	941.520 (1.85)	518	.044 (.037-.049)	.95	.94	-	-
3. Factor Loadings Equal	*Baseline*	948.009 (1.83)	535	.043 (.039-.049)	.95	.94	6.489^{ns}	17
4. Factor Loadings, Factor Paths Equal	*Baseline*	953.327 (1.73)	550	.042 (.037-.045)	.95	.95	11.807^{ns}	32
5. Factor Loadings, Factor Paths, and Factor Variances Equal	*Baseline*	956.393 (1.71)	558	.041 (.37-.046)	.95	.95	14.873^{ns}	40
6. Factor Loadings, Factor Paths, Factor Variances, Covariances Equal	*Baseline*	956.461 (1.71)	559	041 (.37-.046)	.95	.95	14.941^{ns}	41

*NC = Normed Chi Square, RMSEA = Root Mean Square Error of Approximation, CI = Confidence Interval, CFI = Compartitive Fit Index, TLI = Tucker-Lewis Index, $\Delta \chi 2$ = Change in Chi-Square, ns = not significant

The Complete Longitudinal Model

Fit indices for the complete longitudinal model are exhibited in Table 6.4. The NC

statistics for both the Chi Square (χ^2) and Satorra-Bentler Chi Square (SB χ^2) were below the

criterion of 3 and both the CFI and NNFI values were 0.94 and above, indicating a good fit to

the data (Byrne, 2001). Moreover, an RMSEA value of 0.053 indicated a reasonable fit,

being just above the close-fit criterion of 0.05, yet beneath the value of 0.08 indicating a

mediocre fit. The RMSEA confidence interval (0.047 – 0.058) was between the close-fit

(<0.05) and reasonable fit benchmarks (0.05 – 0.08), meaning that neither hypothesis for 'close-fit' or 'not close fit' could be rejected (MacCallum et al., 1996). The aggregated results of the various point estimates signified that the complete model provided an admissible fit to the data across time.

Table 6.4.

Fit Statistics for the Complete Longitudinal Model (n = 210)

	χ2 (NC)	df	RMSEA (CI)	CFI	NNFI	SB χ2 (NC)
Longitudinal Model	1694.510 (1.44)	1176	.053 (.047-.058)	.95	.94	1574.971 (1.34)

Note: NC = Normed Chi Square, RMSEA = Root Mean Square Error of Approximation, CI = Confidence Interval, CFI = Comparative Fit Index, NNFI = Non-Normed Fit Index; SBχ2 = Satorra-Bentler Chi Square Statistic

The standardised path coefficients for the full longitudinal analysis are illustrated within Table 6.5. The first part of the table details outcomes from the parallel paths, or from reciprocal Time 1 and Time 2 constructs. The latter section of the table shows the non-parallel paths linking relevant Time 1 variables to theoretically allied Time 2 variables.

Supporting Hypothesis 6.1., each of the parallel paths was positive and highly significant. The standardised path coefficients ranged from .331 for TL-Inspiring Influence to .751 for EI-Perception. All effect sizes could be described as medium (0.30 – 0.50) to large (> 0.50) (Kline, 2005). Once more the findings reinforced the stability of the constructs, and implemented measurement instruments, over time.

The non-parallel standardised path coefficients were not as strong as the parallel paths. However, the majority of paths were significant, affirming Hypothesis 6.2, while the four

anticipated exceptions supported Hypothesis 6.3. Both transformational leadership variables (TL-Inspiring Influence and TL-Concern Behaviour) at Time 2 were affected by the two leader emotional intelligence constructs at Time 1 (EI-Perception and EI-Management). The relationship between Time 1 TL-Inspiring Influence and Time 2 TL-Concern Behaviour was also positive and significant. Trust in Manager at Time 2 was proportionally influenced by Time 1 TL-Inspiring Influence, and Trust in Organisation (Time 2) was significantly affected by Time 1 TL-Concern and Behaviour. Both Change Cynicism (Pessimism) and Intention to Turnover at Time 2 were significantly influenced by Trust in Organisation at Time 1. Finally, Change Cynicism (Pessimism) at Time 1 was proportionally influenced by Intent to Leave at Time 2. Most of the non-parallel effect sizes could be described as small to medium, or between 0.10 and 0.50 (Kline, 2005). The largest effect sizes occurred between Trust in Organisation (Time 1) and Change Cynicism (Time 2), and among TL-Concern/Behaviour (Time 1) and Trust in Manager (Time 2).

The four non-significant path coefficients in the longitudinal model were the same as those delineated as non-significant within the structural model analysis (Chapter V). Trust in Manager at Time 1 did not significantly affect Change Cynicism (Pessimism) or Intent to Leave at Time 2. TL-Inspiring Influence at Time 1 was not significantly related to Time 2 Trust in Manager within the longitudinal model. Likewise, TL-Concern/Behaviour at Time 1 did not significantly impact on Trust in Organisation at Time 2.

Table 6.5.

Standardised Path Coefficients for Longitudinal Model (n = 210)

Time 1		Time 2	Stand. Coeff.	Sig.
Parallel Paths				
EI-Perception	→	EI-Perception	.511	$p < .01$
EI-Management	→	EI-Management	.404	$p < .01$
TL-Inspiring Influence	→	TL-Inspiring Influence	.431	$p < .01$
TL-Concern Behaviour	→	TL- Concern Behaviour	.521	$p < .01$
Trust in Manager	→	Trust in Manager	.534	$p < .01$
Trust in Organisation	→	Trust in Organisation	.593	$p < .01$
Change Cynicism (Pessimism)	→	Change Cynicism (Pessimism)	.627	$p < .01$
Intention to Leave	→	Intention to Leave	.527	$p < .01$
Non-Parallel Paths				
EI-Perception	→	TL Inspiring Influence	.180	$p < .05$
EI-Management	→	TL Inspiring Influence	.212	$p < .01$
EI-Management	→	TL Concern/Behaviour	.101	$p < .05$
EI-Perception	→	TL Concern/Behaviour	.182	$p < .01$
TL Inspiring Influence	→	TL Concern/Bhvr	.197	$p < .01$
TL Inspiring Influence	→	Trust in Manager	.019	*ns*
TL Concern/Bhvr	→	Trust in Manager	.253	$p < .01$
TL Inspiring Influence	→	Trust in Org	.194	$p < .01$
TL Concern/Bhvr	→	Trust in Org	.008	*ns*
Trust in Manager	→	Trust in Org	.210	$p < .01$
Trust in Org	→	Change Cynicism	-.250	$p < .01$
Trust in Manager	→	Change Cynicism	.004	*ns*
Trust in Org	→	Intent to Leave	-.220	$p < .01$
Trust in Manager	→	Intent to Leave	.001	*ns*
Change Cynicism	→	Intent to Leave	-.150	$p < .05$

Next, the amount of variance explained (R^2) in each Time 2 dependant was examined. The findings outlined in Table 6.6. show that a sizeable percentage of the variance for each Time 2 variable was explained by Time 1 variables. Each of the Time 2 EI variables were explained singularly their corresponding Time 1 variable. EI-Perception at Time 1 explained 56.4% of the variance of the same construct at Time 2. EI-Management at Time 1 likewise accounted for 49.6% of the variance in Time 2 EI-Management.

Table 6.6.

Percentage of Variance Explained (R^2) in each Time 2 Variable by Time 1 Variables

Time 2 Variable	Time 1 Variable/s	R^2 (%)**
EI-Perception (EIP)	EIP	56.4
EI-Management (EIM)	EIM	49.6
TL-Inspiring Influence (TLII)	TLII, EIP, EIM	52.5
TL-Concern Behaviour (TLCB)	TLCB, TLII, EIP, EIM	73.0
Trust in Manager (TM)	TM, TLII, TLCB	79.5
Trust in Organisation (TO)	TO, TM, TLII, TLCB	80.2
Change Cynicism (Pessimism) (CC)	CC, TO, TM	76.9
Intention to Leave (IL)	IL, TO, TM	75.7

Note: **All F values significant at $p < 0.01$

The remaining Time 2 variables were explained by a combination of their equivalent Time 1 variable plus applicable Time 1 variables. 52.5% of the variance in Time 2 TL-Inspiring Influence was explained by its Time 1 equivalent and the two Time 1 EI variables. 73% of total variance in TL-Concern/Behaviour at Time 2 was explained by the proposed Time 1 variables, while 79.5% of Time 2 Trust in Manager was also accounted for by the relevant study variables at Time 1. Trust in Organisation at Time 2 had 80.2% of its variance explained by the projected Time 1 factors, while 76.9% of the variance in Change Cynicism (Pessimism) was accounted for by the Time 1 trust factors and the corresponding Time 1 Change Cynicism (Pessimism) variable. Finally, 75.7% of the variance in Time 2 Intent to Leave scores was explained by the Time 1 trust variables and Intent to Leave. In all, the effect sizes could unequivocally be described as very strong (Jaccard & Wan, 1996). That is, a large percentage of the variance in each Time 2 dependent was explained uniquely or jointly by the Time 1 independents.

A postliminary power analysis was performed to determine the suitability of the longitudinal data set in achieving adequate predictive strength for Type II errors. Given the

large degrees of freedom for both the invariance testing and analysis of the full longitudinal model, a sample size of 210 was adequate to obtain a power of one, the highest possible (MacCallum et al., 1996). According to the RMSEA confidence intervals and MaCallum et al's (1996) requisites, the required sample size for a power of 0.80 was much less than 100 subjects for all analyses. However, as stated in Chapter III, the sample size must far outweigh the number of observed variables and parameters to be estimated, particularly with multi-group methods. In any case, a sample size greater than 200 is often noted as a large sample within SEM (Boomsa, 1983).

Discussion

The results indicated that the cross-sectional structural relations between the variables of interest (Chapter V) remained constant over a one year time-frame. Structural equations modelling (SEM) showed that there was no significant alpha, beta or gamma change (Golembiewski et al, 1976, cited in Taris, 2000). This supported Hypothesis H6.1 and meant that the constructs remained steady when tested with a longitudinal sample. The hypothesised longitudinal relationships between the constructs were also successfully sustained (H6.2 and H6.3). Next, the implications of these results are briefly discussed and expanded upon within Chapter VIII.

Each of the shortened scales from the employee survey was found to have acceptable test-retest reliability (at or above ICC = .70), even with an extended time interval. The stability coefficients for the EI dimensions were marginally lower than those reported for other EI scales that have been studied longitudinally (Palmer & Stough, 2003a; Schutte et al.,

1998). However, this slight difference is offset by the fact that the time lag for the present research was twelve times longer than that of previous studies. The results also indicated that the amended transformational leadership, trust, change cynicism and intention to leave instruments had good test-retest reliability. The latter three had not been tested previously with independent longitudinal samples, while the test-retest reliability of the transformational leadership instrument was consistent with previous findings (e.g. Bass, 1999). In sum, the results satisfied a central standard of psychometric testing.

Similarly, each variable measured by the second questionnaire was significantly related to the equivalent variable measured at Time 1. For example, an employee's rating of their leader's transformational leadership in the first survey significantly influenced their perception of that leader's transforming style in the second survey. These results indicated that employee perceptions and attitudes, once formed, may remain relatively stable, at least if there are no significant development schemes in place during the relevant time-frame, as was the case with the sample organisation.

Each of the structural relationships over time was consistent with the cross-sectional results (Chapter V). More specifically, an employee's estimation of their leader's emotional intelligence had lasting consequences on whether that leader was thought to be transformational. Depending on the specific leadership dimension, results indicated that transformational leadership had an enduring effect on employee trust. Expressly, evaluations of inspiring leadership affected an employee's trust in the organisation over the twelve month time period, while an assessment of a manager's individualised concern and behaviour was

implicated in the maintenance of employee's trust in that manager over a twelve month time-frame. In addition, the results denoted that trust in an organisation, longitudinally, would be expected to affect employees' pessimistic attitudes about change, as well as their desire to leave. It also seems that an early emotional response to change has a lasting impact on behavioural intentions to stay or leave. Chapter VIII relates these observations to employee expectations of reciprocity (Abraham, 2000) and social-exchange theory (Dansereau et al., 1975), and notes the practical importance of actively managing trust and change attitudes to reduce costs associated with potential turnover.

MANOVA results showed that there were no significant differences between scores on the organisational constructs between Time 1 and Time 2. With the absence of any formal intervention, these finding were not unexpected. These results are also consistent with the view that global organisational variables, such as organisational trust, tend to develop gradually over time (Mowday et al., 1979). Future research may look to leadership intervention studies to gain further insight into the development or attrition of each of the study variables.

It may be argued that a respecification of the longitudinal model would have resulted in a closer fit. However, as previously mentioned, the appropriateness of model fitting procedures has been ardently opposed by some experts in SEM, such as Hayduk (1987). While other leaders in the field (Byrne, 2001; Joreskog & Sorbom, 1996; Kline, 2005) have noted the acceptability of fixing non-significant parameters that were previously estimated, modified models may become exploratory rather than confirmatory via this technique

(Schrieshem, cited in Hurley et al., 1997). With modified models, the relationships may become driven purely by the modification indices that are independent of theory. The theory-driven nature of SEM is often noted as one of the greatest advantages of the method (Kline, 2005). Given the ambiguity in this area, and also the lack of significant gains made by model respecification at the cross-sectional stage (Chapter V), the decision not to respecify the model appeared to be justified.

Without modification, the results showed that a substantial amount of variance in the Time 2 constructs was accounted for by the Time 1 constructs. The large percentage of variance explained in each Time 2 variable was a product of the stability of the measures and the constant relationships within the longitudinal data. The explanatory power of the longitudinal model could subsequently be described as excellent. Yet a degree of unexplained variance at Time 2 does suggest the possibility of absent antecedents for each of the constructs. Another limitation included the use of two-wave data where three waves would have allowed stronger conclusions about the causality of relationships to be drawn. Supplementary research may draw on three or more waves of data to test possible causal directions more completely. Another consideration for future work may be the use of different time intervals between survey distributions. This may promote learning of the mechanics behind the tested relationships. A third opportunity involves the evaluation of interventions that organisations might introduce to improve leader emotional intelligence, leadership style and subsequent employee attitudes and intentions. Such research would fill a relative void in the organisational EI literature in particular.

In all, the results supported a model of leader EI and associated factors using rigorous analytical procedures. The use of the longitudinal method to illustrate relationships over time provides the strongest evidence to support the validity of relationships (Willet, 1993), particularly in comparison to cross-sectional designs. Implementing a similar survey design, researchers might be reasonably confident of the direct or indirect role of emotionally intelligent leadership in the workplace. However, as reviewed in Chapters II and III, there is a major divide in the EI field concerning the use of mixed-model EI surveys over ability-based performance tests. A suitable next study is to explore the effects of leader EI using the ability-test methodology. This study is discussed next in Chapter VII.

CHAPTER VII

STUDY 2: OUTCOMES OF ABILITY-BASED LEADER EMOTIONAL

INTELLIGENCE

Chapter VI reported on the final stage of Study 1 by testing a longitudinal model of leader EI and related factors. The present chapter investigates the effects of ability-based leader EI on the emergent survey dimensions from Study 1. While Study 2 implemented performance-based emotional intelligence (EI) tests based on Mayer and Salovey's (1997a) ability model of EI, Study 1 used an 'other-report' survey of leader-EI based on dimensions of Goleman's (1995) mixed-model. A short introduction to Study 2 is given before the results are presented and discussed.

EI Ability Tests and EI Surveys

Chapters II and III provided a comprehensive overview of the differences and similarities between the EI mixed-model perspective and the ability-based EI framework. It was noted that each type of model has strengths and weaknesses, and it was further argued that associated measures may be usefully employed to capture complementary dimensions of the EI construct. It should be recalled that research has found modest correlations between self-rated and actual ability measures (Paulhus et al., 1998; Mayer et al., 2000a). For example, Brackett and Mayer (2003) uncovered two correlations that typify such findings. First, they found a small relationship between the Mayer Salovey Caruso Emotional Intelligence Test (MSCEIT; Mayer et al., 2000b) and the Emotional Quotient Inventory (EQ-i, Bar-On, 1997) ($r = .21$, $p < .05$). They also found a similarly minor yet significant

correlation between the MSCEIT and the Self Report Index (SRI, Schutte et al., 1998) ($r =$ .18, $p < .05$). Although various measures frame the concept in different ways, EI instruments are generally espoused to be measuring a single 'emotional intelligence' construct. Due to the difficulty in reconciling the weak correlations between mixed model surveys and ability measures, it is more than possible that they are tapping into somewhat different aspects of EI, or measuring different constructs all together (Ciarrochi et al., 2000). Yet both types of measures overlap with the idea that EI in some way involves the perception and management of emotion in oneself and in others. As Ciarrochi et al (2000) documented, the various EI definitions and their respective measures "tend to be complementary rather than contradictory" (p. 540). Due to some degree of theoretical intersect, a significant, albeit small relationship between the two types of measures could be expected if both were implemented within the same study.

An existing chasm in the organisational EI literature concerns whether EI survey instruments and ability tests predict analogous work-based outcomes. To date, there are no published journal articles comparing an EI ability test to an EI survey in the organisational literature. Any hypotheses made in this area would subsequently be exploratory in nature. If the two types of tests are assessing comparable abilities or behaviours, then one could expect a similar prediction of outcomes. If the tests significantly diverge, then incongruous results might be expected. The latter possibility is reinforced by the weak and often-mentioned lack of parallel between EI surveys and EI ability tests (Mayer et al., 2000a). Conversely, given that mixed and ability EI models and measures have at least some theoretical uniformity, outcome studies represented by both major types of instruments might have some common

ground. The present study explores this uncertain area by studying the effect of ability-based leader EI on transformational leadership, employee trust in manager/organisation, change cynicism and intention to leave.

Leader EI and Transformational Leadership

Chapter II extensively detailed the theoretical linkages between leader EI and transformational leadership (see Table 2.3, Chapter II). This review also provided a full critique of several journal articles maintaining a relationship between the two variables (Barling et al., 2000; Gardner & Stough, 2002; Palmer et al., 2001; Sosik & Megerian, 1999; Srivsastava & Bharamanaikar, 2004). Each of these studies implemented a cross-sectional design using different survey measures of EI. Similarly, Study 1 of this thesis supported an association between employee-rated EI and transformational leadership using survey methodology. Specifically, moderate to strong correlations between the EI and transformational leadership factors were reported ($r = .54$ to $r = .72$, $p < .05$), and structural relationships between the same variables were upheld longitudinally. When coupled with the strong theoretical links between EI abilities and various transformational behaviours, survey findings support the prospect that ability-based leader EI may also be associated with transformational leadership.

Leader EI and Trust

Ability-based leader EI could also be related to the propagation of trust amongst employees. A justification for this position is that the correlates of both leader EI and leader trust appear to overlap, suggesting some convergence between the concepts. For example,

both EI and trust have been reliably associated with transformational leadership (e.g. Ferres et al., 2002; Podsakoff et al, 1990). Although literature reporting direct relationships between EI and trust is relatively scarce and largely notional (e.g. Goleman, 1998), EI survey findings from Study 1 support an empirical link. Here, moderate to strong correlations showed that employees who reported their manager was emotionally intelligent were more likely to expound trust in that manager (EI-Perception, $r = .64$, $p < .05$; EI-Management, $r = .58$, $p < .05$). An employee's trust in an organisation was also likely to be higher if leader EI ratings were higher for both Perception ($r = .46$, $p < .05$) and Management ($r = .38$, $p < .05$) (see Table 4.12, Chapter IV). However, using the same EI survey and trust questionnaire, Schlechter and Boshoff (2003) reported a modest correlation between total leader EI and trust in that leader ($r = .18$, $p < .05$), and found that the association between leader EI and trust in an organisation was not significant. In subsequent regression analyses, leader EI explained a small amount of variance in trust scores, with disposition towards trust being the most salient predictor of trust at both leader and organisational levels (Schlechter & Boshoff, 2003). In sum, existing survey evidence is ambiguous when it comes to a relationship between leader EI and employee trust.

Despite ambiguous evidence, there is a conceptual grounding for a conceived link between leader EI and subordinate trust from an ability perspective. For example, a leader who is strong in personal emotional management may be accomplished at self-regulating their own needs for the good of an organisation. Similarly, a leader who is skilled in emotion understanding and perception may be better able to recognise and respond to employees' needs. Such leaders may subsequently build more positive social exchange relationships with

staff. High-quality exchange relationships involve mutual trust, support, and loyalty between

a leader and his or her employees (Sherony & Green, 2002). Indeed, Mayer and Salovey

(1995) have argued that EI is predicated on the notion that individuals should relinquish short-

term benefits for long-term gains, strive for positive personal emotions and interpersonal

relationships, and display individual consideration to others. These characteristics in a leader

may promote a reputation of trustworthiness. An employee's willingness to engage in trust

behaviours might then be bred from positive perceptions of their leader. Leaders might

plausibly be seen as a conduit for the organisation. That is, an employee who trusts their

leader may have greater trust in their collective organisation, and vice versa.

Leader EI and Change Cynicism

       The underlying assumptions of EI can also be speculatively linked to a leader's ability

to influence and manage employee change cynicism. For instance, the EI competencies of

emotion perception and understanding may contribute to a leader's ability to effectively

facilitate change. To the extent that a leader is empathetic, he or she may possess the ability to

understand employees' mental models and existing frameworks, particularly as radical change

is likely to be beyond the 'mental map' of most people and is likely, therefore, to cause

resistance and/or confusion (Connell & Waring, 2002). Moreover, leaders with the skill of

emotion perception and understanding are able to read social situations and interpret

information that is not openly expressed or stated by employees, such as cynicism (Schmidt,

1997). In addition, responding to cynicism, and shifting associated feelings, necessitates that

leaders possess accurate knowledge about the causes and consequences of emotions, which is

a principal feature of emotional intelligence (George, 2000).

Wanous et al. (2000) presented evidence to suggest that leaders can have an effect on organisational factors that result in reduced change cynicism amongst employees. Specifically, lower levels of cynicism towards change were related to increased employee perceptions of participation in decision-making, and increased perceptions of leader effectiveness. It is plausible to assume then, that if EI is fundamental to effective leadership (George, 2000), and that if perceptions of leader effectiveness have a negative relationship with cynicism, then ability-based leader EI may have a direct impact on cynicism towards organisational change (Ferres et al., 2004). Significant, albeit minor correlations were found between the two leader EI dimensions from the mixed-model survey and reduced change cynicism (Study 1: $r = -.16$, $p < .05$ and $r = -.20$, $p < .05$). However, this finding is yet to be replicated using an ability-based EI perspective.

Leader EI and Intention to Leave

Leaders tend to shape an employee's work environment (Sherony & Green, 2002) and those who are emotionally unintelligent may evoke and sustain employees' intentions to leave. The exchange between an employee and his or her leader is one of the primary determinants of employee intentions and behaviour (George, 2000). A leader with low EI may be less likely to be aware of employees' interests and hold inferior relationship building skills, perhaps leading to substandard leader-member exchange relationships. Lower-quality exchange relationships are characterised by leaders' overuse of formal authority and are a strong predictor of employee withdrawal intentions (Krishnan, 2005). This may account for the significant correlations between intent to leave and leader EI management and EI perception (Study 1, $r = -.27$, $p < .05$ and $r = -.31$, $p < .05$).

Aims and Hypotheses

Study 2 set out to explore the effects of ability-based leader EI on a number of outcomes. The hypotheses can be tested using correlation and regression results rather than structural equation modelling (SEM). As discussed in Chapter III, the researcher predetermined that management numbers within the participating organisation would not be a sufficient sample for SEM yet would be adequate for more traditional analyses. Study 2 is subsequently designed as an adjunct to Study 1 and proceeds with four hypotheses drawn from the above justifications:

H7.1. Leader emotional intelligence (EI), as measured by an ability test, will have a small yet significant positive association with EI-Perception and EI-Management, as measured by an employee 'other-report' survey.

H7.2. Ability-tested leader EI will be positively related to, and predictive of, other-rated Transformational Leadership-Inspiring Influence (TL-II) and Transformational Leadership-Concern/ Behaviour (TL-CB).

H7.3. Ability-tested leader EI will be positively related to, and predictive of, employee Trust in Manager and Trust in Organisation.

H7.4. Ability-based leader EI will be negatively related to, and predictive of, employee Change Cynicism (Pessimism) and Intention to Leave.

Method

Sample

Two 'leader' samples from Sample 1 (Organisation A) were utilised using two different EI-ability tests. 107 leaders at Time 1 completed the first instrument (Test 1) (39% Managers and 61% Team Leaders). Listwise deletion of missing data reduced number of valid responses to 102, with a response rate of 78%. Comparable numbers were obtained for the second sample who completed an alternate EI ability-based at Time 2 (Test 2) (37% Managers, 63% Team Leaders). Overall, 104 responses were attained at this second point in time, with 102 valid responses after listwise deletion of cases with missing data. The response rate was 76% for this second distribution. 86 leaders completed both Test 1 and Test 2, meaning 83% of Test 2 subjects had experience completing an ability-based EI measure. Chapter III presented a table containing the full demographics, and also outlined evidence to support the representiveness of the samples.

Valid leader responses were linked with one or more employee surveys from subordinates from Sample 1. 467 employees completed the survey when Test 1 was distributed (Valid $N = 448$). 341 of these employee responses could be matched to a leader's EI test score. 398 employees completed the second employee survey (Valid $N = 390$). 295 of these responses could effectively be linked to a corresponding leaders' EI test score (Test 2). This process meant that some leader test results were matched to a response from one employee only, while others were matched to a mean of several employee responses.

Measures

As described at length in Chapter III, two leader EI ability tests were implemented within Study 2 at separate points in time. Items from the employee survey utilised for Study 1 were also employed here. For continuity, the scales are briefly revisited.

Ability-Based Leader Emotional Intelligence

Test 1 (Time 1): Amended Organisational Mutlifactor Emotional Intelligence Scale (AO-MEIS). The 93-item Amended Organisational Multifactor Emotional Intelligence Scale (AO-MEIS) was based on a shortened version of the Multifactor Emotional Intelligence Scale (MEIS-v1.3, Mayer et al. 1997b). As previously described, the MEIS-v1.3 was tailored for use in organisations by the researcher, with moderate changes involving conversions from 'personal' to 'work' based scenarios. The AO-MEIS test consisted of 7 tasks which were divided into 3 branches representing Emotional Intelligence: 1. Perception of Emotion, 2. Understanding of Emotion, and 3. Management of Emotion. These branches are consistent with the emergent factors of Mayer et al's (1999) construct validation study conducted on the full MEIS. A pilot study of the AO-MEIS (Ferres & Crombie, 2003, $N = 124$) showed that the test had admissible reliability, although the reliability of the single tasks was low and on par with validation research of the full MEIS (Mayer et al., 1999; Ciarrochi et al; 2000; Roberts et al.; 2001). Consensus scoring was chosen as the scoring method for all items. The availability of the updated MSCEIT, along with poor reliability results with the Study 2 sample prompted a move to change EI tests at Time 2.

Test 2 (Time 2): Mayer-Salovey-Caruso Emotional Intelligence Test: Version 2 (MSCEIT V2). The 141-item MSCEIT V2 comprised 8 subscales, 2 relating to each of the four branches of the ability model (Mayer & Salovey, 1997b): 1. Perceiving Emotions (Perceiving), 2. Using Emotions to Facilitate Thought (Using), 3. Understanding Emotions (Understanding), and 4. Managing Emotions (Management). Mayer et al. (2003) reported very good reliability at the total-test and branch levels, yet reliabilities at the task level were at times less than the desirable. The test distributor, MHS, scored the present data using the expert consensus weights.

Employees' Perceptions and Attitudes

The same twenty-five survey items validated in Chapter IV, and then used to explore the structural and longitudinal models in Chapters V and VI were also implemented in Study 2. Items measured employees' perceptions of their leaders' EI and transformational leadership orientation. Employees also self-reported their trust in manager, trust in organisation, change cynicism (pessimism), and intent to leave.

Procedure

A survey pack was distributed to each manager and team leader in a line-management position within Sample 1 (Organisation A). Managers and team leaders were invited to complete Test 1 (AO-MEIS) and to distribute an employee survey to workers they managed directly. Leader and subordinate surveys were differentiated through different coloured paper, and matching of the two occurred through a coding system. This process was repeated

approximately 12 months later (Time 2), with the only changes being the implementation of a

different EI-ability test (Test 2, MSCEIT), couples with the inclusion of a question pertaining

to participation in the Time 1 survey. The interval between distributions was most convenient

for the management of the organisation, being between internal staff surveys. In this sense,

the time lag appeared sufficiently long enough to discourage 'survey fatigue' whereby

employees might grow weary of completing organisational questionnaires (Porter et al.,

1997).

Analyses

All data from the leader and employee measures was screened for missing data,

outliers and non-normality. While most variables were slightly skewed, other-reported EI-

Perception, EI-Management and Trust in Manager were moderately negatively skewed

(greater than -1.0) (Francis, 1999). Moderate violations of parametric assumptions have little

effect on substantive conclusions in most instances (Cohen, 1988). However, negative effects

of non-normality increase as a function of sample size, and larger sample sizes are needed if

the data is skewed (Kline, 2005). Given the relatively small samples in Study 2, the three

moderately skewed variables were normalised by first subtracting all values from the highest

value, adding 1, then applying a square root transformation (Garson, 2004). The same

variables were not transformed in Study 1 as the structural equations modelling (SEM)

programs implemented procedures to help correct for normality violations. Also, sample sizes

for each component of Study 1 were all greater than 200. This can be compared with samples

of just over 100 for Study 2.

At both Time 1 and Time 2, employee survey means concerning each leader were calculated and transposed into SPSS spreadsheets of leader EI-ability test results. For example, one team leader may have supervised 10 employees who each completed an employee survey. In this instance, the mean scores across the 10 staff members were aggregated. If these direct employees rated their leader as having a transformational leadership level of 4.5/7, then a 4.5 was placed against the relevant leader for that study variable, and so on for the remaining variables.

The analysis then proceeded through various steps. First, descriptive statistics for the samples were generated for both Time 1 and Time 2. The reliabilities of the two EI ability tests and their subdimensions were then calculated. As recommended by Mayer et al. (2003), split-half reliability, r, was used for branch reliability and total-task reliability scores for the performance-based tests due to the heterogenous response formats across tasks. An equal number of items from each task were entered into each analysis by dividing each task into odd and even items. Alpha (α) values were used as a measure of reliability for individual performance tasks and employee survey variables. Correlations were computed before proceeding with general linear regressions for each dependent variable. As discussed in Chapter III, general linear regression was implemented rather than the stepwise method due to the smaller leader sample sizes (Tabachnick & Fidell, 2001). To obtain a post-hoc overview of necessary sample size, the various regression slopes and standard deviations of regression errors were entered into the GPower program which performs precision statistical power analyses (Erdfelder et al., 1996). Here, the power was set to .80 with an alpha level of 0.05.

Overall, the employed analytic techniques allowed for the assessment of the hypotheses under investigation.

Results

Test 1: AO-MEIS

Descriptive Statistics and Reliability

Table 7.1 presents the mean scores, standard deviations and reliabilities for

the Amended Organisational Multifactor Emotional Intelligence Test (AO-MEIS).

Results for overall EI, the three EI branches and the subtasks are displayed. The

table also outlines the aggregated means for the employee survey respondents. The

mean total EI score for the AO-MEIS (M = .42, SD = .04), was significantly higher

than the total EI obtained for the full MEIS (M = .37, SD = .05, Mayer et al., 1999).

Indeed, the leader sample scored significantly higher than Mayer et al's MEIS sample

in all areas except for the 'Faces' task. Moreover, the results showed that leaders

scored comparatively better in the Understanding and Perception ability tasks

compared to the Managing tasks. This pattern was also evidenced in Mayer et al's

research with the original scale.

The means for the aggregated, matched employee surveys *(N = 102)* were comparable to means from the full sample at Time 1 *(N = 448)*. As Table 7.1. shows, no significant mean differences were obtained between the two samples.

AO-MEIS reliabilities are also reported in Table 7.1. An examination of split half reliability indicated that a composite score on the scale yielded a reliable measure of emotional intelligence ($r(102) = .78$). The Perception and Understanding branches showed acceptable split-half reliability ($r(102) = .84$ and $r(102) = .76$). However, the Managing branch ($r(102) = .59$) was below the recommended level of .7 and each of the branch score reliabilities were less than those for the original MEIS branches ($\alpha = .81$ to $\alpha = .96$, Mayer et al., 1999). Table 7.1 shows that the alpha reliabilities for the AO-MEIS at the task level were uniformly low, and somewhat below those reported for the full MEIS. Only four of the AO-MEIS subtasks had adequate reliability, whereas Mayer et al (1999) only had substandard reliability for two subtasks only. Nevertheless, the AO-MEIS reliabilities were arguably comparable to those obtained by Roberts' et al (2001). In their study, Roberts' et al recounted that 9 of the original 12 MEIS subtasks did not reach satisfactory reliability levels. The

Understanding and Management AO-MEIS subtask reliabilities in the present study

(α = .31 to α = .74) were also similar to those found by Ciarrochi et al. (2000) for the

same two branches of the full MEIS (α = .35 to α = .66). As previously stated, at Time

2, these findings prompted a move away from the AO-MEIS and the full MEIS on

which it was based. The following results should be interpreted in light of the

questionable internal consistency of some of the scale components.

In terms of demographic differences, it should also be noted that gender

differences in total EI, Perception and Managing did not arise. Women, however,

scored significantly higher than males on the Understanding branch (F(1, 100) =

4.99, p<.05). MANOVA revealed no significant differences in scores between leaders

at different position levels (*Wilks* = .95, F(1, 100) = 1.58, p < .05, effect size = .004).

Table 7.1.

Descriptives and Reliabilities (AO-MEIS) and Matched Employee Survey Results (n = 102)

Variable	AO-MEIS Mean[a]	SD	r / α[b]	MEIS Mean[c] (12 Tasks)
AO-MEIS Leader Scores				
Overall EI	*.42*	*.04*	***.78***	.37[**]
Perception	*.42*	*.05*	***.84***	.40[ns]
Faces	.39	.06	.80	.40[ns]
Stories	.44	.07	.71	.38[**]
Understanding	*.59*	*.07*	***.76***	.46[**]
Blends	.73	.13	.41	.49[**]
Progressions	.65	.13	.56	.58[**]
Relativity	.38	.04	.74	.30[**]
Managing	*.37*	*.04*	***.59***	.28[**]
Management of Self	.30	.03	.36	.28[ns]
Management of Others	.43	.05	.31	.28[**]
Employee Survey Means (Other-Rated)	**Mean**	**SD**	**α**	**Time 1 Mean (N= 448)d**
Leader EI-Perception	5.18	1.22	.92	5.12
Leader EI-Management	5.80	.96	.87	5.64
Leader TL- Inspiring Influence	3.89	1.15	.86	3.78
Leader TL- Concern/Behaviour	3.90	1.19	.86	3.98
Trust in Manager	5.44	.89	.85	5.29
Trust in Organisation	4.61	1.14	.92	4.52
Change Cynicism (Pessimism)	2.92	1.21	.89	3.06
Intention to Leave	3.09	1.44	.88	2.99

[a] Higher scores indicate higher levels for each variable, [b] r = Split-half reliability of total and branch scores (bolded), α = Alpha reliability; [c] Mayer et al's (1999) MEIS Total Score Mean (12 tasks), Branch Score Scale Means and Task Means. Only the scores for the MEIS tasks included in the AO-MEIS are reported; Means significantly different at [*]$p<.05$, [**]$p<.01$; [d] No mean differences

Intercorrelations

Hypotheses were explored through preliminarily correlations. Table 7.2. presents the

relationships between the various sections of the AO-MEIS, and between the AO-MEIS and

the employee-survey variables. For the most part, the AO-MEIS branch and task scores were significantly correlated with one another. The correlations between the branch scores and total EI were mostly moderate to high ($r = .52$, $p<.05$ to $r = .80$, $p<.05$), although some individual task scores did not relate significantly with other components of the instrument. The lowest AO-MEIS intercorrelations were evidenced for the Managing Self task, suggesting that this sub-section was particularly problematic.

In opposition to Hypothesis 7.1, total leader AO-MEIS scores did not significantly correlate with employee survey ratings of leader EI. For example, if a leader scored highly on AO-MEIS Perceiving, this did not equate to employees rating that leader as having good emotional perception skills. Predominantly, EI ability scores did not match employee perceptions for nearly all branches and tasks. An exception offering partial support for Hypothesis 7.1 was the small yet significant association between AO-MEIS Perceiving and employee survey ratings of EI-Managing ($r =.21$, $p< .05$).

There were limited significant correlations between the AO-MEIS and many of the employee survey variables. However, the relationships between the AO-MEIS and the employee-rated transformational leadership variables were significant. These findings supported Hypothesis 7.2. That is, a leader's total EI score from the AO-MEIS had a small but positive association with how an employee rated his/her leader's TL-Inspiring Influence ($r = .25$, $p < .05$) and TL-Concern/Behaviour ($r = .23$, $p < .05$). The AO-MEIS Perception branch was significantly related to both TL-Inspiring Influence ($r = .27$, $p < .01$) and TL-Concern/Behaviour ($r = .26$, $p < .01$). In particular, a leader's performance on the Faces task was significantly correlated with TL ratings ($r = .24$, $p < .05$ and $r = .27$, $p < .01$). In

Table 7.2.

Correlations between AO-MEIS and Employee Survey Variables (n = 102)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
AO-MEIS																				
1. EI Total	-																			
2. Perception	.80**	-																		
3. Understanding	.67**	.28**	-																	
4. Managing	.52**	.16	.25*	-																
5. Faces	.61**	.79**	.18	.15	-															
6. Stories	.68**	.83**	.26**	.11	.32**	-														
7. Blends	.45**	.18	.71**	.26**	.07	.22*	-													
8. Progressions	.43**	.17	.78**	.10	.17	.11	.18	-												
9. Relativity	.59**	.26**	.41**	.16	.13	.29**	.12	.15	-											
10. Managing Self	.25*	-.02	.15	.61**	.11	-.11	.11	.10	.10	-										
11. Managing Others	.47**	.21*	.20*	.80**	.10	.23**	.24**	.05	.13	.02	-									
Employee Survey																				
12. EI-Perception	-.06	-.17	-.03	-.14	-.13	.10	-.02	-.03	.01	-.14	-.07	-								
13. EI-Managing	.16	.21*	.03	.07	.11	.23**	.03	.01	.03	.06	.04	.69	-							
14. TL-Inspiring Infl.	.25*	.27**	.11	.01	.24**	.20*	.06	.05	.18	.09	-.06	.50**	.70**	-						
15. TL-Concern/Bhvr	.23*	.26**	.11	-.01	.27**	.16	.02	.10	.14	.09	-.07	.52**	.68**	.75**	-					
16. Trust in Manager	-.08	-.06	-.05	-.07	-.07	-.02	-.09	.01	-.03	-.12	.00	.60**	.32**	.37**	.35**	-				
17.Trust in Organisation	.01	.01	-.06	.01	-.06	.07	-.09	-.05	.10	.03	-.02	.52**	.45**	.40**	.36**	.57**	-			
18.Change Cynicism (P)	-.05	.01	-.03	-.12	-.01	.03	.06	.01	-.02	-.10	-.07	-.37**	-.20**	.01	-.21*	-.36**	-.64**	-		
19. Intention to Leave	.04	-.01	.13	-.01	.01	-.03	.11	.10	.03	.01	-.03	-.23*	.15	.14	-.23*	-.18	-.55**	.45	-	
20. Dispositional Trust	.08	.12	-.03	-.01	.11	.08	-.09	.08	.03	.05	-.06	.02	.41**	.31**	.32**	.05	.02	-.08	.13	-

Note: **p<.01, *p<.05; (P) = Pessimism

opposition to Hypotheses 7.3 and 7.4, no appreciable relationships were found between the

AO-MEIS and the Trust, Change Cynicism (Pessimism), and Intention to Leave constructs.

Regression Analysis

Regressions were performed to further clarify relationships with the AO-MEIS. In

each analysis the AO-MEIS branches (Perceiving, Understanding and Managing) were

entered as predictors of each dependant employee-survey variable. Table 7.3 illustrates the

model summaries and standardised beta coefficients for the relationships predicted in the

study.

The first two regressions tested Hypotheses 7.1. These analysis showed that the AO-

MEIS branches accounted for just 2% to 5% of the variability in employee ratings of leader

EI-Perception and EI-Managing, $F(3, 99) = .67$, $p>.05$ and $F(3, 99) = 1.61$, $p>.05$. However,

standardised beta coefficients showed that AO-MEIS Perceiving had a small yet significant

influence on employee ratings of EI-Management.

The remaining set of regressions assessed Hypotheses 7.2 to 7.4. Finding some

support for Hypothesis 7.2., the AO-MEIS branch scores were found to account for 8% of the

variance in TL-Inspiring Influence ratings ($F(3, 99) = 2.97$, $p<.05$), and 8% of TL-

Concern/Behaviour ratings ($F(3, 99) = 2.76$, $p<.05$). AO-MEIS Perceiving was the most

important predictor of TL in these relationships, with the other two branches failing to have a

significant influence. Contrary to Hypotheses 7.4 and 7.5, the AO-MEIS branches did not

have a significant influence on Trust in Organisation, Trust in Manager, Change Cynicism

(Pessimism), nor Intention to Leave.

Table 7.3.

Regression of AO-MEIS Predictors and on Dependent Employee-Rated Variables (n = 102)

AO-MEIS Predictors	Standardised Beta Coefficients (β)							
	EI-P	*EI-M*	*TL-II*	*TL-CB*	*OT*	*MT*	*CC(P)*	*IL*
Perceiving	.01	.22*	.25*	.25*	.01	-.05	.03	-.05
Understanding	.02	-.05	.10	.09	.01	-.02	-.02	.13
Managing	.15	.05	-.06	-.06	.00	-.06	-.12	-.04
	$R = .14$, $R^2 = .02$, $F = .67$ ns	$R = .22$, $R^2 = .05$, $F = 1.61$ ns	$R = .29$, $R^2 = .08$, $F = 2.97*$	$R = .28$, $R^2 = .08$, $F = 2.76*$	$R = .02$, $R^2 = .00$, $F = .01$ ns	$R = .09$, $R^2 = .01$, $F = .28$ ns	$R = .12$, $R^2 = .02$, $F = .50$ ns	$R = .12$, $R^2 = .01$, $F = .46$ ns

Note: EI-P = Other-rated EI-Perception, EI-M = Other-rated EI-Managing, TL-II = Transformational Leadership- Idealised Influence, TL-CB = Transformational Leadership- Concern/Behaviour, OT = Trust in Organisation, MT = Trust in Manager, CC(P) = Change Cynicism (Pessimism), IL = Intention to Leave; *$p <$ .05, **$p <$.01, [ns] = not significant

Test 2: MSCEIT-V2

Descriptive Statistics and Reliability

Findings were refined using a second, updated instrument at Time 2 to examine if the

choice of the performance-based test negatively affected reliability and results. Table 7.4

presents the mean scores, standard deviations and reliabilities for the Mayer Salovey Caruso

Emotional Intelligence Test- Version 2 (MSCEIT-V2). Consistent with the results just

presented, total test, branch and task level scores are detailed along with matched means for

the employee survey respondents.

Overall, the MSCEIT scores for the leader group were comparable to the expert consensus norms obtained by Mayer et al (2002). The total mean score was .54 ($SD = .07$), which was not significantly different to the MSCEIT norm ($M = .53$, $SD = .07$, Mayer et al., 2002). Compared to the MSCEIT norms, leader scores on two of the eight tasks were significantly higher, with no noteworthy differences at the branch level. Consistent with the AO-MEIS findings and MSCEIT norms, participants scored relatively better in the Understanding and Perception ability tasks compared to the Managing task.

In terms of gender differences, there were no significant differences between males and females in MSCEIT Total EI, Perceiving, Using or Understanding. However, females scored significantly higher than their male counterparts for the Managing branch ($F(1, 100) = 4.81$, $p<.05$). MANOVA revealed no significant differences in scores between leaders at different position levels ($Wilks = .94$, $F(1, 100) = 1.68$, $p < .05$, effect size = .005).

For the most part the means for the aggregated, matched employee surveys ($N = 102$) were comparable to means from the full sample at Time 1 ($N = 448$). There was one significant difference; matched employee surveys reported their leaders as having higher TL-Inspiring Influence compared to the full Time 1 sample, $t(101) = 2.28$, $p <.05$.

Next, reliability for the MSCEIT was examined. While total test reliability was very good ($r(102) = .85$), some reliabilities were poor, even at the branch level. The Perceiving and Understanding branches showed good split-half reliability ($r(102) =$

.92 and r(102) = .72), yet the Using and Managing branches were substandard

(r(102) = .58 and r(102) = .46). Alpha reliabilities for six of the eight tasks were also

below .70. Overall, the MSCEIT reliability was similar (or worse) than that obtained

for the AO-MEIS. In light of this information, caution should again be applied when

interpreting findings.

Table 7.4.

Descriptives and Reliabilities (MSCEIT-V2) and Matched Employee Survey Results (n = 102)

Variable	MSCEIT Mean[a]	SD	r / α^c	MSCEIT Norm[abd]
MSCEIT-V2 Leader Scores				
Overall EI	*.54*	*.07*	**.85**	*.53[ns]*
Perceiving Emotions	*.58*	*.12*	**.92**	*.56[ns]*
Faces	.61	.20	.87	.58[ns]
Pictures	.55	.12	.88	.53[ns]
Using Emotions	*.48*	*.05*	**.58**	*.47[ns]*
Facilitation	.42	.05	.43	.41[ns]
Sensations	.55	.08	.46	.52*
Understanding Emotions	*.65*	*.12*	**.72**	*.63[ns]*
Changes	.68	.13	.68	.64**
Blends	.62	.13	.41	.61[ns]
Managing Emotions	*.45*	*.06*	**.46**	*.44[ns]*
Emotional Management	.44	.05	.25	.42[ns]
Emotional Relationships	.46	.09	.41	.46[ns]
Employee Survey Means (Other-Rated)	**Mean**	**SD**	**α**	**Time 2 Mean** (N= 390)
Leader EI-Perception	5.24	1.54	.92	5.04[ns]

Leader EI-Management	5.76	1.17	.87	5.57 ^{ns}
Leader TL- Inspiring Influence	4.06	1.32	.86	3.76*
Leader TL- Concern/Behaviour	4.11	1.33	.86	3.93 ^{ns}
Trust in Manager	5.10	1.12	.85	5.26 ^{ns}
Trust in Organisation	4.76	1.57	.92	4.47 ^{ns}
Change Cynicism (Pessimism)	3.13	1.55	.89	3.16 ^{ns}
Intention to Leave	3.14	2.02	.88	3.04 ^{ns}

[a] Higher scores indicate higher levels for each variable; [b] Mayer et al (2002) Expert Consensus Norms [c] r = Split-half reliability of total and branch scores (bolded), α = Alpha reliability; [d] Means significantly different at $^{*}p<.05$, $^{**}p<.01$, $^{***}p<.001$

Intercorrelations

Table 7.5. presents the intercorrelations between the MSCEIT and employee survey constructs. There was a predominantly positive manifold of correlations amongst most of the MSCEIT tasks and branches. Despite a few relationships being relatively weak, all tasks were significantly correlated with Total EI. Correlations between the branch scores and total EI were generally moderate to high ($r = .36$, $p <.05$ to $r = .76$, $p <.05$). Each branch had at least one non-significant correlation with a particular MSCEIT task.

Total EI on the MSCEIT was not significantly related to the other-rated EI survey constructs. This finding was in opposition to Hypothesis 7.1. However, in partial support of this hypothesis, leader scores on two of the MSCEIT branches had small yet significant correlations with EI survey scores. Specifically, other-rated EI-Managing shared a positive association with both the MSCEIT Managing and Perceiving branches ($r = .28$, $p<.01$ and $r = .24$, $p<.05$), whereas other-rated EI-Perception was significantly and positively correlated with the MSCEIT Managing branch ($r = .23$, $p<.05$).

In regards to Hypotheses 7.2. to 7.4, approximately one third of the relationships between the MSCEIT branches and the matched employee survey variables were significant.

While these relationships were relatively weak, this was a marked improvement on AO-MEIS findings. In support of Hypothesis 7.2, the strongest correlations were between the leader MSCEIT scores and transformational leadership. Leaders who had higher MSCEIT scores received more positive employee ratings of transformational leadership (TL-Inspiring Influence, $r = .27$, $p< .01$; TL-Concern/Behaviour, $r = .28$, $p< .01$). At the branch level, TL-Inspiring Influence was positively and significantly associated with both MSCEIT Using ($r = .32$, $p< .01$) and MSCEIT Managing ($r = .31$, $p< .01$). In addition, TL-Concern/Behaviour was significantly correlated with three of the four MSCEIT branches; Perceiving ($r = .21$, $p< .05$), Using ($r = .23$, $p< .05$) and Managing ($r = .25$, $p< .01$).

In opposition to Hypotheses 7.3 and 7.4, a leader's total EI (MSCEIT) was not significantly correlated with employee Trust in Manager/Organisation, Change Cynicism (Pessimism) or Intention to Leave. However, some support for these hypotheses stemmed from the finding that employee Trust in Manager and Trust in Organisation ratings were related to leader scores on the MSCEIT-Perceiving branch ($r = .20$, $p < .05$ and $r = .21$, $p < .05$). Moreover, leader scores on MSCEIT-Managing were significantly related to reduced change cynicism ratings amongst subordinates ($r = -.21$, $p < .05$).

Regression Analysis

As with the AO-MEIS regressions, the MSCEIT branches (Perceiving, Using, Understanding and Managing) were entered as predictors of each dependant employee-survey variable. Table 7.6 shows the results for these analyses.

The MSCEIT branches explained between 4% and 16% of the variance in the employee survey variables. Of these, the MSCEIT predictors explained a significant amount of the variation of three organisational constructs. First, in partial support of Hypotheses 7.1, the MSCEIT branches accounted for 12% of the variability in employee ratings of leader EI-Managing, $F(3, 99) = 4.08$, $p<.05$. Standardised beta coefficients showed that both MSCEIT Perceiving

Table 7.5.
Correlations between MSCEIT and Employee Survey Variables (n = 102)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
MSCEIT																						
1. EI Total	-																					
2. Perceiving	.67**	-																				
3. Using	.48**	.31**	-																			
4. Understanding	.76**	.31**	.16	-																		
5. Managing	.36**	.31**	.37**	.03	-																	
6. Faces	.51**	.84**	.28**	.17	.24*	-																
7. Facilitation	.27**	.63**	.62**	-.01	.23*	.13	-															
8. Changes	.38**	.32**	.28**	.68**	.07	.12	-.01	-														
9. Emot. Manag	.21*	.20*	.26**	.02	.70**	.15	.16	.11**	-													
10. Pictures	.54**	.19	.20*	.32**	-.05	.16	.33**	.18**	-.09	-												
11. Sensations	.38**	.30**	.82**	.21*	.31	.28*	.07	.36**	.22*	.01	-											
12. Blends	.64**	.09	.01	.87**	-.03	.21	-.04	.33**	-.04	.23*	.05	-										
13. Social Manag	.35**	.18	.34**	.03	.91**	.23**	.21*	.03	.33**	-.02	.28*	-.02	-									
Employee Survey																						
14. EI-Perception	.11	.15	.13	-.02	.23*	.21*	.26*	-.05	.04	-.02	-.02	.05	.27*	-								
15. EI-Managing	.18	.24*	.15	.03	.28**	.33**	.18	-.01	.11	-.03	.06	.07	.30**	.82**	-							
16. TL-Inspiring Infl.	.27**	.19	.32**	.12	.31*	.25*	.31**	.07	.15	-.01	.19	.13	.33**	.66**	.71**	-						
17. TL-Concern/Bhvr	.28**	.21*	.23*	.15	.25*	.23*	.28**	.07	.12	.05	.09	.14	.27**	.73**	.74**	.80**	-					
18. Trust in Manager	.17	.20*	.09	.15	.08	.23*	.12	.11	-.17	.01	.03	.18	.11	.52**	.50**	.37**	.52	-				
19. Trust in Org	.18	.21*	.18	.14	.12	.26**	.23*	.10	-.01	-.01	.06	.17	.16	.56**	.43**	.33**	.48	.72	-			
20. Change Cynicism (P)	-.08	-.11	-.12	-.03	-.21*	-.15	-.18	-.11	-.09	.02	-.07	.02	-.23*	-.39**	-.36**	-.30**	-.41	-.53	-.58	-		-
21. Intention to Leave	.01	-.12	.04	.05	-.07	-.16	-.08	.07	.05	.01	.12	-.02	-.12	-.48**	-.41**	-.30**	-.39	-.48	-.56	.62	-	
22. Dispositional Trust	.06	.09	.11	-.05	-.03	.10	.10	.09	.07	.06	.07	-.02	.02	.11	.06	.39**	.29**	.31**	.06	.02	.04	-

Note: **$p<.01$, *$p<.05$; (P) = Pessimism

and MSCEIT Managing were the significant predictors within this regression. Contrary to

Hypothesis 7.1, leader MSCEIT scores did not significantly predict variability in EI-

Perception ratings ($F(3, 99) = 1.80$, $p>.05$), although the standardised beta coefficient for the

EI-Managing predictor was significant.

Supporting Hypothesis 7.2, the MSCEIT predictors explained 16% of the variability in

TL-Inspiring Influence ratings, and 11% of the difference in TL-Concern/Behaviour scores

($F(3, 99) = 4.55$, $p<.05$ and $F(3, 99) = 2.98$, $p<.05$). Both the Using and Managing branches

had a significant effect on employee ratings of TL-Inspiring Influence, while the Managing

branch was the only significant predictor of TL-Concern/Behaviour.

Table 7.6.

Regression of MSCEIT Predictors on Dependant Employee-Rated Variables

AO-MEIS Predictors	Standardised Beta Coefficients (β) (N= 102)							
	EI-P	*EI-M*	*TL-II*	*TL-CB*	*OT*	*MT*	*CC(P)*	*IL*
Perceiving	.13	.22*	.07	.12	.14	.14	-.07	-.16
Using	.02	-.01	.21*	.10	.10	.01	-.02	.11
Understanding	-.07	-.04	.06	.10	.09	.11	.01	.08
Managing	.20*	.24*	.22*	.19*	.05	.05	-.19*	-.09
	$R = .26$, $R^2 = .07$, $F = 1.8$ ns	$R = .34$, $R^2 = .12$, $F = 4.08*$	$R = .40$, $R^2 = .16$, $F = 4.55*$	$R = .33$, $R^2 = .11$, $F = 2.98*$	$R = .25$, $R^2 = .06$, $F = 1.65$ ns	$R = .21$, $R^2 = .05$, $F = 1.61$ ns	$R = .23$, $R^2 = .05$, $F = 1.30$ ns	$R = .19$, $R^2 = .04$, $F = .87$ ns

Note: EI-P = Other-rated EI-Perception, EI-M = Other-rated EI-Managing, TL-II = Transformational Leadership- Idealised Influence, TL-CB = Transformational Leadership- Concern/Behaviour, OT = Trust in Organisation, MT = Trust in Manager, CC(P) = Change Cynicism (Pessimism), IL = Intention to Leave; *$p <$ .05, **$p <.01$, [ns] = not significant

Consistent with findings with the AO-MEIS, the MSCEIT branches together did not

significantly predict Trust in Organisation, Trust in Manager, Change Cynicism (Pessimism),

nor Intention to Leave. Once more this was in opposition to Hypotheses 7.3 and 7.4.

However, the standardised beta coefficient for the MSCEIT Managing predictor on Change

Cynicism was significant and negative, meaning that Managing was related to lowered reports

of cynicism amongst employees.

<div align="center">Correlating the AO-MEIS and MSCEIT-V2</div>

As a supplementary analysis, some leaders' AO-MEIS scores could be matched to

their MSCEIT-V2 results via numerical identifiers and corresponding demographic

information, as described in Chapter III. Generally, Table 7.7 shows that leader scores on the

two tests were moderately correlated, with a correlation of .60, p <.05 between the EI totals of

the two instruments. However, some low and non significant correlations illustrate that there

were some differences between the tests, even within similar EI categories, such as AO-MEIS

Perceiving and MSCEIT-V2 Perception, (r = .20, p <.05).

Table 7.7.

Correlations between Matched AO-MEIS Scores and MSCEIT-V2 Scores (n = 86)

Factors*	1	2	3	4	5	6	7	8	9
AO-MEIS									
1. EI Total	-								
2. EI Perceiving	.75**	-							
3. EI Understanding	.68**	.35**	-						
4. EI Managing	.47**	.19	.29*	-					
MSCEIT-V2									
5. EI Total	.60**	.19	.48**	.58**	-				
6. EI Perception	.35**	.20	.36**	.55**	.65**	-			
7. EI Using	.58**	.43**	.17	.34**	.49**	.33**	-		
8. EI Understanding	.43**	.39**	.52**	.31**	.77**	.34**	.15	-	
9. EI Managing	.35**	.54**	.21	.28*	.38**	.32**	.38**	.04	-

** significant at p<.01, * significant at p<.05

Power and Sample Size

Post-hoc power analysis by the GPower program was performed for each major regression. Results revealed that the sample sizes ($N = 102$) were adequate to detect false hypotheses. With power set to .80, and an alpha level of 0.05, a range of 55 to 92 subjects was required to ensure that the regressions were sufficiently powerful.

Discussion

Mayer and colleagues (Mayer and Salovey, 1997b; Mayer et al., 2000; 2004) have consistently argued that emotional intelligence can be used to predict important outcomes via the implementation of ability-based tests that focus on emotional reasoning problems. The current study is the first of its kind within the field of leadership in its use of ability-based EI testing teamed with employee reports of leaders' EI. Ultimately it looked at the differences between ability and survey-measured EI to further elucidate its role in transformational leadership, employee trust, cynicism to change and intentions to leave. Generally, it was found that the ability testing did not duplicate the other-report measure of EI. The hypothesis that a significant relationship between the two types of EI measures would occur was largely unsupported. However, ability-based leader EI was positively associated with employee perceptions of transformational leadership, supporting the second hypothesis. Total scores on the leader ability tests were not significantly correlated with employee trust, change cynicism or intention to leave. However, there

was partial support for the final two hypotheses in the form that some MSCEIT

abilities were associated with selected organisational outcomes. Specifically, a

manager's emotion perception ability was important in increasing employees' trust in

both the manager and organisation. In addition, employees with managers who had

higher emotional management scores were less likely to report change cynicism. The

results have several implications for the theoretical foundations, predictive validity, and

measurement of the emotional intelligence construct. Resultant conclusions are briefly

overviewed here, and explained in further detail within Chapter VIII.

A major implication of the present study was that the EI ability tests were found to be

mostly separate from items sourced from Rahim and Minors' (2002) other-report EI scale

(EIS). While the relationship between observer-rated EI and EI ability test results has not been

studied previously, less convergence was found between the tests employed here compared

with a study by Brackett and Mayer (2003). These researchers found a significant overlap

between the MSCEIT and two self-evaluation EI surveys of approximately $r = .20$. Formerly,

it has been noted that there is variation between one's professed intelligence and one's actual

intelligence (Mayer et al., 2004). Likewise, if ability tests are accepted to measure 'true' EI,

there would appear to be a dichotomy between perceptions of others' EI and their actual EI

levels.

There were some consistencies between the different modes of measurement, although

these were not widespread. For example, the MSCEIT branch scores explained 12% of the

variability in employee ratings of leader emotional management. This is arguably a small amount of explained variance for two scales allegedly incorporating the same constructs. The juxtaposition between the ability test results and EI survey ratings may reflect the different EI conceptualisations on which each tool is based. Findings also support the presupposition that the tools may be measuring discordant variables, with ability tests focusing on an underlying intelligence, and EI surveys concentrated on observable behaviours or characteristics (Ciarrochi, cited in Mayer, 2005). Chapter VIII explains the implications of this conclusion in terms of the definition and operationalisation of emotional intelligence.

In terms of exploring the predictive validity of ability-based EI, the current study adds to the extant literature by being the first to denote a relationship between scores on two EI tests and a number of organisational variables. Both EI tests predicted a significant amount of variance in the transformational leadership factors. This mimics previous findings that have outlined a link between survey-measured leader EI and a transformational style (e.g Barling et al., 2000; Gardner & Stough, 2002; Palmer et al., 2001; Sosik & Megerian, 1999; Srivsastava & Bharamanaikar, 2004). However, compared with the previous survey findings, the relationship was much weaker in the present research. The EI-transformational leadership relationship also diverged somewhat across the two tests. The implications of these specific discrepancies are also illustrated in the forthcoming conclusions chapter.

Another important result was that a leader's EI abilities together did not significantly predict levels of employee trust, change cynicism or intention to leave. This finding was consistent across both tests. However, results designated a link between the MSCEIT perception branch and both trust in the leader and trust in the organisation. Cynicism towards

organisational change was also lower amongst employees whose leaders had higher MSCEIT emotional management scores. Again, although much less prominent, these correlations were consistent in pattern with the significant relationships found between surveyed EI and these same variables (Study 1). However, the trust findings deviated from those of Schlechter and Boshoff (2003) who reported that surveyed EI was significantly yet weakly correlated with trust in the leader but not trust in the organisation. Nevertheless, the ability test results suggest that EI may be in some way related to the development of employee trust and the reduction of change cynicism within the workplace.

Despite the original nature of the research, there were several limitations that may have negated the utility of the findings. The most important limitation was the inadequate reliability some of the EI ability branches and tasks. This has important implications for the use of such instruments in applied settings. Dissimilar sample sizes, sample composition and test administration were potential causes of the differences in reported reliabilities between the current study and those of Mayer et al. (1999) and Mayer et al. (2002, 2003). Further limitations include, yet are not limited to; the leader sample sizes being too small for structural equations modelling, omitted outcome and antecedent variables, no controls for general intelligence and personality, the administration of the tests away from a controlled environment, and the generalisability of the leader samples. Future research may address some of these methodological limitations, as well as investigate intervention studies and cross-cultural differences.

In conclusion, although the results were unexceptional, Study 2 added appreciably to the available organisational literature by investigating a variety of relationships for the first time using applied data. It also addressed calls to focus on EI outside of the self-report domain (Mayer, 2005). Chapter VIII expands on the conclusions and implications that can be drawn from the results discussed in this chapter, as well as from Chapters IV to VI.

CHAPTER VIII

CONCLUSIONS AND IMPLICATIONS

The discussion sections of the previous four chapters offered a summary of the results and implications at each stage of the investigation. Chapter VIII recapitulates the key findings to illustrate how they contribute significantly to existing knowledge. Conclusions in relation to the hypotheses and research problem are described before summarising a number of theoretical and practical implications. Limitations to the research are then discussed prior to the consideration of recommendations for extending the research.

Conclusions about the Hypotheses

Study 1: Measurement Model

Overview

A principal contribution of the research concerns the identification of a number of items that reliably and economically measured the various constructs under investigation (H4.1, Chapter IV). Confirmatory analyses supported an eight-factor measurement model that encompassed dimensions of leader emotional intelligence (perception; management), TL (inspiring influence; concern/behaviour), employee trust (manager; organisation), change cynicism (pessimism) and intention to leave. Cross-validation procedures provided evidence for the reliability, convergent validity and divergent validity of the ensuing three to four item scales. The study implemented robust confirmatory techniques that, with some notable exceptions (e.g. Palmer et al. 2003a; Law et al., 2004; Rahim & Minors, 2003), remain fundamentally atypical in published EI-related research. The strength of the measurement model was heightened by controlling for levels of dispositional trust coupled with the use of

employee samples from a public sector organisation and a private sector company. The stability of the measures was further demonstrated on a split sample of employees from Australia and North America. The development of a robust measurement model responded to appeals to establish the construct validity of implemented instruments prior to assessing relationships between the variables that they measure (Anderson & Gerbing, 1982).

Dimensionality of the Original Instruments

Another primary contribution of the research is that it furthered knowledge of the factor structure of several instruments. As discussed in Chapter IV, the dimensionality of the parsimonious EI and TL scales did not remain true to the paradigms on which they were based. That is, only two discriminant EI factors emerged from Rahim and Minor's (2002) EI scale (EIS) instead of the five that were theorised from Goleman's (1995) model. Likewise, just two TL dimensions emerged from the transformational scale (an adapted Multifactorial Leadership Questionnaire (MLQ), Englebrecht, 2001, personal communication), where four were expected based on the original transformational archetype (Bass & Avolio, 1995). The results were consistent with research that has found a disagreement between factor analytic findings and the theories underlying other EI surveys (e.g. Palmer et al., 2003c; Petrides & Furnham, 2000; Jordon et al., 2002). Equally, there have been reports of the factorial instability of the multi-factorial leadership questionnaire and its alternatives (Avolio et al., 1999; Vandenberghe et al., 2002; Yukl, 1999). The results for the adapted MLQ supported Antonakis et al's (2003) acknowledgement that TL subdimensions may fluctuate across settings and response modes. Also, results arguably established some support for Antonakis et al.'s (2003) findings that idealised influence was related to two separate variables regarding a

leader's: (a) characteristics, and (b) actions. The idealised influence items within the current study were distributed across both emergent TL factors, with one of these factors expressly denoting behaviour, and the other referring to how a leader is positive, confident and inspirational. Current findings, however, were dissimilar to those of Yukl (1999) who found that none of the transformational dimensions were discriminate from one another.

The theory-structure divide for the EI and transformational measures is inopportune, as researchers such as Currall and Judge (1995) and Petrides and Furnham (2001) have emphasised the importance of developing and implementing instruments that have a clear association with their theoretical definitions. Currall and Judge (1995) further stated that many existing measures lack construct validity because of a flawed perspective, and that little use can be made of studies that do not provide information on the construct validity of the instrument. However, the emergent EI and TL measures were very reliable and were substantiated via tests of discriminate and convergent validity. While they were not representative of the theories on which they were modelled, the new measures had face validity. That is, the retained items were descriptive of the labelled factors.

There are several possible explanations as to why the results for the EI and TL scales were incongruent with their respective theories. Firstly, the original instruments might not have been measuring the target constructs appropriately. This could have been a possibility with the EIS given that Schelchter and Boshoff's (2003) factor analytic findings with this measure were also inconsistent with Goleman's (1995) five factors. Also, while there is some substantiation for the structural stability of the MLQ and its variants (Avolio et al., 1999; Jung

et al., 1998; Kraft et al., 2003), findings from the current study have more in common with alternate evidence just mentioned that has suggested the impermanence of the MLQ factor structure in different environments (e.g. Antonakis, et al., 2003). In sum, the results indicated that the inferential dimensions of the EI and TL instruments may not emerge when used with particular samples.

A related explanation is that the theoretical networks on which the EI and TL measures are based might be called into question. This seems to be a credible possibility with Goleman's (1995) EI model. Amongst others, researchers such as Fisher and Ashkanasay (2000) have implied that the subdimensions inherent to Goleman's (1995) model are speculative and devoid of enough voluminous evidence to be reasonably viewed as valid. While Goleman (2001a) amended his original model by collapsing the five EI factors into four, his newer typology also appears to suffer from sparse backing in the scientific literature. The accumulated evidence for the MLQ and its underlying theory seems comparatively stronger (see Howell & Costley, 2006), although Yukl (1999) has argued that the high intercorrelations of transformational behaviours may not make it possible to separate their effects in particular survey research.

A third explanation for the discordant dimensionality results for EI and TL is that aspects of the study design may have lead to the failure to extract the full underlying subdimensions. First, as mentioned in Chapter IV, different items might have been retained if all employee variables were not entered into the same exploratory and confirmatory analysis at once, but instead tested individually. Anderson and Gerbing (1982) and Holmes-Smith et

al. (2004) have stressed the importance of analysing constructs simultaneously rather than independently, so that SEM problems related to multicollinearity and inflated regression coefficients can be avoided. However, factor analytic results might be different in research using the same scales with different correlates and/or alternative statistical techniques. A second aspect of the study design that may have influenced the results is the differences between the selected study samples and those used in previous research. For example, the majority of the present study participants were located within two states of Australia. The EIS scale was, however, validated in seven alternate countries, and the adapted MLQ was tested with South African samples. In addition, the construct validation studies of both these instruments involved a self-report response mode rather than observer ratings (Rahim & Minors, 2002; Englebrecht, 2001, personal communication). This contradistinct focus on 'other' rather than 'self' may also have been a source of discrepancy. In sum, there a variety of theoretical, statistical and logistical explanations as to why the dimensionality of EI and TL instruments differed from their principal schemas.

The finding that the emergent 'trust in manager' and 'trust in organisation' factors were consistent with dimensions from their original instrument (Workplace Trust Scale, Ferres, 2002) adds to the existing psychometric literature. The trust factors were found to be very stable across disparate samples, a result that was consistent with previous research using different trust referents (Tan & Tan, 2000). By using specific organisational foci, the current study deviates from the bulk of trust research that has focused on personality or dyadic interpersonal trust (Butler, 1991; Cummings & Bromiley, 1996; Johnson-George & Swap, 1982; Rosenberg, 1957; Rotter, 1967, 1971). However, the findings are congruent with

research that has supported the factorial validity of trust measures aimed at different organisational levels, such as a management group (Clark & Payne, 1997; Cook & Wall, 1980), senior management (Albrecht & Sevastos, 1999) or co-workers (Cook & Wall, 1980; Ferres, 2002). Future researchers could be relatively assured that the structure of the manager and organisational trust scales from the present study will be upheld in similar samples.

The current study also appears to be one of the first to independently analyse and confirm the structural stability of a measure of cynicism about organisational change (CAOC; Wanous et al., 2000). Three items were found to adequately measure employees' broad pessimistic attitudes towards change in the organisation. This was consistent with Wanous et al's (2000) theory of change cynicism that underpinned the construction of the original subscale. Wanous et al. (2000) suggested that the pessimism items could be combined with another subscale measuring employee perceptions of those responsible for change. However, current results recommended that the original dimensions remain separated.

The results also corroborated the construct validity of Cohen's (1993) three-item intention to leave scale. Each of the original items was preserved through the analyses, adding to the research that supports the unidimensionality of the 'intention to leave' construct (Tett & Meyer, 1993). Positive reliability and cross-validation results suggested that Cohen's (1993) measure may be a smart choice for researchers wishing to measure employees' plans to withdraw as an outcome variable.

Study 1: Structural Model

Overview

The discussion at the end of Chapter V summarised several implications that stemmed from an analysis of the structural relationships between factors of leader emotional intelligence, TL, employee trust, change cynicism and intention to leave. A more complete discussion of how the results extend organisational knowledge is now presented.

Leader Emotional Intelligence and TL

The present study is one of the few that has studied the role of EI in transformational leadership (H5.1), and the first to cross-validate findings across two organisations using structural equations modelling techniques. Clear evidence was found for a relationship between leader EI and transformational behaviours, a result that is consistent with existing cross-sectional empirical research linking the two variables (Barling et al., 2000; Gardener & Stough, 2002; Sosik & Megerian, 1999). For example, results were aligned with findings from Barling, et al (2000) whose research showed that self-rated EI was positively connected to three related components of other-reported TL; that is, 'idealised influence', 'inspirational motivation', and 'individualised consideration'. The current study is also the first to use other-ratings for both EI and TL. Whereas general evidence supports that self-rated transformational leaders will invariably rate themselves as having higher EI (Barling et al., 2000; Sosik & Megerian, 1999; Gardener & Stough, 2002), the strength of the relationship may drop when leaders who are not self-aware rate their own EI, and employees rate transformational qualities (Sosik & Megerian, 1999). It was interesting to note that a leader's ability to perceive emotion was more important to the transformational behaviours relating to concern

and respect building, while an ability to manage emotions was linked more strongly to leaders having an inspiring influence. It is likely that within the context of the sample organisations, emotionally perceptive leaders are thought to be more sensitive to employees' needs. These leaders are also likely to be perceived as acting in ways that build respect amongst subordinates. Good emotional managers, on the other hand, seem to be expert at articulating a strong sense of purpose and influencing employees by communicating a compelling vision of the future.

A manager who was rated as having inspiring influence through the effective articulation of vision and purpose (TL-Inspiring Influence) was also thought to show concern for employees and act in ways that built respect (TL-Concern/Behaviour) (H5.2.). The association between the two TL factors is congruent with most research in the TL arena that has demonstrated the interrelated nature of transformational qualities (e.g. Antonakis et al., 2003; Yukl, 1999).

TL and Trust

The finding that TL was an important determinant of trust (H5.3) adds to our knowledge of trust propagation in the workplace. However, the results at this stage of the research were inconsistent. Here, a transformational leader with inspiring influence was found to advance trust at the organisational level, but not necessarily at the immediate manager level. Conversely, a leader who exhibited transformational behaviour and concern positively influenced trust at the immediate manager level, without a significant effect on trust in the organisation. Theoretical and empirical support for the central role of TL in trust development

comes from a variety of sources (Arnold, et al. 2001; Bass & Avolio, 1990; Bryman, 1992; Butler et al., 1999; Connell et al., 2003; Fairholm, 1994; Ferres et al., 2005; Gillespie & Mann, 2004; Jung & Avolio, 2000; Kotter, 1990; Mayer, Davis, et al, 1995; Pillai et al., 1999; Sashkin, 1988). However, the current model highlighted the differential effects of TL according to the level of trust being studied and the type of transformational characteristic. For example, there was no significant, direct effect between a manager who had inspiring influence and trust in that manager. This is similar to Podsakoff et al.'s (1996) findings that behaviours involving the articulation of vision or high performance standards were not related to trust in leadership. However, the nonsignificant relationship between trust in organisation and the 'TL-concern behaviour' has no point of comparison. Instinctively, the behaviours represented by the TL-concern-behaviour dimension may be more important to building trust between at a manager level compared to at the organisational level.

An alternative explanation for the differential effect of TL on the trust factors relates to the statistical techniques that were implemented. With the use of structural methods, the collinear transformational dimensions might have 'cannibalised' each one another. This could have created non-significant effects in regards to the different trust dimensions. For example, if 'TL-concern/behaviour' was placed in a structural model without the other TL dimension, it would have likely shown a significant relationship with trust in the organisation. This conclusion is supported by the manifold of moderate to strong positive correlations between each TL factor and the different trust dimensions (Table 4.12).

A third implication of the structural model findings is that they underpinned the direct importance of trust to significant organisational outcomes (H5.4 and H5.5). The results implied that an employee who trusts their manager was more likely to trust the organisation. In turn, this leads to reduced change cynicism and an intention to stay with the organisation. However, there were no direct effects between trust in a manager and either change cynicism or intention to leave. The likely reason for this again involves the inclusion of two collinear variables (in this case, trust in manager and trust in organisation) within the same structural model. Chapter IV displayed moderate to strong correlations between trust in manager and both of these outcomes, indicating that the variables are very much interlinked (Table 4.12). In the current model, however, trust in organisation played a more significant role in change attitudes and intention to leave, and likely superseded or mediated the effects of trust at the manager level. Support for this inference also comes from previous research which has found a strong negative relationship between trust in a manager and employees' intentions to leave (Cunningham, & MacGregor, 2000; Ferres et al., 2003; Mishra, & Morrisey, 1990). The relationship between trust in an organisation and turnover intention has been established by previous research (Costigan, et al., 1998; Tan & Tan, 2000), and was again evidenced in the current results.

The foci of the outcome scales could help to explain the relative importance of trust in the organisation relative to trust in a manager. Arguably, the change cynicism items address initiatives that may not be able to be controlled by employees' immediate managers. For example, items that mentioned 'attempts to make things better' and 'plans for future improvement' conceivably relate more to senior management, as major change initiatives are

regularly initiated at this higher level. Likewise, the intention to leave items (e.g. 'I think a lot about leaving the organisation') may also be related to organisation-level issues or job factors beyond an immediate manager's influence. One change cynicism item ('Suggestions on how to solve problems will not produce much real change') could be perceived as operating within the sphere of a manager, supervisor or employee. Generally however, the change cynicism and intention to leave items have more relevance for factors at a higher level. This line of reasoning conceivably accounts for the stronger relationship of these constructs to organisational trust compared to trust in one's direct leader.

A related implication is that the results inform knowledge pertaining to the antecedents and consequences of change cynicism (H5.5 and H5.6). The finding that organisational trust is associated with reduced cynicism towards change is related to views of social exchange (Blau, 1964). The finding is also consistent with the one existing empirical study in the area that found trust in senior management was related to less change cynicism amongst employees (Albrecht & Travaglione, 2003). In terms of social exchange, employees who perceive their organisation to be trustworthy may reciprocate with more positive attitudes towards the change initiatives advanced by the company. The current results implied that a reduction in this cynicism will translate into lowered intentions to leave. The pronouncement of a positive structural relationship between change cynicism and intention to leave is first finding of its kind in the present literature. These results arguably reinforce the importance of further research in this area.

A further contribution concerns the substantiation that EI and leadership attributes can be represented by higher-order factors (H5.7 and H5.8). The EI higher-order factor included both the 'emotion perception' and 'emotion management' dimensions. This higher factor could represent a general EI factor, and is consistent with Mayer et al's (2003) belief that the domain of EI is adequately illustrated by a array of models, including one-factor representations. With respect to their own scale, Schutte et al (1998) combined items from all dimensions into a general EI factor after exploratory factor analysis. In the current study, support for another higher-order factor came from an alternate model. This model placed EI with TL to effectively delineate a general leadership attributes factor. This higher-order factor suggested an evaluation about the overall qualities of the leader, in relation to emotionally intelligent leadership and TL. That is, when asked to appraise a manager's EI and transformative style, a general factor that underlined both constructs may have driven employees' evaluations of that manager. This tends to validate views from some theorists who have espoused strong links between the two constructs (e.g. Ashkansay & Tse, 2000; Jung & Avolio, 2000).

The cross-validation of the model across two heterogeneous organisations added considerable strength to the study conclusions (H5.9). The structural relationships were supported across public and private sector employees and after accounting for differences between Australian and North American respondents, as well as a divergence in dispositional trust levels.

Study 1: Longitudinal Model

Overview

Chapter VI sustained the results from Chapter V by providing evidence to support the cross-sectional structural relations over time. Structural equations modelling indicated that the meaning of the constructs remained stable when tested with a longitudinal sample (H6.1). The hypothesised longitudinal relationships between the constructs were also effectively upheld (H6.2 and H6.3). A discussion of the results in terms of each hypotheses clarifies the contribution of this phase of the research to the greater body of organisational knowledge.

Test-Retest Reliability and Construct Stability

The longitudinal design of the study afforded the opportunity to report on the test-retest reliability of the measures (H6.1). This is an uncommon occurrence in organisational behaviour research and provides the results with additional credibility. Despite the 11-month time lag, good test-retest reliability was established for each of the parsimonious measurement instruments. Stability coefficients ranged from .70 for EI-Management to .83 for Change Cynicism (Pessimism). The stability of the other-rated emotional intelligence items, while good, was lower than Schutte et al.'s (1998) and Palmer and Stough's (2003a) positive test-retest findings for their EI survey scales. This was to be expected given that both these studies employed a short interval between distributions, while the time lag was 11 months for the present research. The correct length of time interval depends on the constancy of the variables which causally determine that which is measured. Yet when it came to an employee rating a leader's emotional intelligence, the current results counter Garson's (2004) warning that a year might be too long for an opinion or attitude item. This was likewise for the TL items,

which also displayed good test-retest findings that were similar to those reported by Bass (1999). The results also established the test-retest reliability of the amended trust, change cynicism and intention to leave instruments. Each of these measures had not been tested previously with independent longitudinal samples. The finding that the measures were consistent from one time to the next suggests that researchers can confidently implement the instruments knowing that they pass an important psychometric standard. Although levels of the measured constructs may deviate over time and context, the meaning of the items are likely to remain comparatively constant.

Also in support of H6.1, SEM procedures verified that each construct measured at the second round of surveying was strongly associated with the corresponding construct measured at the first distribution. For example, an employee's rating of their leader's emotional management at Time 1 significantly influenced their perception of that leader's emotional management at Time 2. Evidence for this stability across time again indicates that the employee perceptions and attitudes measured by the survey remained relatively constant. For example, once an employee's opinion of a leader's EI and TL orientation is formed, it seems unlikely that this will change significantly over the course of one year. Equally, it seems that without intervention, an employee's trust attitudes and intentions to leave an organisation are also unlikely to diverge significantly over the same time-frame. The association between an employee's cynicism towards organisational change at Time 1 and Time 2 was especially strong. This was surprising given that cynicism is an affective construct and Bagozzi et al (1999) state that emotionally-based responses are conceivably more likely to be influenced by situational or time-dependant variables. However, other literature has stated that attitudes in

general are quite resilient (Eagly & Chaiken, 1993). In the present study, it seems that employees who initially felt disillusioned or deceived about change efforts continued to use cynicism as a perceptual defense in readiness for the next failure (Abraham, 2000). This attitude may be unlikely to change over time if, like in the current sample organisation, there are no significant development or communication operatives between survey evaluations.

Stability of the Structural Relationships

The longitudinal structural modelling was a value-added element of the research that allowed for the assessment of relationships over time (H2 and H3). As with the cross-sectional results, an employee's assessment of their leader's emotional intelligence was shown to have an enduring effect on whether that leader was perceived to be transformational. The relationship between leader emotional intelligence and TL was evidenced over the one year gap in surveys, signifying a particularly robust association between the two constructs. While this is the first study supporting the relationship longitudinally, this finding is again consistent with the cross-sectional literature just reviewed (Barling et al., 2000; Gardener & Stough, 2002; Sosik & Megerian, 1999). Further weight is lent to the results by the fact that long intervals between surveys generally result in more conservative relationship estimates (Wanous et al., 2000).

The longitudinal model also indicated that TL had a positive and lasting effect on the willingness of employees to engage in trust behaviours at both the manager and organisational level. Consistent with the cross-sectional model, there was a disparity of effect depending on the level of trust and the transformational category. The results suggested that once an

assessment of an inspiring leadership style is made, an employee's trust in the organisation is likely to be positive and remain unchanged over time. In a similar fashion, if a manager shows individualised concern and builds respect via transformational behaviours, an employee's trust in that manager is likely to be maintained over the same time-frame.

As with the cross-sectional model, trust at an organisational level significantly influenced cynicism towards organisational change and intentions to leave. The results denoted that trust in an organisation, over time, will likely influence the degree to which employees are reproachful and critical of change initiatives, as well as their desire to stay with a particular organisation. This finding may again be related to employee expectations of reciprocity (Abraham, 2000) or social-exchange theory (Dansereau et al., 1975). Ultimately, if employees have faith that the organisation is trustworthy, they will likely exchange this trust for more positive change attitudes and lowered intentions to leave, and vice-versa.

It seems counterintuitive that trust in an immediate manager did not directly influence employees' change cynicism or intentions to leave over time. However, these non significant findings were evidenced in the cross-sectional model and were hypothesised to appear as non significant paths in the longitudinal model. The explanations for these results offered in the previous discussion of the structural model also apply for the longitudinal stage. First, it is likely that trust in manager is important in influencing change attitudes and intention to stay or go. However, when trust in a manager is simultaneously included in a structural model with trust at the organisational level, the latter might mediate its effects across time. An alternate rationalisation may be that the items measuring the constructs of change cynicism and

intention to leave were perceived to be influenced by factors at the organisational level relative to the supervisory or immediate manager level.

Consistent with the structural model, the longitudinal findings supported that the effects of cynicism towards change on withdrawal intentions also persist over time. This was the first time that the effects of change cynicism have been studied longitudinally. It seems that an early emotional response to change has a lasting impact on behavioural intentions to stay or leave.

The time-series design also allowed for the analysis of differences between organisational constructs from Time 1 to Time 2. The results indicated no significant differences, a finding that was perhaps expected with the absence of any formal intercession. However, the findings did not clarify whether employees can easily change their perceptions of their leaders' EI levels and TL once formed. It might be expected that levels of trust, change cynicism and intention to leave would remain unchanged over time given that there were no significant management initiatives targeted to improve these areas. It is perhaps common sense to assume that at least some of the surveyed employees gained a greater familiarity of their leader's EI tendencies and level of TL over one year and, subsequently, changed their initial perceptions. Other respondents may have experienced significant personal events, either that altered their willingness to engage in trust behaviours, or amended their attitudes towards change. The findings, however, reflected that the majority of employee responses did not deviate emphatically from original ratings. These results are consistent with Mowday and McDade's (1979) proposition that global organisational variables, such as

organisational trust, tend to be relatively constant and develop gradually over time. Even still,

research opportunities should be sought to longitudinally study the same variables following

organisational development strategies. In particular, this will allow for the better

understanding of the incremental development, or erosion, of trust, change cynicism and

intention to leave.

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Study 2: Ability-Based EI

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Overview

The design of Study 2 meant that is was the first of its type within the field of

organisational behaviour. It implemented performance-based testing of leader EI via the

MSCEIT (Mayer Salovey Caruso Emotional Intelligence Test, Mayer et al., 2000) and the

AO-MEIS (Adapted Organisational Multifactorial Emotional Intelligence Scale, Mayer et al.

1997b; Ferres & Crombie, 2003). The design teamed scores on these tests with employee

reports of their leaders' EI and TL, as well as self-reported attitudes and intentions. Employee

ratings were obtained using the same survey items that were cross-validated in Study 1. The

EI items came from the emergent 'EI-perception' and 'EI-management' dimensions from the

EIS (Emotional Intelligence Scale, Rahim & Minors, 2002). Results indicated that there were

considerable differences between the two types of EI measures and their reflections of leader

EI (H7.1). Ability-based leader EI was nonetheless found to predict levels of TL (H7.2).

However, total leader EI ability scores were not related to employee trust in

manager/organisation, change cynicism or intentions to leave (H7.3 and H7.4). Despite these

findings, an examination of the MSCEIT branch scores identified links between a leader's

ability to perceive emotion and employee trust. Moreover, with the same test, a leader's

ability to manage emotions predicated decreased change cynicism amongst employees. The results have several implications for the theoretical foundations, predictive validity, and measurement of the emotional intelligence construct.

Measuring EI: Ability Tests versus Surveys

Study 2 enlightened debates concerning the relationship between EI surveys and EI ability tests (H7.1). Leaders' scores on the MSCEIT and the AO-MEIS were principally unrelated to employee perceptions of their leaders' EI as rated via the emergent EIS dimensions. This finding is congruent with Mayer et al's (2004) observation that one's perceived intelligence is likely to be markedly different from one's actual intelligence. They reasoned that EI ability tests are therefore expected to be weakly associated with self-reported EI. The results of this thesis indicated that EI ability tests might diverge from EI surveys all the more when an observer method is employed rather than a self-report instrument, although no previous evidence exists to support this assumption. Brackett and Mayer (2003) found a slightly greater overlap between the two types of scales compared to the present study, reporting small, yet significant, correlations between total scores on the MSCEIT and two self-evaluation EI surveys (SREIT, Schutte et al., 1998; EQ-i, Bar-On, 1997).

While, overall, there was a lack of equivalence between the measures, the minor commonalities between the EI ability tools and the EIS items also provide new insights into the measurement of EI. The MSCEIT branches, for example, explained 12% of the variability in employee ratings of leaders' emotional management. Here, the results indicated that scores on the emotion perception and emotion management MSCEIT branches were particularly

important. While 12% may be a satisfactory level of explained variance in outcome studies, it is arguably a small effect for a comparison of two scales supposedly measuring the same construct. The emotion perception branch of the AO-MEIS was also weakly but significantly correlated with employee ratings of how well a leader managed their emotions. This latter result was not unusual given that the ability to perceive emotion is thought to be a necessary prerequisite for the ability to manage emotion (Mayer et al., 1997b). In sum however, the negligible strength of relationships between the two types of measures was far from convincing. The full theoretical implications of these findings are explained shortly in an impending section within this chapter.

Predictive Power of Ability-Based EI

The current study adds to the present literature by being the first to denote a relationship between scores on an ability-based EI instrument and TL (H7.2). The AO-MEIS branches predicted 8% of the total variance in both TL survey variables. Slightly better results were obtained with the MSCEIT, which accounted for 16% of the variance of the transformational-inspiring influence dimension, and 11% of the transformational concern/behaviour factor. This replicates a pattern of positive relationships found in Study 1. It is also consistent with past survey research that has denoted a link between EI and TL (e.g Barling et al., 2000; Gardener & Stough, 2002; Palmer et al., 2001; Sosik & Megerian, 1999; Srivsastava & Bharamanaikar, 2004). However, unlike previous studies using EI surveys, it was obvious that none of the correlations between EI ability scores and TL were of high or even moderate strength. While this appears lamentable for the predictive validity of EI ability tests, Brackett and Mayer (2003, p. 10) argue that a realistic expectation is that "the best new variables"

ought to increase predictive precision in "important yet moderate" ways. Mayer et al (2004, p. 253) presented evidence to support that a 10%, 4% and even a 1% contribution of emotional intelligence to important outcomes was far from trivial. They noted that an APA psychometric testing taskforce concluded that psychologists studying complex behaviour should be "rather satisfied" with significant correlations of up to $r = .20$, and they could be "generally pleased" with correlations in the .25 to .35 area, such as those obtained in Study 2 (Mayer et al., 2004, p. 253).

A matter that complicated the interpretation of the results is that the relationship between EI and TL differed across the two ability tests. For example, the ability to perceive emotions was central to TL when the AO-MEIS was used, but not when the MSCEIT was implemented. The AO-MEIS result fits with the idea that leaders who are can accurately identify emotions are more likely to espouse an optimistic picture of the future, and to articulate a strong sense of purpose. The results also implied that better perceptual ability translated into transformational actions, such as engaging employees with an emotionally appealing vision, acting in ways that build employee respect, and showing individualised consideration of employee needs.

Contrasting with the AO-MEIS results, two findings from the MSCEIT were particularly salient in terms of their contribution to our knowledge of EI. First, a leader's emotional management was the most important influence on how they were rated in terms of idealised influence and transformational concern/behaviour. This result implied that a leader who can regulate their own/others' emotions is more likely to be seen as visionary compared

to a leader with poor emotion management skills. Equally, the results indicated that a leader with superior emotional management ability is more likely to be admired by staff, display thoughtful behaviour and to develop employee strengths. A second significant MSCEIT result was that the ability to utilise emotion was linked to transformational concern and behaviour. A leader with this skill is able to channel feelings to provide flexibility in planning, creativity in thinking, enthusiasm and a redirection of attention (Caruso et al., 2002). The link between using emotion and transformational concern/behaviour consequently corresponds to the idea that employees are more likely to admire, and be motivated by, a leader who acts in these respect-building ways (Bass, 1985).

At this point, the reason for the divergence of results across the two tests should be determined. The results showed that for some branches, leaders' scores on the AO-MEIS were not significantly correlated with their scores on the MSCEIT. Although the AO-MEIS and MSCEIT were both constructed around the ability model of Mayer and colleagues (Mayer & Salovey, 1997b; Mayer et al., 1999; 2000a; 2002) the discrepancy between the tests may have been caused by a difference in the nature and number of items/tasks. For example, the two tasks in the AO-MEIS 'Perception' branch included; (1) the perception of emotion in faces, and, (2) the perception of emotion in hypothetical stories. In contrast, the MSCEIT used a similar faces task but did not use stories. Instead, the MSCEIT asked participants to delineate emotions emanating from pictures of presented landscapes and designs. This MSCEIT task was arguably more abstract and subjective compared with the emotional vignettes of the AO-MEIS. Disparate tasks across the two tests may account for differences in the contribution of

EI scores to TL. Further research is warranted to clarify the anomalous results across the instruments.

Another implication of the results is that total leader EI did not significantly predict employee trust, change cynicism or withdrawal intentions (H7.3 and H7.4). However, there was some support for an association between EI and trust at the MSCEIT branch level. Small yet significant correlations implied that employees with emotionally perceptive leaders were more likely to report trust in both that leader and in the organisation itself. Once more, the ability-test literature does not offer a benchmark for these results. The results can be contrasted with those from Schlechter and Boshoff (2003) who reported that surveyed EI was significantly yet weakly correlated with trust in the leader, but not trust in the organisation. The current findings were also comparable to the findings of Study 1. Study 1 implied that leaders who were able to read emotions were likely to inspire greater levels of subordinate trust in their leadership and in the company for whom they worked. The relationship between emotion perception and the trust variables was, however, much more convincing in the first study. Regardless, the MSCEIT results intimated that a leader's ability to process emotional information may be somehow involved in the development of trust within organisational settings. The exact processes involved in this relationship remain indefinite, but it is likely that being able to perceive emotions is imperative for a leader to be supportive and caring. These behaviours may subsequently increase a leader's trustworthiness (Butler, 1991), with trust in a leader cascading into the development of trust in the organisation. The MSCEIT findings, although not encouraging in their strength, offer a basis for further exploration of EI-trust links within an ability test framework.

The MSCEIT results implied that a leader's ability to manage emotion is related to more positive change attitudes amongst employees, which is another unique finding in the EI literature. Here, the results insinuated that a leader's ability to regulate the emotions of others was related to reduced of change cynicism, but the ability to self-manage emotional responses did not have a significant effect on change attitudes. The survey results in Study 1 are the only point of reference in the literature for this finding, reporting a strong negative relationship between a leader's EI management rating and employees' cynicism about organisational change. Though weak in strength, the MSCEIT result is consistent with the notion that a leader's ability to manage the feelings of others makes them more adept change leaders (Ferres & Connell, 2004; Goleman, 1998; Schmidt, 1997). Indeed, underlying the successful management of change cynicism is the use of positive messages that appeal to logic and consistency (Reichers, et al., 1997). Change cynicism is also moderated via the provision of opportunities for employees to express feelings and receive validation, and by the publication of successful changes to transport emotion into the organisation (Reichers, et al., 1997). To do this successfully, a leader must have a developed ability to respond to and shift emotions, which is an essential feature of emotional management.

<div align="center">**Conclusions about the Research Problem**</div>

In all, the results of the two studies added appreciably to the existing literature. The results from the first stage of Study 1 supported the psychometric properties of a set of measurement instruments, including leader emotional intelligence (Chapter IV). Stringent construct validation procedures furthered knowledge of the underlying structures of the instruments, and generated the development of parsimonious and highly reliable scales. In

terms of factorial validity, the measurement of leader EI and TL was found to be particularly

problematic in comparison to the measurement of employee trust, cynicism towards change,

and intention to leave.

The assessment of the structural relations between the variables also made a

contribution to the study of leader EI (Chapter V). Using detailed structural equation methods,

the significance of EI to TL was supported. The research differed with respect to previous

studies by using observer ratings of EI and TL instead of self-report evaluations. The

subsequent finding that different dimensions of TL had differential effects on trust at two

levels also added to knowledge concerning the development of workplace trust. The results

also substantiated the crucial role of organisational trust to employee attitudes concerning

change, and posited trust in an organisation as an important factor related to lowered

intentions to leave. In addition, the study was the first to empirically examine the effect of

change cynicism on employee's intentions to withdraw from an organisation, with the results

implying that managers should look to the reduction of cynicism as one way to reduce

turnover costs.

The use of the longitudinal method to illustrate these relationships over time was a

substantial addition to the literature surrounding EI and leadership (Chapter VI). The findings

have greater generalisability when judged against cross-sectional designs. The results

indicated that leader EI was positively associated with TL from one time-point to another.

Indeed, each of the structural relationships supported in Chapter V was upheld over a 11

month time lag. Implementing a survey design using similar constructs and measures,

researchers may be justly assured of the direct or indirect role of emotionally intelligent leadership to factors such as a transformational behaviour and employee trust. The results of Study 1, therefore, made several unique and significant contributions.

Nonetheless, as reviewed in Chapters II and III, constant criticism has been leveled at EI research that employs survey measures (e.g. Davies et al., 1998; Roberts et al., 2001). Mayer and colleagues (Mayer, 2005; Mayer et al., 1999, 2000a, 2002, 2004) have been particularly vocal in their contention that EI research should be driven by performance-based data from EI ability tests rather than survey ratings. Despite its exploratory nature, Study 2 made a sizeable addition to this existing debate. The study confirmed the disparity of two EI ability tests compared to an EI survey instrument.

This was a study of many firsts in terms of investigating relationships that have not been previously explored between ability-based EI and a number of organisational variables. Within the ability-based framework, the results supported a positive relationship between leader-EI and TL, yet total leader EI did not impact on employee trust, change cynicism or intentions to leave. At the branch level of the MSCEIT, results showed that a leader's ability to perceive emotion was positively associated with employee trust in that leader and the organisation. MSCEIT results also implied that employees had less cynical change attitudes if they were supervised by leaders who were able to manage the emotions of others. In sum, these results suggest that leader EI ability is important to TL, and specific abilities may impact on selected employee attitudes and intentions.

From an ability perspective, the preliminary nature of the investigations reported in Study 2 caution against applying sweeping statements about the impact of emotionally intelligent leadership on subordinate's perceptions and attitudes. Researchers and practitioners must further address the theoretical and psychometric issues surrounding ability-based EI testing before strong conclusions can be forwarded. For example, a major shortcoming of Study 2 was the substandard reliability of both ability tests, which will be discussed in more detail shortly. It should also be mentioned that the relationships between emotionally intelligent leadership and the organisational variables of interest were incomparably stronger when EI was measured via the survey method. Yet before it is concluded that the EI survey items are more useful in delineating the effects of EI compared to the implemented ability tests, the limitations of survey-based EI instruments must be recalled (Chapter III). In addition, the argument that EI surveys do not assess 'true' emotional intelligence should be considered (Mayer et al., 2000). Essentially, the choice of instrument remains dependent on the EI model to which one adheres, and on the objectives of the specific research and/or planned organisational practices.

Implications for Theory

Specific theoretical implications for the various constructs of interest were considered within the preceding discussion of the study hypotheses. Yet the findings also have implications for the wider body of knowledge concerned with the substantive nature of emotional intelligence within its parent disciplines of human behaviour and psychology.

The combined results from Study 1 and Study 2 prompt a revisit to the definition and operationalisation of emotional intelligence. The disjunction between the EI ability test results and the EI survey was likely caused by the tools being based on different definitions of EI and the probability that they measure separate constructs. If one ascribes to the ability-model, then EI involves the capacity to reason in regard to emotions and the capacity to use emotions to assist cognition (Mayer & Salovey, 1997b). Mixed-model approaches, on which most surveys are based, tend to denote an array of competencies and skills, including emotion perception and management (Mayer et al., 2004). For the current study, the retained items from the Rahim and Minors (2002) EIS were pitched towards competencies and behaviours rather than the emotional reasoning skills that were targeted by the ability-tests. Ciarrochi (cited in Mayer, 2005) has argued if two measures with the same name do not relate, it does not follow that one tool is accurate and the other inaccurate. This seems a valid point, but a question remains in regards to the present results and similar findings in the literature (Brackett & Mayer, 2003). If high ability-test scores are a true indication of leader EI (Mayer et al., 2004), why aren't high scorers perceived to be acting in emotionally intelligent ways, as indicated by employee ratings? The tools may have been measuring separate constructs, but arguably there should have been a stronger degree of overlap between an underlying ability and behaviours theoretically linked this ability.

The results of the present study may relate to the assertion that emotionally competent behaviours represent the extent to which an individual has mastered specific abilities that are built on an underlying EI (Goleman, 2001a). That is, EI ability tests may be offering an indication of potential EI behaviour (Brackett & Mayer, 2003). As Gohm (2004) stated,

"knowing what one *should* say, or how one *should* behave….does not mean that one will actually act accordingly in such a situation" (p. 225). For example, a leader may know that to build positive relationships with employees, he or she should resist inappropriately criticising employees. Possession of that knowledge does not mean, however, that the leader will limit this type of critical behaviour.

A speculative model of the connection between EI and behavioural outcomes is presented as Figure 8.1. The model draws on current results, and also addresses Ciarocchi's (2005, in Mayer, 2005) argument that the concepts of EI and emotionally intelligent behaviour should be divided. In the figure, it is theorised that emotional events may impede or facilitate emotionally intelligent behaviour. A positive or negative response may depend on the various processes that are associated with an individual and his/her situation (Ciarocchi, 2005, cited in Mayer, 2005). EI, as an ability, is just one set of processes hypothesised to promote emotionally intelligent behaviour. A cognitive appraisal of an emotional event may then impact on emotional reactions, and these reactions subsequently determine behavioural responses. The model is consistent with existing psychological theory denoting a strong interplay between emotions, cognition and behaviour (Weiss & Cropanzano, 1996). The existence of alternative influences on EI behaviour can also explain why a leader who has high EI (as an ability) can act in emotionally *unintelligent* ways in particular contexts.
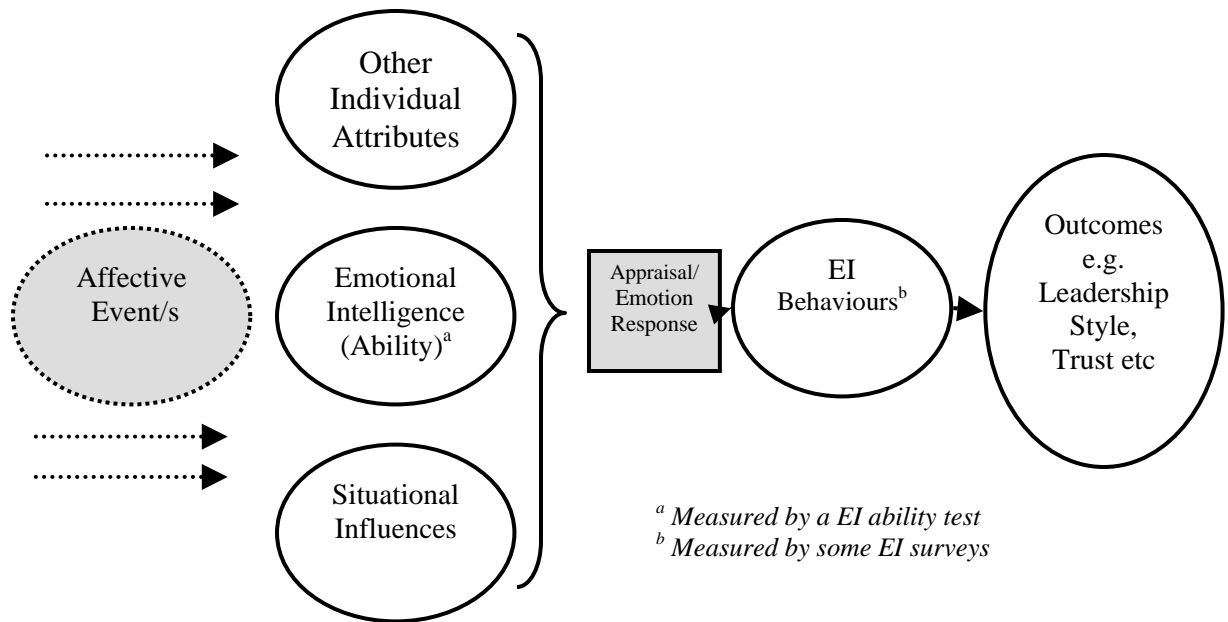
Figure 8.1 A Process Model Showing the Possible Connection between Emotional
Intelligence and Emotionally Intelligent Behaviour

Practical Implications

The research has a practical application related to the measurement of each construct.
The succinct three or four item measures from the employee survey may be compatible for
inclusion in staff surveys or projects where long questionnaires are impractical. Within the
sample frame, the confirmatory factor analyses reported here suggested that the
constructs can be dependably measured in private or public sector contexts and
that people are clearly able to differentiate between the different concepts. The
comprehensiveness of the employed validation techniques also implied that organisational
practitioners can be reasonably assured that the emergent constructs can be
reliably assessed.

A related consideration involves the use of EI ability testing in organisational settings. The low reliability of at least one of the branches in both of the EI tests employed in the research implied that they may be inappropriate for use in some applied situations, particularly in terms of selection decisions and the assessment of performance or promotion. Matthews et al. (2002) acknowledged that the reliabilities of EI performance-based scales, in almost every instance, are far from optimal from the perspective of making valid assumptions. Yet most research, including Study 2 of the present research, has found that the total test reliability of EI ability scales is quite good (Mayer et al., 2004). These studies recommend that if scores on the MEIS or MSCEIT are used for interpretive purposes or to provide feedback to organisations and individuals, the test administrator should focus more on scores at the total-test level rather than individual tasks or even branch scores. In addition, most criticism of ability-test reliability has come from research conducted before 2002 and is based on earlier versions of the tests that are available today. Although the latest version of the MSCEIT was implemented in the current research, the poor psychometric results obtained here may not be indicative of future findings. Current results could have been a reflection of the study design, administration techniques and sample, rather than the test itself. The real value of tests, such as the MSCEIT, in the workplace will be their continued ability to predict important outcomes above and beyond traditional criteria, such as cognitive intelligence or personality. There have already been some recent developments in this area (e.g. Lopes et al., 2004; Ciarocchi, 2005, in Mayer, 2005). As associations between EI and specific criteria are better understood, it is reasonable to forecast that higher level predictions may materialise (Mayer et al., 2004). The

issue of ability-tests playing a larger role in the evaluation of performance, and the well-being

of employees, could be revisited as stronger findings emerge.

The results also contribute to our understanding of the important role of emotional

intelligence in transformational leadership. From a practical perspective, it is noteworthy that

the development of both variables might fall within some control of organisational members

and HRM professionals. Although the evaluation of EI development is in its infancy

(Dulewicz & Higgs, 2004), Boyatzis (2001) highlighted that there is a considerable amount of

research to support that training programs, mentoring and cognitive therapies may change

moods and behaviours conceivably linked to emotional competencies. Chapter II also noted

that the fields of neuroscience, educational psychology and management training provided

evidence to support the possible malleability of EI and its related behaviours. Likewise,

previous research has indicated that managers can be trained to use a transformational style or

encouraged to adopt a TL orientation (Barling et al., 2000). Human resource professionals

may thus assist leaders and employees to some extent by the development and implementation

of training programs that foster emotional intelligence and the interpersonal skills involved in

effective TL. Based on interpersonal considerations, professionals can also provide

consultation to leaders on how to approach the selection, training, and performance

management. This may include behavioural interviewing around EI skills with a focus on

displayed leadership behaviours as performance criteria. In this regard, employee opinion

surveys and multi-rater feedback processes could be also be used to regularly assess employee

attitudes and perceptions surrounding these variables.

On an associated point, although some attitudes may be fairly resistant to change (Eagly & Chaiken, 1993), the results suggest that the ongoing selection and development of inspirational leaders may leverage trust behaviours throughout the company. Within a psychological contract structure (Abraham, 2000), transformational leaders could expect that occasional breaches of employee trust may not have long lasting effects on leader-employee trust relations, or on trust in the organisation. Organisations and managers who demonstrate concern, support, honesty, care and appreciation towards employees, are likely to create a work dynamic that leads to a trusting climate, a more stable workforce and greater employee attachment. Support mechanisms could also exert an influence on organisational trust by establishing rewards systems which are perceived by employees to be supportive of good performance. On an individual level, leaders can engender trust by keeping personal information confidential, noting the value of employee input and following words with action. Considering the potential change resistance attempts that might stem from pessimism (Wanous et al., 2000) and the high costs of employee turnover, current results insinuate that active attempts to manage trust creation could lessen the impact of psychological contract violations.

From a practical standpoint, the study also highlighted the importance of managing employee change attitudes. To reiterate, long-standing cynicism towards change and greater intentions to leave might be expected in employees working in environments they consider to be less than trustworthy. In the present study, it seems that employees who initially felt disillusioned or deceived about change efforts continued to use cynicism as a perceptual defense in readiness for the next failure (Abraham, 2000). This attitude may be unlikely to

change over time if, like in the current sample organisation, there are no significant

development or communication operatives. Turnover may well be reduced if an organisation

has previously engendered positive feelings around change initiatives of the past. As cynicism

about change is thought to be self-fulfilling (Wanous et al., 2000), managers must be aware

that withdrawal effects could be exacerbated if change is initiated within organisations with

preexisting negativity. One strategy would be to publicly communicate successful changes in

the past and to fully explain previous failures (Wanous et al., 2000) so that lower turnover

intentions may transpire. Consequently, there are important people-based considerations for

organisations and HRM professionals should emphasise to create less cynical cultures.

Limitations and Extensions of the Research

The many contributions of the research must be contextualised within its

corresponding limitations. Despite the unique methodology and potential utility of the

research for practice, the less than desirable reliability of the ability tests was not the sole

limitation. The shortcomings of the Study 1 included common-method instrumentation, the

lack of three-wave longitudinal data, the foci of the survey questions, privacy and ethical

considerations of online research, and the reliance on factor analysis as the only means to

assess construct validity. In addition to the poor ability-test psychometrics, the chief

limitations of Study 2 included the relatively small leader sample sizes, the administration of

complex ability tests outside of a controlled test environment, and the possibility that there are

no 'correct' answers to emotional reasoning problems. Common drawbacks to both studies

encompassed the omission of potentially important variables, the cultural specificity of the

results, and the lack of qualitative data. Here, each limitation is explained and

recommendations for future research are offered where feasible.

The Employee Survey

A primary limitation of the research involved the instrumentation. Specifically,

common-method bias could have arisen by measuring all variables from the same individual

survey, at the same time, with the same questionnaire. This problem is inherent in most

research using self-reports, yet it was possibly less of a problem with the present

questionnaire given the mix of observer ratings and self-report for alternate variables.

Moreover, the SEM procedures in Chapter IV deleted items with a high degree of statistical

overlie and subsequently provided some control for multicollinearity. However, the retained

items might have changed if separate surveys were distributed for each construct at different

times. Prospective studies may wish to address this methodological issue. Here, practical

considerations negated the implementation of such a design. It would have been logistically

laborious to deliver multiple surveys given the real-world organisational settings, the amount

of responses required for SEM, and the number of variables included in the questionnaire.

Another option would have been to obtain self-ratings, or additional independent ratings (e.g.

from peers or supervisors) of leaders' EI and leadership style. These could have been used to

test relationships with subordinate assessments and reduced common source bias. Practically,

this latter alternative would have added to the complexity of the already multifaceted study

design and analysis. In future studies, however, researchers may wish to consider this option.

The longitudinal methods employed in the study could also be extended in upcoming research. While longitudinal analyses allow researchers to draw strong conclusions about causality of relationships compared to cross-sectional designs, there are three additional suggestions to improve on the limitations of the present design. First, supplementary research may draw on three or more waves of data to test possible causal directions more completely. It has been suggested that three wave data provides the best test of causality (Willet, 1988), but this requirement has to be balanced by the reduced practicality of research that increases costs and time commitments and risks 'survey-fatigue' in the participating organisations (Porter, 2004). While the lack of three-wave data may have bene a limitation of the present study, the organisation under investigation implied they were not interested in repeat distributions, despite being very supportive of the research. This prevented the modelling of reciprocal relationships between the employee survey constructs. A second consideration for future work may be the use of different time intervals between survey distributions. This may further promote an understanding of the mechanics behind the tested relationships. A third opportunity involves the evaluation of interventions that organisations might introduce to improve leader emotional intelligence, leadership style and subsequent employee attitudes and intentions. Such research would fill a dearth in the organisational EI literature in particular.

The foci of the employee items may have been one of the problems in the present study. Initially, while the observer method for EI and TL annulled the problem of leaders distorting their own responses, the wording of these scales meant that they were measuring employees' perception of their leaders' EI and style of leadership, rather than assessing actual levels. To gain an accurate representation of a leader's EI and leadership ability through the observer

method would have required respondents to have reasonable insight. In effect, to ascertain another's EI correctly, one must also be relatively perceptive. The present research is useful in that both perceived and actual EI have been shown to be important and perhaps independent predictors of various outcomes (Ciarocchi et al., 2001). This is because affective responses are dependent on perceptions, or, "what people believe to be true can be as important as what is true" (Ciarocchi et al., 2001, p. 30). Employees' affective responses and subsequent behaviours are thus likely to be reliant on their own world views.

The use of an Internet survey for the private sector organisational sample may have had some disadvantages. Internet research makes it difficult to guarantee complete anonymity of the respondents regardless of the level of technology implemented (Cho & LaRose, 1999). The current researcher used a University website and administrator as a conduit to collect data, which protected any unique identifiers such as IP addresses. Yet, as with emails and other online communications, Internet research may leave a soft-copy trail that can be accessed by outside sources (Cho & LaRose, 1999). In addition, while the response rate with the second organisation was still acceptable and all employees had access to a computer, the Internet method may have discouraged those with less IT skills. Nonetheless, method effects associated with online distribution were not apparent when the results were cross-validated with a sample that used the traditional pen-and-pencil technique. However, future research should consider this methodological factor.

The use of exploratory and confirmatory factor analysis as the solitary technique to assess the construct validity of the scale also raises issues. Froman (2001) argued that there

are other components of construct validity that are not addressed by factor analysis. Goodwin and Goodwin (1991) noted some researchers rely too heavily upon factor analytic studies to the exclusion of other techniques of assessing construct validity. For example, confirmatory factor analysis may dramatically cull a long questionnaire, with a possible consequence being an inadequate coverage of the original theory on which it is based. Other methods of construct validation include the key informant method and, given that a researcher is able to use multiple measures teamed with multiple distributions, termed the 'multitrait-multimethod' (Bagozzi et al., 1991). Bagozzi et al. (1991) provided alternate techniques. However, one should remember that factor validity is but a single aspect of documenting precision in measuring a construct, although it is influential and widely implemented (Froman, 1991).

Ability-Based EI

There were some key limitations to the second study, with the most salient being the questionable reliability of some of the EI test components, as formerly discussed. Another limitation was that while adequate statistical power was obtained in the study, the leader sample sizes were far from optimal. On the positive side, the response rate of over 70% was excellent for both leader samples, and more than originally expected (see Chapter III). The encouraging reaction was indicative of widespread leader interest in the research project. Notwithstanding, an increase in participant numbers might have augmented the size of the correlations and allowed for structural equations modelling techniques to be implemented.

Another limitation was that the EI ability-tests had to be given to the leaders outside of a controlled test environment. The study methodology involved obtaining confidential and

anonymous responses from leaders in twenty five geographically dispersed locations. This requirement prohibited the use of supervised administrative methods. Mayer et al. (2000b) recommended that these tests be administered in the presence of a trained mental health professional who can watch respondents answer a few items to ensure that they read and consider each item properly. The researcher, while a psychologist, could not determine if the test environments were free from distractions or bias. Whether or not the leaders passed on the matched employee surveys to their staff was also beyond the control of the investigator. In addition, inventories could not be scanned for incomplete answers in the presence of the respondent. Moreover, although the researcher's contact details were available to leaders undertaking the test, respondents could not quickly clarify any ambiguous items. As Mayer et al. (2000b, p.13) surmised, "results obtained via remote administration must be interpreted with caution". As recommended by Mayer and colleagues (2000b), the phrase "the data obtained requires additional validation because a nonstandard administration protocol was used" (p.13) was added to individual feedback reports. This point about the nonstandard administration was also reiterated during feedback sessions.

The remaining limitation specific to the Study 2 concerned a general methodological issue involved with all EI ability-testing. Expressly, some researchers have argued that ability tests are flawed because there can be many 'correct' answers to the variety of emotional stimuli presented in such tests; that there may be no such thing as a correct answer to these problems (Roberts et al., 2001). Subsequently there appears to be disagreement amongst experts on the appropriate solutions using consensus methods (Mayer et al., 2003).

General Issues

A degree of unexplained variance in Study 1, and the negligible amount of explained variance within Study 2, confirmed the absence of some important factors that were not included in the research. Along with EI, potential studies may also include alternate predictors of TL, such as source motivation (Barbuto, et al., 2004), person-position fit (Sosik et al., 2002) and personality (Atwater & Yammarino, 1993; Hetland & Sandal, 2003; Howard & Bray, 1988). Among others, trust determinants may usefully extend to locus of control (Carnevale & Wechsler, 1992), the length of the trust relationship (McLain & Hackman, 1999), communication processes (Mishra & Morrisey, 1990), perceived organisational support (Tan & Tan, 2000), procedural justice (Konovsky & Pugh, 1994) and psychological contract breach (Robinson, 1996). Possible antecedents of cynicism towards organisational change may include psychological contract breach, the amount and success of previous change efforts, and participation in decision-making (Wanous et al, 2000). Finally, extended determinants of intentions to leave may include a myriad of factors already mentioned, such as commitment, procedural justice and perceived organisational support.

There were also a number of omitted EI outcomes that may have been usefully analysed, such as leadership performance measures. While access to this sensitive data is difficult, the area offers a significant opportunity for further research. Similarly, the study did not measure or control for general intelligence and overall personality. These factors have demonstrably explained variance that is theoretically attributable to EI (Mayer et al., 2004). Gender differences, position level and the length of the manager-employee employment relationship might have also been usefully researched. The scope of the study, along with

organisational requirements, restricted the number of organisational measures that could be included in the final employee questionnaire. The probability of an increased response rate offered by a questionnaire of sensible length may have outweighed the potential disadvantages outlined.

A further limitation was the limited generalisability of the samples. This relates mostly to Study 2 considering the lack of cross-validation procedures. The findings for Study 2 are thus restricted to the population sample of Australian public sector employees. Yet care must also be taken when taking a broad view of the findings from Study 1. Despite the robust methodology, all respondents were from Australia or the United States, two Western countries with many cultural similarities (Westwood & Posner, 1997). Research should be conducted with additional leader samples in different organisational contexts and cultural settings. In particular, different cultural norms need to be taken into account when measuring EI via ability-tests (Gohm, 2004). Research has indicated that persons from cultures with lower norms for emotional expressiveness, such as Japan, will respond entirely differently to tests of recognised emotion (Shioiri, Someya, Helmeste, & Tang, 1999). Similarly, the emotional management items in the EI-ability tests are situation specific, and there would be a concern about the culturally 'correct' response for a particular item, depending on the cultural norms at home and in the workplace (Gohm, 2004). The investigation of cultural differences may illuminate the processes involved in EI, and should be targeted for future research.

Future studies should look to extend the current research in three additional ways. Firstly, qualitative data and follow-up would enhance the depth of knowledge around the

effects of emotionally intelligent leadership in organisations. Conceivably, future studies

could also heed Gohm's (2004) advice to examine actual respondent behaviour in

experimental settings that are closely aligned with EI items. The use of observational data

may offer an improvement on the isolated use of surveys as behavioural indictors. Third, to

further explore the predictive validity of EI, the effects could be tested in a controlled

intervention study where the MSCEIT and an EI survey are distributed before leaders

undertake leadership development and coaching initiatives with trained external practitioners

or business leaders. Leader EI scores and subordinate perceptions and attitudes could then be

compared to baseline data and also weighed against a control group whose leaders were not

involved in any intervention.

Conclusion

The pervasiveness of the EI concept in the popular media means that emotionally

intelligent leadership will probably remain a central issue to organisations operating within

highly turbulent, dynamic and competitive environments (Cherniss, 2001). Rapid change and

an increasingly diverse workforce contribute to the need for organisations to gain a

competitive advantage. It remains to be confirmed if EI and EI development amongst leaders

and employees can unequivocally provide this edge. Study 1 in the present research, at the

very least, indicated that emotionally intelligent leader behaviours can cascade to positive

management methods and employee attitudes. The validation procedures used throughout the

analysis yielded robust and consistent findings. With the second study, despite unexceptional

findings, support was found for the positive role of EI in transformational leadership. Specific

EI abilities may also, to a small extent, impact on organisational trust and cynicism towards

organisational change. Here however, it proved difficult to reconcile the contrasting findings between the two types of measures utilised in the research. As to whether the intervention of leaders with high levels of emotional intelligence and TL is an ethical process when trying to influence employee attitudes and intentions such as trust, change cynicism and withdrawal intentions remains open to debate. The research offers many starting points to explore this issue, and contributes to existing paradigms.