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**CHAPTER 1: OVERVIEW**

## 1.1 Introduction

In the last few years, two organisational concepts, emotional intelligence and organisational culture, have attracted much scholarly interest in respect to their potential effects on the success and superior performance of organisations. Organisational culture has received much attention in the last two decades due to its effects and potential impact on organisational success (Rashid, Sambasivan & Johari, 2002: 708). The pioneering work of Deal and Kennedy (1982) incited the interest of researchers in the concept of organisational culture, and how these values and philosophy guide employees' behaviour in the organisation towards greater success.

A lot of scholarly attention has been focused on the hypothesis that strong cultures, defined as "a set of norms and values that are widely shared and strongly held throughout the organisation" (O'Reilly & Chatman, 1996; Van de Post, De Coning & Smit, 1998; Rasid, et al., 2003; Ogaard, Larsen & Marnburg, 2005), enhanced organisational performance. Schein (1985) argued that the role of leader was fundamental in the process of creating this strong culture of the organisation. This hypothesis was based on the intuitively powerful idea that organisations benefit from having highly motivated employees dedicated to common goals (Peters & Waterman, 1982; Deal & Kennedy, 1982; Kotter & Heskett, 1992; Ogaard, et al., 2005). The organisational performance benefits of a strong culture were thought to derive from three consequences of having widely shared and strongly held norms and values: enhanced coordination and control within the organisation, improved goal alignment between the organisational members and the increased employee effort. In support of this argument, quantitative analyses have shown that organisations with strong cultures outperform organisations with weak cultures (Kotter & Heskett, 1992; Gordon & DiTomaso, 1992; Burt, Gabbay, Holts & Moran, 1994).

Research during the last twenty five years has consistently pointed to a set of competencies – some purely cognitive but most emotional – such as self confidence, initiative and teamwork as making a significant difference in the performance of individuals. These competencies represent what is called emotional intelligence and are believed to be predictive of superior performance in work roles (Goleman, 2001). Increasing attention has

been given to the role of leader emotional intelligence not only in organisational effectiveness but also in organisational performance (Goleman, 2001).

Goleman, Boyatzis and McKee (2002) have shown the link between EQ and organisational climate. There is also a small body of work that had examined the relationship between organisational culture and organisational performance. For example, Higgs and McGuire (2001) had shown the relationship between individual emotional intelligence and organisational culture and the relationship between leadership and emotional intelligence. However, the weaknesses of Higgs and McGuire (2001) study was that it was an exploratory study and researched only eight companies that provided up to 20 managers to complete each tool. Denison (1990) as well as Kotter and Heskett (1992) had shown the linkage between organisational culture and organisational performance. However, no studies have explored the empirical relationship among leader (EQ), organisational culture and organisational performance, which is the aim of this study. The researcher also makes a practical contribution in advancing the understanding of these three relationships in the Technical Services Centres of a large industrial organisation in South Africa. It is one of the first studies to empirically test the linkages between the leader's EQ, organisational culture and organisational performance. Although these ideas have been primarily theoretically promulgated, they have not been empirically linked and tested. The novelty and significance of the present study was confirmed when the researcher had to apply for permission to utilise Goleman's well-known and validated EQ measurement tool—the ECI 2.0 (Appendix A, B, C). The research proposal for the study had to be submitted to an international research committee for review prior to the granting of permission to use the scale. Subsequently permission was granted and the significance of the study was endorsed. The background to the research problem is discussed next.

## 1.2   Background to the research problem

### 1.2.1   Leadership theories – a historical perspective

There is little doubt that mankind has been intrigued by the nature of leaders and leadership since the times of Plato. However, as Goffee and Jones (2000) pointed out, the belief in rationality, which has dominated our thinking since the enlightenment, was challenged by the work of Max Weber and Sigmund Freud. This led to the start of a reappraisal of our thinking

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about leadership and attempts to define and understand the phenomenon. This development in thinking may be grouped into six periods. These six periods and their historical development are summarised in Table 1.1.

**Table 1.1: Historical Development of Leadership Theories**

| Period | Predominant "School" or Paradigm | Predominant Constructs | Key References |
|---|---|---|---|
| 1920's | Trait Theory | Leadership can be understood by identifying the distinguishing characteristics of great leaders | • Weber (1947) |
| 1950's | Style Theory | Leadership effectiveness may be explained and developed by identifying appropriate styles and behaviours | • TannenBaum & Schmidt (1958) |
| 1960's | Contingency Theory | Leadership occurs in a context. Leadership style must be exercised depending on each situation | • Fiedler (1967)<br>• Hersey & Blanchard (1969) |
| 1970's | Charismatic Theory<br><br>Servant leadership (Greenleaf) | Leadership was concerned with the charismatic behaviours of leaders and their ability to transform organisations | • House (1976)<br>• Burns (1978)<br>• Conger & Kanungo (1988)<br>• Bryman (1992) |
| 1980's | New Leadership/Neo-Charismatic School | Leadership and management were different. Leaders require a transformational focus which encompassed a range of characteristics and behaviours in | • Bass (1985, 1997)<br>• Conger & Kanungo (1988)<br>• Shamir (1992)<br>• Bennis (1989) |

| Period | Predominant "School" or Paradigm | Predominant Constructs | Key References |
|---|---|---|---|
| | | addition to charisma | • Avolio, Gardner, Walumbwa, Luthans & May (2004) |
| Late 1990's | Transcendental Emerging Approaches<br>a) Strategic Leadership<br>b) Change Leadership<br>c) Emotional leadership<br>d) Spiritual leadership<br>e) Authentic leadership<br>(heavily influenced by positive psychology) | a) Leadership was understood by examination of strategic decision-making by executives<br>b) Leadership was inexorably linked to the management of change. Leader behaviours were understood in the context of the work of delivering change<br>c) A leader needed to make sure that not only was he optimistic, authentic, high energy mood, but also that, through his chosen action, his followers felt and acted that way, too. | a)Finkelstein & Hambrick (1996)<br><br>b)<br>• Kotter (1994)<br>• Higgs & Rowland (2001b)<br>• Conner (1999)<br><br>C) Goleman, Boyatzis & McKee (2002)<br><br>e) Avolio, et al. (2004) |

(Adapted and updated from Higgs and Rowland, 2001a)

The summary provided in Table 1.1 suggests that one "school" gains dominance over another as understanding develops. In reality this is not the case. For example, the trait approach continues today, albeit in a refined manner. Goffee and Jones (2000) acknowledged that their approach to identifying the core aspects of leadership was rooted in trait theory thinking. However, they have replaced personality elements with an examination

and categorizations of leader behaviours and thus changed the initial paradigm. Scholars like Collins (2001) in his book, *Good to Great* offers new traits (i.e. humility and personal will) as the 'right' traits for effective leadership.

The long history of leadership research has, according to Kets de Vries (1993), failed to provide any clear or consistent insight into, or understanding of, the nature of leadership and the requirements of an effective leader. However, he pointed out that this was perhaps unsurprising, given that the practical experiences of working with leaders showed that effective results can be achieved in many different ways.

"The explosion of studies on leadership had made answering the question of which styles were preferable to others a remarkably difficult business. The more leaders I encountered the more difficult I found it to describe a typically effective leadership style" (Kets de Vries, 1993; pxi). Other prominent scholars like Yukl (2004) concurred with Kets de Vries's observation.

This study does not focus on leadership styles although its linkage is appreciated. The focus instead is upon Schein's hypothesis that the leader plays a critical role in the formation of culture in their organisations. Thus, the interest is not in leadership style but the role of leadership in the creation of organisational culture. What is relevant from leadership theory is Goleman's assertion that effective leaders must possess emotional intelligence (EQ). Goleman (1998b) clearly emphasised the synonymous relationship of leadership and EQ.

### 1.2.2   Leadership and EQ

Goleman (1998b) considered leadership and emotional intelligence (EQ) to be imperative for effective leadership:  IQ and technical skills do matter, but mainly as threshold capabilities. Recent research showed that emotional intelligence was the sin qua non of leadership (Goleman, 1998b). Without it, a person could have had the best training in the world, an incisive, analytical mind, and an endless supply of smart ideas, but still would not make a good leader (Goleman, 1998a: 92).

A person with high emotional intelligence has the ability to understand themselves and others and adapt behaviours to a given context. Individuals with high EQ and thus demonstrable personal and social competence may be oriented towards a transformational leadership style with emphasis on motivating and influencing others (Barling, Slater & Kelloway, 2000; Gardner & Stough, 2002). Research shows that an organisation that was characterised by EQ had increased cooperation, motivation, and productivity and increased profits, an association also reflected in transformational leadership literature (Bass, 1990).

### 1.2.3   Background to the development of emotional intelligence

The roots of the development of the concept of emotional intelligence appear to lie in the apparent inability of traditional measures of "rational thinking" (e.g. IQ tests, SAT scores, grades, etc.) to predict success in life. Research indicated that IQ at best contributed about 20% of the factors that determined success in life (Goleman, 1995).

The search for characteristics other than IQ which adequately explained variations in success is by no means new. Thorndike (1920), in reviewing the predictive power of IQ, developed, the concept of social intelligence as a means of explaining variations in outcome measures not accounted for by IQ. The interest in a broader view of the totality of intelligence was resurrected by researchers such as Gardner and Hatch (1989) who developed and explored the concept of multiple intelligences and found no significant relationships with IQ measures. This led to the conclusion that the "other" intelligence proposed by Gardner (1993) was distinctly a different construct from IQ. Salovey and Mayer (1990) first called this "other" intelligence *emotional intelligence* (EQ). EQ represents two of the seven ("multiple") intelligences theorised by Gardner (1993), namely interpersonal and intrapersonal intelligences.  Goleman (1995) popularised the concept in his book, as EQ as well as the notion that EQ might "matter more" than IQ (Tischler, Biberman & McKeage, 2002: 204).

Emotional intelligence (EQ) is described as old wine in new bottles.  It was about self-awareness and empathy, and those were skills that both employees and bosses needed in building a successful organisation (McGarvey, 1997).  In addition, emotional intelligence was "good old street smarts" which included knowing when to share sensitive information with colleagues, laugh at the boss's jokes or speak up in a meeting.  In more scientific terms,

emotional intelligence could be defined as an array of non-cognitive skills, capabilities and competencies that influence a person's ability to cope with environmental demands and pressures (Martinez, 1997). Skill building in the area of emotional intelligence had lifelong impact. The urgency among parents and educators to provide these skills was a response to increased levels of interpersonal discord starting in the early grades, when low self esteem, early drug and alcohol use, and depression in young children were addressed. In organisations, its inclusion in training departments helped employees to cooperate better and increased motivation.

Since Goleman's (1995) popularisation of emotional intelligence, academics and practitioners alike have promoted the importance of emotional intelligence to leader effectiveness. Leadership in the 21$^{st}$ century requires new skills that included those associated with emotional intelligence. Where past leaders were generally revered for having hard strong personal qualities, Hawley (1996) suggested that future leaders demonstrated a greater empathy and concern for people issues and did not rely on position or rank for their status. Leadership, culture and organisational development were part of the organisational growth, and issues associated with emotional intelligence cut across the entire enterprise. Goleman (2000) presented convincing evidence that the most effective leaders had a repertoire of skills that included those associated with emotional intelligence. Additionally, Goleman, et al., (2002) illustrated the impact of emotions on organisational climate and organisational performance. To understand the influence of emotions at work was to recognise the power of emotional energy to mobilize conflict or determine a sense of organisational belonging (Collins, 2001). Kets de Vries and Miller (1984) also suggested that organisational success and failure could be determined by the emotional tone set by the executive or presumed leader of an enterprise. Therefore emotional intelligence could be conceptualised as collateral for developing social capital within organisations.

Bennis (1989) wrote that he had discovered EQ was much more powerful than IQ in determining who emerged as a leader. Gill (2002) stated that planning, organising and controlling skills were needed by managers while emotional intelligence and behaviour skills were needed by leaders. Melville-Ross (1999) wrote in the *IoD News* that there was a growing recognition of the need for a new type of leadership in order for British business to be more competitive in the global market. However, there is no general agreement about

what this should be, or how it should be developed. He suggests that leadership development, as distinct from management training, should focus on the emotional intelligence of the individual. UK industrialist, Sir John Egan (2002) stated that really inspirational leaders who stood out in a crisis showed that emotional intelligence played a big role in hard times. Goleman (2001: 23) emphasised that "emotional intelligence was twice as important as IQ and technical skills….The higher up the organisation you go, the more important emotional intelligence becomes".

Organisational culture appeared to be an important dimension which merits attention. The fact that, in a number of currently successful organisations, the top leadership did not appear to possess, or demonstrate many aspects of EQ, have been a result of the impact of the culture of the organisation. There is much evidence that the leadership of an organisation had a great influence on its culture (Williams, 2002; Finkelstein & Hambrick, 1996).

Diggins (2004) stated that there was a growing evidence of a link between managing ones own emotions and managing those of other people in her investigation of why EQ was a key to effective performance. Self-awareness, according to her, was the most fundamental element in developing emotional intelligence. It is critical to understanding how and why people react emotionally to different stimuli in the workplace. By building self-awareness, people could cope better with change.

Leaders must be able to connect with other people in the organisation, not only on an intellectual platform but also on an emotional basis. Strong emotional reactions to business decisions and processes could hinder organisational performance. Effective leaders were expected to modify these reactions, to coach employees to a better level of self-awareness and hence, organisational performance.

The impact of organisational culture on individual behaviour had long been acknowledged. However, EQ research is only now helping to explain the link between changing cultural norms and how people feel about what is required of them in their jobs. This is expressed through the "psychological contract", which involves the way people adapt to organisational

change. An emotionally intelligent leader is able to address many of the strong feelings that people expressed during periods of major organisational change in a timely and appropriate manner.

It is important for organisations to encourage constructive self expression in order to enhance communication between staff and management, within teams and between teams. Organisations that discouraged self expression not only restrict communication but also limited the potential for receiving innovative ideas and creative ways of approaching challenges from all levels of management and staff. Emotionally intelligent leaders could help ensure that their employees have effective self expression (Diggins, 2004: 34).

Flexibility was another important prerequisite of high performing individuals, teams and organisations. It also played an important role in managerial competencies such as decision making, conflict resolution and negotiation. Emotionally intelligent leaders showed great flexibility themselves, and encouraged it in others (Diggins, 2004: 34).

**Emotionally intelligent leaders are therefore believed to be essential in creating a strong organisational culture for successful organisational performance. The statement of the research problem will be discussed next.**

## 1.3   Statement of the research problem

### 1.3.1   Major research question

✓ What is the relationship among leader emotional intelligence, organisational culture and organisational performance?

### 1.3.2   Secondary research questions

✓ What emotional intelligence (EQ) dimensions distinguish effective leaders from ineffective leaders?

- ✓ What are the perceptions of the leaders and their staff regarding the strength of the organisational culture as measured by the Organisational Culture Profile (OCP) in their organisations?
- ✓ What competencies of emotional intelligence contribute to organisational performance?
- ✓ Is emotional intelligence of the leader a predictor of organisational performance?
- ✓ What is the relationship between organisation culture and organisation performance?
- ✓ What is the relationship between leader emotional intelligence and organisational culture?
- ✓ What is the impact of age; gender; race; qualifications; tenure of the leader in the organisation; tenure of the leader in a leadership position in the organisation - on emotional intelligence (EQ), organisational culture (OC) and organisational performance?
- ✓ What is the impact of the number of employees in the organisation (size) and number of years the organisation existed for - on emotional intelligence (EQ), organisational culture (OC) and organisational performance?

## 1.4   Aim of the research

In view of the question formulated above, the general aim of this research project is:

To examine the dynamic effects of leader EQ and organisational culture strength (measured as values and norms) on the organisational performance.

In order to achieve the general aim of this project the following serve as main hypotheses:

**H0:**   There is no relationship between the dimensions of the leader EQ and the dimensions of organisational culture on organisational performance.

**H1:**   There is a relationship between at least one dimension of EQ and at least one dimension of organisational culture on organisational performance.

The sub hypotheses can be stated as:

**H0$_a$:** There is no relationship between the dimensions of EQ and organisational performance.

**H1$_a$:** There is a relationship between the dimensions of EQ and organisational performance.

**H0$_b$:** There is no relationship between the dimensions of organisational culture and organisational performance.

**H1$_b$:** There is a relationship between the dimensions of organisational culture and organisational performance.

**H0$_c$:** There is no relationship between any linear combination of the leader EQ dimensions and any linear combination of the organisational culture dimensions.

**H1$_c$:** There is a relationship between at least one linear combination of the leader EQ dimensions and at least one linear combination of organisational culture dimensions.

In view of the preceding problems and aims statements, the methods envisaged to be used to conduct an empirical test of the hypothesized relationships are presented in the next section.

## 1.5    Research design and methods

A research design is a plan or blueprint of how the researcher intends conducting the research.  The research design focuses on the end product: What kind of study is being planned and what kind of result is aimed at?  Research methodology focuses on the research process and the kind of tools and procedures to be used (Mouton, 2003: 55-56).

In order to achieve the aims of this research, a thorough literature study was done which formed the basis of the empirical study.  This study uses a quantitative research design to empirically measure the relationships proposed.  The first challenge was identifying an appropriate sample to test the complex relationships hypothesized.  Given Schein's (1984, 1985) theory that organisation culture was created by the leader in the start-up/early growth phase of its organisational lifecycle, it was imperative to identify a setting where a leader had been part of a new organisation which was no more than 10 years old and no less than 3 years old.  Initially, an effort was made to locate Small Medium Micro Enterprises (SMMEs) in

the Gauteng area to be part of the study.  This proved impractical for several reasons.  There were too many variables to control and secondly the organisation performance data which were measured on a standardised basis was not easily obtainable.  The final sample for the study was 118 units known as Technical Service Centres (TSCs) in a large industrial organisation spread throughout South Africa. These units are geographically dispersed and each unit is headed by a leader with the title, Technical Service Officer (TSO).

Given the complex nature of the data collection required, the study also necessitated substantial access and cooperation.  EQ was measured by the Emotional Competence Inventory version 2.0 (hereafter referred to as ECI 2.0).  This part of the investigation highlights the emotional competence of the leaders studied and was compared to the guideline norms of the HayGroup (HayGroup, 2005a).  Secondly organisational culture was measured by the Organisational Culture Profile (hereafter referred to as OCP). In this study the OCP, originally developed by O' Reilly, Chatman and Cadwell (1991) and modified by Sarros, Gray and Densten (2002), was used to measure the dimensions of organisational culture. Organisation performance was measured by a performance appraisal system used by the organisation to rate leaders and a balanced scorecard system that used quantitative KPIs.

Scientific research is like undertaking a journey.  In unpacking this metaphor, one begins to identify the basic elements of all journeys (Mouton, 1996: 24).  A journey has a point of departure and a destination and the area traversed between these two is called the route.  A journey, and also a scientific inquiry, has at least four facets or dimensions: a traveller, a destination, a route and a mode of travel.

No one can decide on a particular route or on the appropriate means of transportation without any knowledge of the destination.  The kind of journey is also determined by existing knowledge about the destination and, by the route.  The more you know about where you are heading and how to get there, the more planning you can put into the journey.  The less you know, the more you have to allow for the unexpected and the less rigid and fixed your itinerary or journey planner can be (Mouton, 1996: 25).  The destination of this journey in this particular thesis is to improve organisational performance.  The researcher (traveller) is conducting this research with the objective (destination) of achieving improved organisational performance.  The route is to determine the relationship between EQ and organisational

culture on organisational performance. The methodology (mode of travel) was through a quantitative method of investigation.

## 1.6   Methodological assumptions

The literature on emotional intelligence suggests it is a universal construction and not much research has been done to examine the effects of demographic variables on EQ (e.g. race, gender, age).  The present study does not take this assumption for granted but has included these as moderator variables.

## 1.7   Demarcation of the research

In this thesis, the study was undertaken at the Technical Services Centre (TSC) level in a single industrial company, geographically dispersed across South Africa.  The reason for choosing a single company is that when testing theory there is a need to limit or control the number of variables (Mitchell & Jolley, 2007: 439).  The choice of a single company kept vision, strategy, structure, systems, processes, HR practices, finance and marketing constant.  This allowed the researcher to test the empirical relationships between EQ, organisational culture and organisational performance in this single company but within multiple sites of relatively newly established entities.  Each TSC has a leader who has the opportunity to influence the organisation culture. The results also indicate differences in the cultures of the various TSCs. Secondly, studies undertaken by other researchers evaluating organisational culture (Kotter & Heskett, 1992; Gordon & DiTomaso, 1992; Burt, et al., 1994) and organisational performance linkages have acknowledged Schein's assertions regarding the organisational life cycle, however, they have been loose in applying it.  Schein (1985) says that the strength of the culture is largely created in the early start-up phase of the organisation.  To test this assertion, the study was undertaken in a section of this single company where the section's existence was under ten years.  Hence the study uses TSCs as a proxy sample and all the TSCs utilised were in a similar life cycle phase.

The sample population of TSCs within the company is 205. Of this population, a total of 118 TSCs comprising 776 questionnaires were finally analysed. A total of 7 questionnaires was

attempted to be completed per TSC.  The object of this study is the leader (TSO), hence one questionnaire was completed by the leader (TSO) – (Appendix A).   The second questionnaire was completed by the leader's manager (Appendix B), the third questionnaire was completed by the leader's peer (Appendix B) and four questionnaires were filled in by a representation of a cross section of the staff (Appendix C).   This satisfied the requirements of the ECI 2.0 Technical Manual (HayGroup, 2005a) which requires a 360 degree study.

## 1.8    Concept clarification

### 1.8.1    Emotional intelligence

What is emotional intelligence?

Goleman (1997) provided a definition of the construct of emotional intelligence, which was about:

- ✓ Knowing what you are feeling and being able to handle those feelings without having them swamp you;
- ✓ being able to motivate yourself to get jobs done, be creative and perform at your peak; and
- ✓ sensing what others are feeling, and handling relationships effectively.

A more concise definition (Martinez, 1997: 72) referred to emotional intelligence as being "an array of non-cognitive skills, capabilities and competencies that influenced a person's ability to cope with environmental demands and pressures".   Emotional intelligence will be represented as (EQ) throughout this study.

### 1.8.2    Organisational culture

Culture has been defined in many ways by various authors and researchers.  However, many agree that culture can be referred to as a set of values, beliefs and behaviour patterns that form the core identity of organisations and help in shaping the employees behaviour (Deal & Kennedy, 1982; Jones, 1983; Schein, 1992; Kotter & Heskett, 1992; Pheysey, 1993; Van de Post et al., 1998; Deshpande & Farley, 1999).  Organisational culture also acts as a

cognitive map that influences the way in which the context is defined, for it provides the selection mechanisms or norms and values which people enact events (Jones, 1983). It is also a pattern of beliefs, symbols, rituals, myths, and practices that evolved over time in an organisation (Pheysey, 1993). Culture is the dominant values espoused by an organisation or a set of values and assumptions that underlie the statement, "this is how we do things around here" (Deal & Kennedy, 1982; Quinn, 1988).

According to Van de Post et al. (1998), culture is, to the organisation, what personality is to the individual. It is a hidden but unifying force that provides meaning and direction. It is also a system of shared meanings, or systems of beliefs and values that ultimately shapes employee behaviour.

Schein (1985, 1992) defined organisational culture as a pattern of basic assumptions invented, discovered or developed by a given group as it learns to cope with its problem of external adaptation and internal integration. These values are then taught to new members in the organisation as the correct way to think and feel in relation to those problems. For Schein (1999), culture is the sum of all the shared, taken for granted assumptions that a group has learnt throughout its history. Also, culture is determined to be the residue of success. Culture is also the structure and control system to generate behavioural standards.

A more formal definition of culture that the researcher identifies with is that "organisational culture is a pattern of basic assumptions that a given group has invented, discovered, or developed in learning to cope with its problems of external adaptation and internal integration, and that have worked well enough to be taught to new members as the correct way to perceive, think and feel in relation to those problems" (Schein, 2004:17).

Organisational culture and organisational climate were often used interchangeably, when in fact they are different constructs. According to Denison (1996:624), organisational culture was "the deep structure of organisations, which was rooted in the values, beliefs and assumptions held by organisational members". Organisational culture refers to the meanings inherent in the actions and procedures of organisational commerce and discourse. In comparison, "climate was often considered as relatively temporary, subject to direct control, and largely limited to those aspects of the social environment that are consciously perceived by organisational members". Climate was a more transient representation of what business

is enacted and how it impacted on everyday relationships and transactions. Organisational culture evolved and is "sufficiently complex to not be manipulated easily", while climate was "temporal" and often subjected to manipulation by people with power and influence (Denison, 1996:644). Linking these arguments to the early life cycle, the climate created by the founder leaders precedes the existence of the group culture.  Later, climate would be a reflection and manifestation of the cultural assumptions, but early in the life of a group climate reflected only the assumptions of the leaders (Schein, 1985).

## 1.9    Defining organisational performance

There are three schools of thought that define organisational performance (Armstrong & Baron, 1998). The results (outputs) school argues that organisational performance is the outcome of work accomplished of 'left behind' and is best connected to strategic objectives (Bernadin, Kane, Ross, Spina & Johnson, 1995; Kane, 1996). In contrast, Campbell (1990) asserts that behaviours (inputs) are organisational performance and should be separated from outputs to avoid being 'contaminated by system factors'. Hartle (1995) favours a mixed view of results and behaviours (Armstrong, 2000; Armstrong and Baron, 1998; Williams; 1998) all support Brumback's (1988: 387) mixed definition:

> **Performance means both behaviour and results. Behaviour emanates from the performer and transforms performance from abstraction to action. Not just the instrument of results, behaviours are also outcomes in their own right-the product of mental and physical effort applied to tasks-and can be judged apart from results.**

Within performance there are three measurement perspectives (Hawkins, 2005; Brett, 2000). The survival and economic returns perspectives deal with differing forms of purely financial measures (Drucker, 1989; McConville, 1994) with the excellence approach focusing on sustainable long term value creation around core competencies that are customer centric (Peters & Waterman, 1982; Treacy & Wiersma, 1993; Caruana, Pitt & Morris, 1995). Hawkins (2005) argues that it is the excellence perspectives that is most linked to new age leadership philosophy.

### 1.9.1  Measuring organisational performance

The literature implies that gains in organisational performance are achieved by innate traits or by developing EQ and new age leadership competencies (Bass, 1985, 1999; Higgs & Rowland, 2000; Alimo-Metcalfe & Alban-Metcalfe, 2001; Goleman et al., 2002; Dulewicz & Higgs, 2003). In the last two decades there has been an academic and practitioner emphasis encouraging organisations to become performance management (hereafter referred to as PM) oriented and better equipped to respond to powerful global forces causing transformational change (Schuler, 1995). PM is deep, wide multidisciplinary and multifunctional subject the entirety of which is outside the scope of this review; instead the focus will be on measuring performance, an important part of PM (Armstrong & Baron, 1998; Williams, 1998; Armstrong; 2000).

### 1.9.2  Organisational performance measures

The excellence perspectives had given rise to the measurement of financial and non financial elements and Armstrong (2000) claimed literature consensus focussed around two measurement systems. The European Foundation for quality management (EFQM) had nine elements model that was designed for very large organisations and therefore outside the scope of this review, while more appropriate and widespread is the Balanced-Score-Card (BSC) developed by Kaplan and Norton (1992, 2004). The BSC system is made up of four perspectives and is at its optimum use when the customer, internal, innovation and learning and financial dimensions are relevantly cascaded through each layer of the organisation down to individual people. The BSC creates an impetus for employees' behaviour to align with the objectives at each layer and generate the necessary resources, skills, actions, learning and feedback to successfully perform, ensuring that such a cumulative effort delivers organisational strategy.  In the organisation studied in this thesis, BSC was used as a method of measuring organisational performance.  It is intended that the balance scorecard Key Performance Indicators (KPIs) are cascaded through all levels of the organisation, aligning strategy.

In this study two measures of organisational performance were evaluated namely the TSC competition scores and the TSO performance appraisal scores. Finally, only the TSO

performance appraisal scores gave reasonable correlation values and were used in the final analysis.

## 1.10  Approach to data analysis

The analysis of the data was done using SPSS (14) and SAS 9.3 package to answer the empirical research questions below:

- **Empirical question 1**: What are the basic statistical features of the data?
- **Empirical question 2**: What is the reliability and construct validity of the dimensions of the ECI and OCP instruments?
- **Empirical question 3**: What are the descriptors of ECI, OCP and organisational performance as variables for this sample?
- **Empirical question 4**: What is the impact of the moderator variables on the independent and dependent variables?
- **Empirical question 5**: What predictive value can be derived from the independent variables on the dependent variables?

The main statistical test performed in the study will be discussed next.

### 1.10.1 Canonical correlation

With canonical analysis the objective is to correlate simultaneously several metric dependent variables and several metric independent variables. The underlying principle is to develop a linear combination of each set of variables (both dependent and independent) to maximise the correlation between the two sets (Hair, Anderson,Taham & Black, 1998).

### 1.10.2 Multiple regression

Multiple regression is the appropriate method of analysis when the research problem involves a single metric dependent variable presumed to be related to two or more independent variables. The objective of multiple regression analysis is to predict the changes

in the dependent variable in response to changes in the independent variable. This objective is most often achieved through the statistical rule of least squares (Hair et al., 1998).

## 1.11  Significance of the study

The major contribution of this study is that it is the first empirical test of the relationships among EQ, organisation culture and organisational performance.  While these have been measured in two-way relationships, there is no research that has attempted to establish these linkages, especially in the context of Schein's (1983) seminal theory that organisational culture strength is critical for organisational performance in the early years of an organisation's life cycle. The results of this research reveal a number of complex linkages. On a practical level, the implications of the findings of this study suggest the development of a leader's EQ is important in establishing strong organisational cultures which according to Schein is essential in the early stages of an organisation.

## 1.12  Outline of the research

The thesis is structured as follows:

Chapter 1 is based on the introduction, which focuses on the importance of the research, statement of the problems, aims and objectives of the research and research methodology. It also outlines certain assumptions involved and clarifies the concepts of the research.

In chapter 2 the focus is on the literature study regarding the theoretical aspects pertinent to organisational culture, emotional intelligence and the link to successful organisational performance.  The extant links among leadership, emotional intelligence and organisational culture are thoroughly examined.

Chapter 3 provides a detailed description of the methodology used namely, the research design, sample, research measures and analysis methods.

Chapter 4 focuses on the five empirical questions as laid out in section 1.10. Reliability and validity of the ECI and OCP instruments was also explained in detail.

Finally, chapter 5 focuses on the discussions, conclusions and the recommendations which link EQ, organisational culture and organisational performance. The recommendations and the conclusions of the research are drawn and topics for further research projects are identified.

# CHAPTER 2: LITERATURE STUDY

## 2.1 Introduction

An examination of the literature in the field of organisational culture, emotional intelligence and leadership found that the two areas had been independently linked to organisational performance. Researchers had examined the link between emotional intelligence (EQ) and organisational performance (Goleman, 2001; Johnson & Indvik, 1999, Higgs, 2004) and also between organisational culture and organisational performance (Deal & Kennedy, 1982; Denison, 1990; Ouchi, 1981; Peters & Waterman, 1982; Kotter & Heskett, 1992; Ogbonna & Harris, 2000; Ogaard, Larsen & Harris, 2005). Numerous aspects of the organisational culture literature alluded to the role of leaders in 'creating' and 'maintaining' particular types of culture (Schein, 2004; Siehl, 1985). Equally, the literature pertaining to leadership suggested that the ability to understand and work within a culture is essential for leadership effectiveness (Hennessey, 1998).

Sarros, Gray and Densten (2002) revealed strong and positive relationships between leadership and organisational culture. Culture was shown to be more responsive to the leadership dimensions than leader was to culture. This study uses the organisational culture profile (OCP) which was revised and shortened by the authors and measures organisational culture on the following dimensions namely competitiveness, social responsibility, supportiveness, emphasis on rewards, innovation, performance orientation and stability. According to Kristof (1996), leaders could emphasise particular values and goals in communicating with followers. Where a strong and consistent culture was promoted, leaders encouraged the attrition of those that do not fit well with the organisation.

However, despite the implicit and explicit linking of emotional intelligence and organisational culture in many parts of organisational theory, little empirical research attention had been devoted to understanding the relationship between the two concepts and the impact that such an association might have had on organisational performance. The absence of the empirical literature exploring the organisational performance implications of relationships between organisational culture and emotional intelligence was unsurprising, given that the

concept of emotional intelligence has only attained empirical status. The aim of this study is to provide empirical evidence of the links between leader emotional intelligence, organisational culture and organisational performance.   Thus this chapter provides a review of the extant theory and research on these three constructs and the previous scholarly attention to the linkage among the three.

## 2.2   Leadership and emotional intelligence

It had been asserted that whichever model of leadership is examined, it was underpinned by the need of the leaders to possess emotional intelligence (Goleman, 1998b, 2000). Emotional intelligence as a concept was first developed by Goleman (1995). Emotionally intelligent leaders were thought to be happier and more committed to their organisation (Abraham, 2000), achieved greater success (Miller, 1999), performed better in the work place (Goleman, 1998a, 1998b; Watkin, 2000), took advantage of and used positive emotions to envision major improvements in organisational functioning (George, 2000), used emotions to improve their decision making and instilled a sense of enthusiasm, trust and co-operation in other employees.

In looking more broadly at leadership, in particular the future nature of leadership, a number of authors and researchers had identified the growing significance of emotional intelligence in leadership (Capioppe, 1997; Sosik & Magerian, 1999; Chaudry, 2000). This shift from the rational to emotional aspects of leadership represented the continuation of the trend encountered more broadly on the thoughts of organisational behaviour and leadership (Fineman, 1997; Goffee & Jones, 2000; Yukl, 2002).

In reviewing emotional intelligence research, Higgs and Dulewicz (1999) indicated that there is a developing view that emotional intelligence may be strongly related to leadership. A number of assertions to this effect had been made by both researchers in the field of emotional intelligence and leading authors on the topic of leadership (Goleman, 1998a; Bennis, 1989). Indeed Goleman (1998a) claimed that the evidence for competency research showed that, whilst for all jobs emotional intelligence was twice as important for high performance as IQ and technical competencies, for leadership roles it accounted for 85% of the variance in high performing individuals. "Emotional competence made the crucial

difference between mediocre leaders and the best. The stars showed significantly greater strengths in a range of emotional competencies, among them influence, team leadership, political awareness, self confidence, and achievement drive. On average 90% of their success in leadership was attributable to emotional intelligence" (Goleman, 1998a: 33).

Sjolund and Gustafsson (2001) conducted a study in Sweden and illustrated that emotionally and socially intelligent behaviour could be enhanced in individuals. The researchers compared the EQ-I scores of 29 managers at a construction company before and after they participated in a workshop designed to increase managerial skills. As part of the workshop curriculum, they were taught techniques to strengthen EQ competencies and skills thought to be important for their work as managers. Not only did their total EQ score increase from a mean of 97 to 107 (p-level <.001), but 9 out of the 15 EQ-I subscales increased the most. Emotional self-awareness and empathy were considered to be the two most important components of EQ (Bar-On, Maree & Elias, 2006).

At an EQ conference in 2003, Bharwaney (2003) presented preliminary findings from the individual coaching she has been providing to corporate executives in the United Kingdom since 1999. In the sample presented, she assessed 47 executives from the same company with the EQ-I before she began coaching them and approximately two months after they completed the intervention.

The five EQ-I subscale scores that revealed the most significant changes were as follows:
- Self regard – 87 to 95
- Self actualisation – 92 to 102
- Stress tolerance – 97 to 102
- Reality testing – 97 to 109
- Happiness – 93 to 100.

It was therefore reasonable to assume that educating more emotionally intelligent leaders successfully, would help build more effective, productive and humane organisations, communities and societies (Bar-On et al., 2006).

Goleman (2001) described how his conception of EQ differed from the conceptions of Reuven Bar-On, John Mayer and Peter Salovey, in that EQ was a theory of performance.

One of the most basic controversies involved the definition of the concept, EQ. The term emotional quotient (EQ) was first coined by Bar-On (1988) as a counterpart to intelligence quotient (IQ), that is, to cognitive ability. Bar-On thought of EQ as representing a set of emotional abilities that helped individuals cope with the demands of daily life. Salovey and Mayer (1990) had something different and more restricted in mind when they introduced the term emotional intelligence several years later. For them, EQ concerned the way in which an individual processed information about emotion and emotional responses. Finally Goleman (2001) saw EQ as an idea or theme that emerged from a large set of research findings on the role of the emotions in human life.

Goleman's (2001) EQ model predicted personal effectiveness at work and in leadership and is therefore the theory that the researcher proposes since the thesis is about effective organisational performance in the workplace. The model sets out a framework of emotional intelligence that reflects how an individual's potential for mastering the skills of self awareness, self management, social management and relationship management translates into the on-the-job success.

## 2.3   Effective leaders have emotional intelligence

Goleman (1997) provides a useful definition of the construct of emotional intelligence, which is about:

- Knowing what one is feeling and being able to handle those feelings without having them swamp one;
- being able to motivate oneself to get the jobs done, be creative and perform at one's peak; and
- sensing what others are feeling, and handling relationships effectively.

"Effective leaders are alike in one crucial way: they all have a high degree of emotional intelligence", states Goleman (1998a: 94).   In recent years the notion of 'emotional intelligence' had been seen as critically important to effective leadership and 'superior organisational performance'. According to Goleman (1998b) and Goleman, et al. (2002), the leading exponent of the concept, the higher an individual rises in an organisation the more important emotional intelligence (EQ) becomes.

## 2.4    Development of the ECI instrument

Goleman (1998a) in the development of his first ECI 1.0 instrument claimed there are five components of emotional intelligence at work.    Table 2.1 defines each of the five components of emotional intelligence and displayed hallmarks of each one.

**Table 2.1:     The Five Components of Emotional Intelligence at Work**

| DEFINITION | HALLMARKS |
|---|---|
| **SELF-AWARENESS**<br>The ability to recognize and understand your moods, emotion and drives, as well as their effect on others | Self-confidence<br>Realistic self-assessment<br>Self-deprecating sense of humour |
| **SELF-REGULATION**<br>The ability to control or redirect disruptive impulses and moods<br>The propensity to suspend judgement to think before acting | Trustworthiness and integrity<br>Comfort with ambiguity<br>Openness to change |
| **MOTIVATION**<br>A passion to work for reasons that go beyond money and status<br>The propensity to pursue goals with energy and persistence | Strong drive to achieve<br>Optimism, even in the face of failure<br>Organisational commitment |
| **EMPATHY**<br>The ability to understand the emotional makeup of other people<br>Skill in treating people according to their emotional reactions | Expertise in building and retaining talent<br>Cross-cultural sensitivity<br>Service to clients and customers |
| **SOCIAL SKILLS**<br>Proficiency in managing relationships and building networks<br>An ability to find common ground and build rapport | Effectiveness in leading change<br>Persuasiveness<br>Expertise in building and leading teams |

(Adapted from Goleman, 1998a)

The first three domains relate to an individual's emotions, while empathy and social skills refer to other people's emotions: the ability to recognise them and nurture relationships or inspire others.

There were a number of psychometric properties of the ECI 1.0 that were not what was desired:

- It was reliable, but the competency scales showed intercorrelations that were too high.
- There was a desire to reduce the number of items (110 items was considered too long).
- They wanted to increase the validity of the instrument, which was also threatened if the scales were too highly intercorrelated.
- In wanting to make changes to the instrument, they also wanted to ensure that they maintained the high scale reliabilities.

The sample of over 10000 ECIs taken provided 'total other' items scores on over 4000 managers and professional from various countries. This data was compiled and analysed and lead to the revised ECI 2.0 instrument (HayGroup, 2005a).

Goleman et al. (2002) revised model of emotional intelligence (ECI 2.0) includes 18 competencies, in four clusters. The competency framework for emotional intelligence is listed below:

**Self-awareness** concerns knowing one's internal states, preferences, resources, and intuitions. The self-awareness cluster contains three competencies:

- **Emotional awareness**: Recognising one's emotions and their effects
- **Accurate Self**-**assessment**: Knowing one's strengths and limits
- **Self**-**confidence**: A strong sense of one's self worth and capabilities

**Self-management** refers to managing one's internal states, impulses, and resources. The self-management cluster contains six competencies:

- **Emotional self-control**: Keeping disruptive emotions and impulses in check
- **Transparency**: Maintaining integrity, acting congruently with one's values
- **Adaptability**: Flexibility in handling change
- **Achievement**: Striving to improve or meeting a standard of excellence

- **Initiative**: Readiness to act on opportunities
- **Optimism**: Persistence in pursuing goals despite obstacles and setbacks

**Social-awareness** refers to how people handle relationships and awareness of others' feelings, needs and concerns. The social-awareness cluster contains three competencies:
- **Empathy**: Sensing others' feelings and perspectives, and taking interest in their concerns
- **Organisational-awareness**: Reading a group's emotional currents and power relationships
- **Service orientation**: Anticipating, recognising, and meeting customers' needs

**Relationship management** concerns the skill or adeptness at inducing desirable responses in others. The relationship management cluster contains six competencies:
- **Developing others**: Sensing others' development needs and bolstering their abilities
- **Inspirational leadership**: Inspiring and guiding individuals and groups
- **Change catalyst**: Initiating or managing change
- **Influence**: Wielding effective tactics for persuasion
- **Conflict management**: Negotiating and resolving disagreements
- **Teamwork and collaboration**: Working with others towards shared goals. Creating group synergy in pursuing collective goals

### 2.4.1  Approaches to the measurement of emotional intelligence (EQ)

Emotional intelligence, as originally conceptualised by Salovey and Mayer (1990: 189), "involved the ability to perceive accurately, appraise, and express emotion; the ability to access and/or generate feelings when they facilitate thought; the ability to understand emotion and emotional knowledge; and the ability to regulate emotions to promote emotional and intellectual growth". Mayer and Salovey (1993) suggested that there are individual differences in emotional intelligence relating to difference in our ability to appraise our own emotions and those of others. They further suggested that individuals higher in emotional intelligence might be more open to internal experience and better able to label and communicate those experiences.

Since Salovey and Mayer's (1990) original conceptualisation of emotional intelligence, three alternative models of the construct had been proposed, ranging from the ability models (Mayer & Salovey, 1997) to non-cognitive models (Bar-On, 1997) and the competency-based models (Goleman, 2001).

Salovey and Mayer's (1990) ability model defined emotional intelligence as "intelligence" in the traditional sense that is as mental abilities to do with emotions and the processing of emotional information that are part of, and contributed to, logical thought and intelligence in general. These abilities were arranged hierarchically from basic psychological processes to the more psychologically integrated and complex, and were thought to develop with age and experience. Further, they were considered to be independent of traits and talents and preferred ways of behaving (Mayer & Salovey, 1993).

Bar-On's (1997: 14) non-cognitive model defined emotional intelligence as "an array of non-cognitive capabilities, competencies and skills that influenced one's ability to succeed in coping with environmental demands and pressures". While Bar-On (2000: 363) placed this model under the banner of emotional intelligence, it was a somewhat broader construct to which he more generically refers as "…emotional and social intelligence". Bar-On had operationalised this model according to 15 conceptual components that pertained to five specific dimensions of emotional and social intelligence. These were intrapersonal emotional intelligence – which represented abilities, capabilities, competencies and skills pertaining to inner self; interpersonal emotional intelligence – which represented interpersonal skills and functioning; adaptability emotional intelligence – which represented how successfully one was able to cope with environmental demands by effectively sizing up and dealing with problematic situations; stress management emotional intelligence – which concerned the ability to manage and cope effectively with stress and general mood emotional intelligence – which pertained to the ability to enjoy life and to maintain a positive disposition. The fifteen components of the model are described as non-cognitive variables that "…resemble personality factors" (Bar-On, 1997: 6). Bar-On proposed that the components of this model developed over time, changed through training and development programmes, and that the model related to the potential for performance rather than performance itself.

The competency-based model of emotional intelligence developed by Goleman (1998a) has been designed specifically for workplace applications. It was described as an emotional

intelligence-based theory of performance that had been reduced to 18 competencies (Goleman et al., 2002). This learned capability was based on emotional intelligence that resulted in outstanding performance at work and distinguished individual differences in workplace performance (Goleman, 1998b). These competencies underlined four general abilities:

- Self awareness – the ability to understand feelings and accurate self-assessment.
- Self management – the ability to manage internal states, impulses and resources.
- Social awareness – the ability to read people and groups accurately.
- Relationship management – the ability to induce desirable responses in others.

Goleman (2001: 27) proposed that the underlying abilities of the model were "… necessary, though not sufficient, to manifest competence in any one of the four EQ domains" and that the emotional competencies could be learned. Within this context, Goleman (1998a) defined emotional intelligence "as the ability to recognise and regulate emotions both within the self and others". Emotional competencies seemed to operate most powerfully in synergistic groupings, with the evidence suggesting that mastery of a "critical mass" of competencies was necessary for superior organisational performance (Boyatzis, Goleman, & Rhee, 1999). The impact of some emotional competencies will now be discussed.

### 2.4.1.1  The impact of self-awareness

Research supports that self-awareness was a necessary underpinning of both self-management and social awareness. The purpose of Tables 2.2a to 2.3a is to show the large impact of self awareness on self management and social awareness.

### 2.4.1.2  The impact of self-awareness on self-management

With self-awareness, a person had a 50-50 chance of demonstrating self-management (HayGroup, 2005b). This is demonstrated in Table 2.2a.

**Table 2.2a: The impact of self - awareness on self - management**

| | | Self – management | |
|---|---|---|---|
| | | Yes | No |
| Self - Awareness | Yes | 49% | 51% |
| | No | 4% | 96% |

N = 427, p < 0.001 (Source: HayGroup, 2005b)

Without self-awareness, a person had virtually no chance of demonstrating self-management. Table 2.2b demonstrates the impact of self-awareness on self-management (HayGroup, 2005b).

**Table 2.2b: The impact of self - awareness on self - management**

| | | Self Management | |
|---|---|---|---|
| | | Yes | No |
| Self – Awareness | Yes | 49% | 51% |
| | No | 4% | 96% |

N = 427, p < 0.001 (Source: HayGroup, 2005b)

**2.4.1.3   The impact of self-awareness on social awareness**

With self-awareness, a person had a 38% chance of having social-awareness. Table 2.3a demonstrates the impact of self awareness on social-awareness (HayGroup, 2005b).

**Table 2.3a: The impact of self - awareness on social - awareness**

| | | Social Awareness | |
|---|---|---|---|
| | | Yes | No |
| Self – Awareness | Yes | 38% | 62% |
| | No | 17% | 17% |

N = 427, p < 0.001 (Source: HayGroup, 2005b)

Without self-awareness, a person had an 83% chance of lacking social awareness. Table 2.3b demonstrates the impact of self-awareness on social-awareness (HayGroup, 2005b).

**Table 2.3b: The impact of self - awareness on social - awareness**

| | | Social Awareness | |
|---|---|---|---|
| | | Yes | No |
| **Self – Awareness** | Yes | 38% | 62% |
| | No | 17% | 83% |

N = 427, p < 0.001 (Source: HayGroup, 2005b)

### 2.4.1.4  Self-awareness

The essence of self-awareness was seeing yourself as others see you. Research showed that people with high Accurate Self-Assessment (ASA) have smaller gaps between self and others' views than people who score low on ASA* (HayGroup, 2005b). * N=214, t-values range from 2,27 to 6,46.  p<0.001. It was critical for 360° feedback to obtaining objective insights into how one is seen by others.

The good news is that leaders can develop emotional intelligence (HayGroup, 2004). Figure 2.1 below shows how emotional intelligence may be developed. It shows how feelings develop emotions, emotions control thoughts, thoughts control behaviour and how behaviour determines performance.
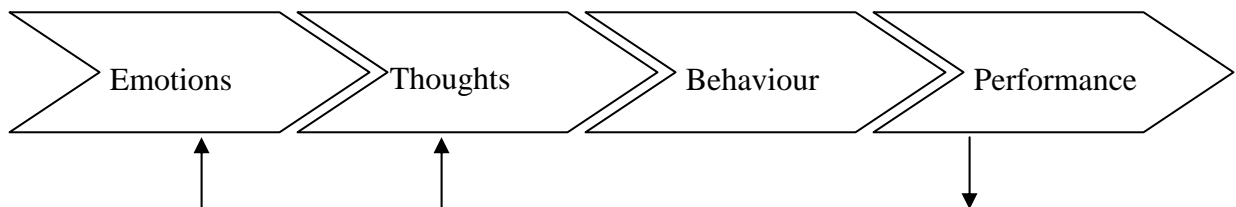


**Figure 2.1:    How emotional intelligence is developed ? (Source: HayGroup, 2004, slide 76)**

For the sake of organisational performance, the competencies of emotional intelligence are ingredients that leaders "need to have".  It is fortunate that emotional intelligence can be learned (Goleman, 1998a: 2; Diggins, 2004).  It takes "time and commitment, but the benefits that come from having a well developed emotional intelligence, for both the individual and for the organisation, make it worth the effort" (Goleman, 1998a: 2).  The following section discusses the necessary ingredients of EQ that leaders require in order to lead successful organisations.

## 2.4.2 Emotional intelligence and organisational performance

As far as organisational performance is concerned Goleman (1998b) claimed that EQ is twice as important as IQ or technical skills.  He stated that three 'motivational competences' typified outstanding performance of individuals.  These are:

- Achievement drive (striving to improve or meet a standard of excellence).
- Commitment (embracing the vision and goals).
- Initiative and optimism (mobilizing people to seize opportunities and allowing them to take setbacks and obstacles in their stride).

"There are many leaders, not one.  Leadership is distributed.  It resides not solely in the individual at the top, but in every person at every level who in one way or the other, acts as a leader. Good leaders captivate, enthuse and inspire us" (Goleman et al., 2002: 14).  "We all know good leadership when we see it, like good schools or good teaching it is relatively easy to identify and describe.  Good leaders have integrity, charisma, strong values, emotional intelligence and moral purpose.  They have energy, drive and enthusiasm.  They motivate us and challenge us and remain optimistic even in the face of adversity.  They exist at all levels in any organisation and most importantly, they generate development, change and improvement" (Harris & Lambert, 2003: 1).

Goleman (1998b) stated that the most effective leaders were alike in one crucial way: they all had a high degree of what had come to be known as emotional intelligence.  It's not that IQ and technical skills were irrelevant.  They did matter, but mainly as "threshold competencies"; that is, they are the entry level requirements for executive positions.  Goleman's analysis showed that emotional intelligence played an increasingly important role at the highest levels of the company, where differences in technical skills were of negligible importance.  The higher the rank of a person considered being a star performer, the more emotional intelligence competencies showed up as the reason for his or her effectiveness.  Goleman (1998b) compared star performers with average ones in senior leadership positions; nearly 90% of the difference in their profiles was attributable to emotional intelligence factors rather than cognitive abilities.

A growing body of support for emotional intelligence as a prerequisite to superior organisational performance had appeared ever since its definition in Goleman's (1989) seminal work.

Cavallo and Brienza (2002) conducted a study with 358 managers across the Johnson & Johnson Consumer and Personal Care Group to determine whether leadership competencies distinguished high-from average performance and also high-from average potential. Based on peer, subordinate, and supervisor ratings on ECI, results showed that high-performance managers were rated significantly higher than average performing managers in emotional intelligence (HayGroup, 2005a).

Sergio (2001) conducted research to explore the relationship between emotional intelligence and mental ability as predictor of job performance among the first-line Filipino plant supervisors in manufacturing organisations. One hundred and thirty four plant supervisors from two multinational manufacturing firms were assessed on the ECI and a standard mental ability test; supervisor performance appraisals were also obtained. It was found that both mental ability ($\mathrm{a}^2 = 28.57$, $p<0.5$) emotional intelligence ($\mathrm{a}^2 = 34.27$, $p<0.05$) were associated with job performance ratings. Emotional intelligence and mental ability were not significantly correlated ($r=0.18$, $p>0.05$). It was concluded from the study that both cognitive and emotional ability/intelligence were independent and important contributors to job performance (HayGroup, 2005a).

In a study by Bresnik (2004), 88 employees of a public organisation were measured on emotional intelligence using the ECI 2.0 and performance using the firm's internal 360-degree HR assessment. The author found no relation between emotional intelligence and organisational performance; however, she concluded that the measures of organisational performance were flawed. It did not actually measure what was valued in the organisation and did not represent criteria actually used for promotion (HayGroup, 2005a).

Overall, the literature on emotional intelligence is rich and diverse. Much of the richness is founded on the claim by many researchers that emotional intelligence is linked to organisational performance. Evidence suggesting a link between EQ and organisational culture is now discussed.

### 2.4.3 Emotional intelligence (EQ) and organisational culture

Much of the emphasis in examining EQ has focused on individual performance. Yet, it is clear that individual success cannot be seen in isolation from the organisation in which they work (Goffee & Jones, 1999; Dulewicz & Higgs, 1999). Further research by Higgs and Mcguire (2001) explored the relationship between individuals' EQ and organisational culture. Using the emotional intelligence questionnaire: managerial (EIQ:M) developed by Dulewicz and Higgs (1999) and piloting the emotional intelligence cultural audit (EI:CA) by the same authors, eight organisations provided up to 20 managers to complete both tools. The preliminary results were useful in indicating empirically for the first time, a link between emotional intelligence of individuals and aspects of organisational culture.

The earlier review of the literature on the relationship between emotional intelligence and organisational performance and between organisational culture and organisational performance finds that many commentators note that the performance of an organisation is dependent on the conscious alignment of employee values with the espoused values of the company strategy. This clearly indicates that organisational culture and leadership are linked.

One way of uncovering and understanding the relationship between organisational culture and a leader's emotional intelligence is to examine how culture has been conceptualised in organisational theory. Smircich (1983) identified two approaches to study of the cultural phenomenon in organisations: culture as an organisational variable, then culture as something which could be manipulated. Thus the nature, direction, and impact of such manipulation were dependent on the skills and abilities of the leader. The majority of the literature which extols the virtues of transformational leadership demonstrated widespread support for this view (Nicholls, 1988; Quick, 1992; Simms, 1997). In contrast, if culture was seen as an integral part of the organisation, then the thinking, feeling, and responses of the leaders were moulded by organisational culture (Bass & Avolio, 1993; Schein, 1992).

Perhaps the most seminal work on the relationship between leaders and organisational culture had been theorised by Schein (1983). Schein (1992, 2004) argued strongly that organisational culture and leadership were intertwined (Schein, 1992, 2004). He illustrates this inter-connection by looking at the relationship between leadership and culture in the context of the organisational life cycle. Thus, during the process of organisational formation,

the founder created an organisation which reflected their beliefs and values. In this sense, the founder created and shaped the cultural traits of their organisation. However, as the organisation developed and time passed, the created culture of the organisation exerted an influence on the leader and shaped the action and style of the leader. Through this dynamic ongoing process, the leader created and is in turn shaped by organisational culture. Bass and Avolio (1993) mirror the argument of Schein (1992; 2004) by suggesting that the relationship between the two concepts represented an ongoing interplay in which the leader shaped the culture and is in turn shaped by the resulting culture.

## 2.5    Criticism of emotional intelligence

Although EQ holds some promise as an area of study, it is not without its detractors (Murphy, 2006). In this study of the relationship between EQ test scores and job evaluation scores, Rau (2001) found no correlation between the two variables. In their recent study, Rode, Mooney, Arthaud-Day and Near (2007) investigated the direct and moderated effects of EQ on individual performance and concluded that the effects of EQ on performance are more indirect than direct in nature. There are just some of the recent studies on EQ and its relationship with performance. Antonakis (2003) and Mathews, Zeidner and Roberts (2002) are concerned about the exaggerated effects of emotional intelligence on leadership, performance and followers.

## 2.6    Leadership and organisational culture

In the broadest sense, most scholars argued that the effectiveness of a leader had an effect on the success or failure of an organisation.  Research into leadership had gone through periods of scepticism about the influence of leaders upon organisations.  However, recent interest had focused on the importance of the leadership role to the success of organisations. Many organisations that could not sustain their success had leaders who personally disciplined the organisation through sheer force. Good to great organisations (Collins, 2001) had leaders who built an enduring organisational culture of discipline, powered by self disciplined people who acted in the organisation's best interest without strict dictums from leadership. These disciplined organisations could and did thrive even after their leaders had

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departed whereas those organisations that practised discipline only by tyrannical rule could not sustain themselves once their leader departed (Collins, 2001).

Schein (1992) and Fiedler (1996) have provided a treatise on the importance of leadership by arguing that the effectiveness of a leader was a major determinant of the success or failure of a group or organisation. Indeed, it had been argued that one way in which organisations had sought to cope with the increasing volatility and turbulence of the external environment was by training and developing leaders and equipping them with the skills to cope (Darcy & Kleiner, 1991; Hennessey, 1998; Saari, Johnson, McLaughlin & Zimmerly, 1998). These claims was based on the assumption of a direct link between leadership and organisational performance (Ogbonna & Harris, 2002).

Widely celebrated cases of direct leadership-performance relationships may have been found in numerous anecdotal accounts of improvement of organisational performance attributed to changes in leadership (Simms, 1997; Quick, 1992; Nicholls, 1988).

For more than half a decade, organisations have been concerned with identifying the trait or characteristics associated with effective leadership (Kets de Vries, 1993; Higgs, 2002). This search had been underpinned by the belief that effective leaders delivered effective organisational performance (Goffee & Jones, 2000). Whilst much leadership research had been devoted to proving this relationship, results showing a consistent direct correlation had been somewhat sparse (Kets de Vries, 1993; Gordon & Yukl, 2004). More recently, however, literature identified that in the post-new age and post-transformational age different leadership theories are emerging (See Table 1.1). One of dominant themes that have emerged is the importance of a leader's emotional intelligence in effective leadership.

## 2.7   Three theoretical views of organisational culture

Martin (2002:94) focused on a theory choice dilemma.   Many organisational culture researchers had adopted one of three theoretical perspectives: the integration, differentiation or fragmentation viewpoints.  The integration perspective focused on those manifestations of culture that had mutually consistent interpretations. An integration portrait of culture saw consensus (although not necessarily unanimity) throughout an organisation. From the

integration perspective, organisational culture was that which was clear; ambiguity was excluded. To summarise this in a metaphor, from the integration perspective, organisational culture was like a solid monolith that is seen the same way by most people, no matter from which angle they view it (Martin, 2002).

The differentiation perspective focused on cultural manifestations that had inconsistent interpretations, such as when top executives announced policy and then behaved in a policy inconsistent manner. From the differentiation perspective, consensus existed within an organisation, but only at lower levels of analysis, labelled "subcultures". Subcultures may exist in harmony, independently, or in conflict with each other. Within a subculture, all was clear; ambiguity was banished to the interstices between subcultures. To express the differentiation perspective in a metaphor, subcultures were like islands of clarity in a sea of ambiguity.

The fragmentation perspective conceptualised the relationship among organisational cultural manifestations as neither clearly consistent nor clearly inconsistent. Instead, interpretations of organisational cultural manifestations were ambiguously related to each other, placing ambiguity, rather than clarity at the core of culture. In the fragmentation view, consensus was transient and issue specific. To express the fragmentation perspective in a metaphor, imagine that individuals in a culture were each assigned a light bulb. When an issue became salient (perhaps because a new policy had been introduced or the environment of collectivity had changed), some light bulbs would turn on, signalling who was actively involved (both approving and disapproving) in this issue. At the same time other lights would remain off, signalling that these individuals were indifferent to or unaware of this particular issue. Another issue would turn on different sets of light bulbs. From the distance, patterns of light would appear and disappear in a constant flux, with no pattern repeated twice (Martin, 2002).

Critics (See Table 2.4) of the integration view argued that if a study claimed to represent the culture of an entire organisation, then all kinds of organisational employees should be studied, whether as informants in an ethnographic study or in a stratified, random sample, more likely in a quantitative study. Critics of the integration approach also observed that this image of organisation-wide harmony and homogeneity is difficult to sustain, given the salience of inconsistencies, disruptions, conflicts and ambiguities in contemporary organisations. Some advocates of an integration view responded to this critique with depth

arguments. They acknowledged that deviations from integration did occur, such as inconsistencies, clashing interpretations, conflicts, and ambiguities, but they did so at the superficial levels (stories, rituals, and values) that do not represent the deeper essence of the culture. "The organisational culture will manifest itself at the levels of observable artefacts and shared espoused values, norms, rules of behaviour… [but] to understand culture, one must attempt to get at its shared basic assumptions" (Schein, 1985: 27).

Tacit, deep assumptions are detected when a researcher "penetrates the front" of impression management strategies, searches for a pattern of interpretation underlying cultural forms such as stories and rituals, and gets down to the essence of what is really important. At this deep level, tacit assumptions are supposedly shared on an organisational wide basis. Thus, in integration studies, as Schein (1985: 18) argued, "basic assumptions in the sense in which I want to define that concept, have become so taken for granted that one finds little variation within the cultural unit".

Schein (1991: 247-248) summarised the integration approach as follows:

> **What this 'model' does say, however, is that only what is shared is by definition, cultural. It does not make sense, therefore, to think about high or low consensus cultures, or cultures of ambiguity or conflict. If there is no consensus or if there is conflict or if things are ambiguous, then, by definition, that group does not have a culture with regard to those things.**

Consensus does not imply 100% agreement. Some argued that the opinions of people in leadership, management and professional positions should perhaps "count more", in the sense that they have more power to control the trajectory of a collectivity. People were found to share some tacit assumptions about fundamental issues, such as time or human nature. Furthermore, integration studies usually did not deny the existence of deviation from what is ostensibly a shared culture. They described cultural consensus in careful language that did not assume total unanimity.

When deviations from the ideal of consistency, consensus, and clarity were acknowledged in an integration study, however, they were seen as regrettable shortfalls. Such a normative

orientation could be detected by analysing whether the deviation from integration is seen as a problem that needs fixing.

In an integration study, deviation from consistency, organisation wide consensus, and clarity were seen as problems, and sometimes remedies were proposed. Sathe (1985: 140) and O'Reilly, Chatman and Caldwell (1991) encouraged job applicants to seek cultures that mirrored their own values: "If fundamental and irreconcilable misfits between the individual and the organisation was apparent, it may have been best for the individual to leave. Biting the bullet may be less costly than an eventual withdrawal, for both parties". In an integration study, a pocket of sub-cultural resistance might be acknowledged, but such a subculture would be seen as needing to be "brought on board," perhaps by a combination of training and performance appraisal; remedies for ambiguity might include defining it due to "poor communication", requiring a clarification of an organisation's strategy or vision, a motivational speech, or more careful supervision (Kotter & Heskett, 1992; Porras & Collins, 1994; Schein, 1999). When deviations from integration are seen as shortcomings, then we are in integration territory.

A study is congruent with the integration perspective when there is a prevalence of descriptive material consistent with the integration view (consistency, organisation-wide consistency, and clarity), plus a normative position. Deviations from integration were portrayed as regrettable shortfalls from an integrated ideal. When researchers reviewed the cultural literature, they usually focused on work congruent with only one perspective, defined cultures in a manner congruent with that perspective, and excluded most theory and research written from other perspectives. For example, Ebers (1995), working from a neopositivist position, classified an array of cultural studies "accurately" into a typology that reflected the content of cultures studied (usually based on content themes in espoused values). It is noteworthy that Ebers was tacitly claiming to review all organisational culture literature, but cited integration studies almost exclusively (Martin, 2002). Other predominantly integration-orientation reviews of the organisational culture literature include those by Denison (1990), Kotter and Heskett (1992), Ouchi and Wilkins (1985), Schein (1999) and Schultz and Hatch (1996). Table 2.4 summarises the empirical studies related to the three perpectives.

**Table 2.4:** **Empirical studies related to the 3 perspectives of organisational culture**

| Theoretical perspectives | Studies (empirical examples) |
|---|---|
| Integration | Altman & Baruch (1998) |
| | Barley (1983) |
| | Bryman, Gillingwater & McGuinness (1996) |
| | Deal & Kennedy (1982) |
| | Dellheim (1987) |
| | Kotter & Heskett (1992) |
| | Martin & Powers (1983) |
| | McDonald (1991) |
| | O'Reilly  (1989) |
| | O'Reilly, Chatman & Caldwell (1991) |
| | Ouchi (1981) |
| | Pettigrew (1979) |
| | Porras & Collins (1994) |
| | Sathe (1985) |
| | Shein (1985, 1999) |
| | Siehl & Martins (1984) |
| Differentiation | Alvesson (1993a) |
| | Barley (1986) |
| | Bartunek & Moch (1991) |
| | Bell (1990) |
| | Brunsson (1995) |
| | Christenson & Kreiner (1984) |
| | Gregory (1983) |
| | Jermier, Slocum, Fry & Gaines (1991) |
| | Martin, Sitkin & Boehm (1985) |
| | Meyer & Rowan (1977) |
| | Mumby (1987, 1988) |
| | Riley (1983) |
| | Rousseau (1990) |
| | Sunesson (1985) |
| | Young (1991) |

| Theoretical perspectives | Studies (empirical examples) |
|---|---|
| Fragmentation | Alvesson (1993b) |
| | Brown & Duguid (1991) |
| | Brunsson (1985, 1989) |
| | Daft & Weick (1984) |
| | Feldman (1989, 1991) |
| | Gherardi (1995) |
| | Golden (1992) |
| | Hatch (1999) |
| | Knights & Wilmott (1987) |
| | Koot, Sabelis & Ybema (1996) |
| | Meyerson (1994) |
| | Risberg (1999) |
| | Sabelis (1996) |

This study views organisational culture from an integrationist perspective. Schein is the leading theorist in integrationist studies and it was for this reason that his work will be elaborated on further. Also, he is the only culture researcher that has identified and linked organisational culture to the organisational life-cycle.

## 2.8 Leader EQ, organisation culture and organisational life-cycle: A theoretical linkage

Schein (1986) had shown the linkage between the role of leadership and organisational culture and also associated leadership and organisational culture to the different organisational life cycle stages. He argued that young companies that were still under the influence of the founders and founding families appeared to need a strong and clear organisational culture as a way of finding themselves. Organisational culture became a source of identity and strength in overcoming the threats and resistance that environments and competitors posed.

Organisational culture matters because decisions made without awareness of the operative forces may have unanticipated and undesirable consequences (Schein, 1999).

Organisational culture matters in different ways according to the stages of organisational evolution. Schein (1985) believed that organisational culture began with founders (leader/manager) who impose their own values and assumptions on a group, a view also shared by Daymon (2000) and Martin et al., (1985). A young and growing organisation attempts to stablise and proliferate the organisational culture that it views as the basis of its success. Although success leads to broader acceptance of those beliefs and value across the whole organisation, one must recognise that a challenge to any organisational culture element is equivalent to questioning the founder or owners of the organisation. Those cultural elements become the Holy Grail and are difficult to change. Organisational culture change was therefore more a matter of evolving and reinforcing organisational cultural elements. If that group was successful and the assumptions came to be taken for granted, we had then an organisational culture that would define for later generations of members what kind of leadership was acceptable.

As the group encountered adaptive difficulties, its environment changed to the point where some of its assumptions were no longer valid and leadership comes into play. Leadership now was the ability to step outside the culture that was created by the founder and to start more adaptive evolutionary change processes. This was the ability to perceive the limitations of one's own culture and to develop the culture adaptively was the essence and ultimate challenge of leadership. Schein (1984, 1986) had shown the linkage between the role of leadership and organisational culture and also associated leadership and organisational culture to the different organisational life stages (Figure 2.2). He argued that young companies that were still under the influence of the founders and founding families appeared to need a strong and clear organisational culture as a way of finding themselves. Their organisational culture became a source of identity and strength in overcoming the threats and resistance that environments and competitors pose. Schein (1985, 1992, 2004) argued that culture embedding in a young organisation was essentially a socialisation process, but one in which most of the socialization mechanisms were in the hands of the founder. In growing organisations, founders externalised their own assumptions and embedded them gradually and consistently in the mission, goals, structures, and working procedures of the group. Whether they are called basic assumptions the guiding beliefs, the theories-in-use, the mental models, the basic principles, or the guiding visions on which founders operate, there was little question that they become major elements of the organisation's emerging

culture (Argyris, 1976; Bennis, 1989; Davis, 1984; Donaldson & Lorsch, 1983; Dyer, 1986; Kotter & Heskett, 1992; Pettigrew, 1979; Schein, 2004).

A "midlife" organisation could be thought of as having several generations of professional managers appointed by outside boards whose members were usually beholden to diverse stockholders. Most likely such an organisation evolved into multiple units based on functions, products, markets, or geographies and those units was likely to develop subcultures of their own. Thus the culture issue in the midlife organisation was threefold:

- How to maintain those elements of the culture that continue to be adaptive and relate to the organisation's success.
- How to integrate, blend, or at least align the various subcultures.
- How to identify and change those cultural elements that maybe increasingly dysfunctional as external environmental conditions change.

There was at this stage much greater necessity for accurate culture skill to produce 'managed change' of some cultural elements while maintaining the core. Culture change becomes transformational, because old cultural elements had to be unlearned (Schein, 1992, 2004).

As organisations age, if they do not evolve, adapt, and change elements of their culture, they grow increasingly maladapted and the culture posed serious constraints on learning and change. The organisation clung to whatever made it a success. The very culture that created the success made it difficult for members of the organisation to perceive changes in the environment that required new responses. Culture became a constraint on strategy. The culture issue in the older company was how to engage in massive transformations, often under great time pressure to avoid serious economic damage. The process of transformation was basically the same as in healthy midlife companies, but the demands of time and the amount of change needed often precipitated drastic measures (usually labelled 'turnarounds'). Rapid unlearning and letting go of things that were valued was for many employees too difficult; either they leave the organisation or they are let go because they 'resisted change' too strongly. If the attempt to manage the change failed, the organisation could go bankrupt and have to start all over again, building a new culture with new management, or be acquired and find a new culture imposed on it (Schein, 1992, 2004).

Founding and
early growth
phase

Midlife

Maturity and
decline
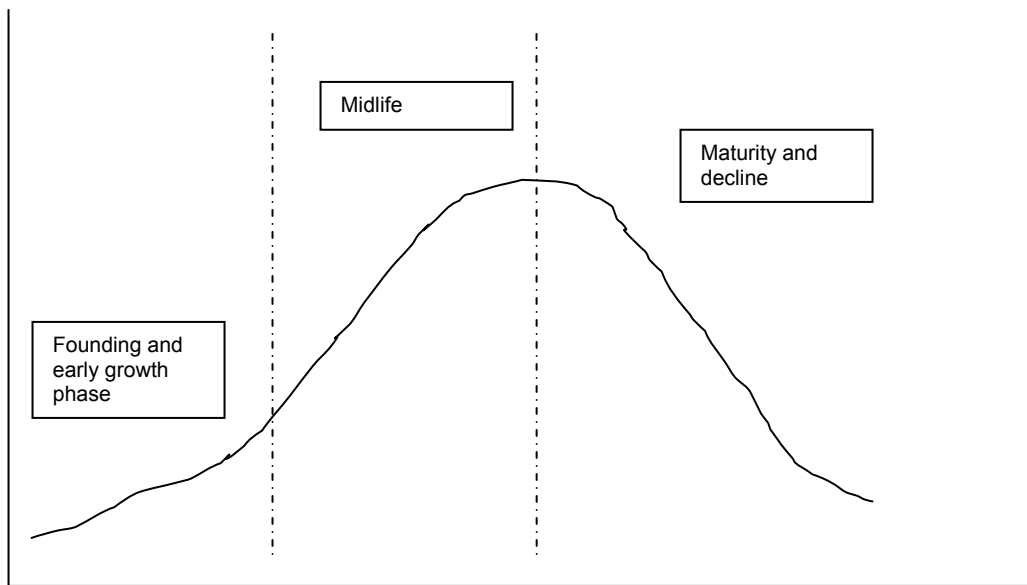
**Figure 2.2: Diagrammatic representation of Schein's organisational life cycle
model**

While Schein theoretically proposed these stages of culture creation within the organisational
life-cycle, they have not been empirically established.


**2.9    The levels of organisational culture**


The purpose of this section is to define the concept of organisational culture in terms of a
dynamic model of how culture is learned, passed on, and changed. As many recent efforts
argue that organisational culture is the key to organisational excellence, it is critical to define
this complex concept in a manner that will provide a common frame of reference for
practitioners and researchers. Many definitions simply settle for the notion that culture is a
set of shared meanings that make it possible for members of a group to interpret and act
upon their environment. Schein (1992, 2004) believes in going beyond this definition: even
an organisation is known well enough to live in it, one should not necessarily know how it
could be changed if organisational survival were at stake.

The trust of his argument is that one must understand the dynamic evolutionary forces that
govern how culture evolves and changes. Schein's approach to this task will be to lay out a

formal definition of what he believes organisational culture is, and to elaborate each element of the definition to make it clear how it works (Schein, 1992, 2004).

Schein (1985) through his qualitative analysis provided a definition of organisational culture as:

> *Organisational culture is a pattern of basic assumptions that a given group has learned as it solved its problems of external adaptation and internal integration, and that have worked well enough to be considered valid, and therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to problems.*

Figure 2.3 illustrates the levels of organisational culture as defined by Schein (1985).

**Artefacts and Creations**
- Technology
- Art
- Visible and audible behaviour

Visible but often not decipherable

**Values**

Greater level of awareness

**Basic assumptions**
- Relationship to the environment
- Nature of reality, time and space
- Nature of human nature
- Nature of human activity
- Nature of human relationships

- Taken for granted
- Invisible
- Preconscious
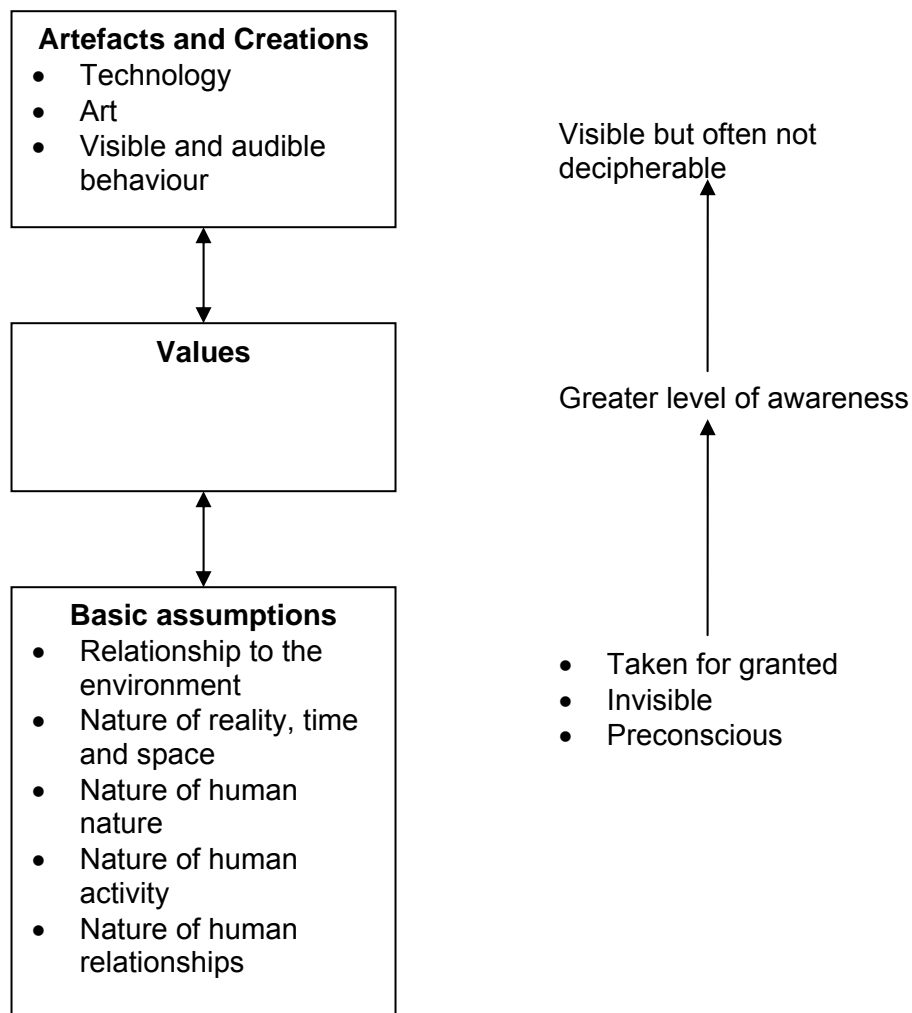
**Figure 2.3: Levels of Organisational Culture (Adapted from Schein, 1985)**

Organisational culture could be analysed at several different levels, starting with the visible artefacts - the constructed environment of the organisation, its architecture, technology, office layout, manner of dress, visible or audible behaviour patterns, and public documents such as charters, employee orientation materials, stories (see Figure 2.3). This level of analysis is tricky because the data are easy to obtain but hard to interpret. One could describe 'how' a group constructs its environment and 'what' behaviour patterns are discernible among the members, but one often cannot understand the underlying logic – 'why' a group behaves the way it does (Schein, 1992, 2004).

To analyse why members behaved the way they do, the values that govern behaviour, which is the second level in Figure 2.3, is examined. Values are hard to observe directly, therefore it is often necessary to infer them by interviewing key members of the organisation or to content analyze artefacts such as documents and charters. However, in identifying such values, one usually notes that they represented accurately only the manifested or espoused values of a culture. Focus was on what people say the reason for their behaviour was, what they ideally would have liked those reasons to have been, and what were their rationalizations for their behaviour. Yet, the underlying reasons for their behaviour remained concealed or unconscious (Schein, 1992, 2004).

To understand an organisational culture and to ascertain more completely the group's values and overt behaviour, it was imperative to delve into the underlying assumptions, which were typically unconscious but which actually determined how group members perceived, thought and felt (Schein, 2004). Such assumptions were themselves learned responses that originated as espoused values. But, as a value led to behaviour and as that behaviour begun to solve the problem which prompted it in the first place, the value gradually was transformed into an underlying assumption about how things are. Once the assumption was taken for granted, it dropped out of awareness (Schein, 1992, 2004).

Taken-for-granted assumptions were so powerful because they are less debatable and confrontable than espoused values. Assumptions were recognised when one encounters in informants a refusal to discuss something, or when they considered informants 'insane' or 'ignorant' for bringing something up. In other words, the domain of values could be divided into (1) ultimate, non-debatable, taken-for-granted values, for which the term 'assumptions' was more appropriate; and (2) debatable, overt, espoused values, for which the term

"values" was more applicable. Basic assumptions were unconscious, therefore Schein argues that as certain motivational and cognitive processes were repeated and continued to work, they became unconscious. They could be brought back to awareness only through a kind of focused inquiry. What were needed were the efforts of both an insider who made the unconscious assumptions and an outsider who helped to uncover the assumptions by asking the right kinds of questions (Schein, 1992, 2004).

Schein (1985, 1992, 2004) defined the concept of organisational culture and shows its relationship to leadership. He argues that organisational culture could be analysed as a phenomenon that surrounds us at all times, being constantly enacted and created by our interaction with others. When one brings culture to the level of the organisation and even down to groups within the organisation, one can see more clearly how it is created, embedded, developed, and ultimately manipulated, managed and changed. These dynamic processes of organisational culture creation and management are the essence of leadership and make one realise that leadership and organisational culture are two sides of the same coin or that leadership and culture are conceptually intertwined.

Culture basically springs from three sources:
- o  The beliefs, values, and assumptions of the founder of organisations.
- o  The learning experiences of the group members as their organisation evolves.
- o  New beliefs, values and assumptions brought in by new members and leaders.

Though each of the above mechanisms perform a crucial role, the most important for organisational cultural beginnings is the impact of the founder/leader. Founders/leaders not only choose the basic mission and the environmental context in which the new group will operate, but they choose the group members and bias the original response that the group makes in its effort to succeed.  Organisations do not form accidentally or spontaneously. Instead they are goal oriented, have a specific purpose, and are created because one or more individuals perceive that the coordinated and concerted action of a number of people can accomplish something that individual action cannot. Firms are created by entrepreneurs of people who have a vision of how the concerted effort of the right group of people can create a new goods or service in the marketplace (Schein, 1992, 2004).

Founders/leaders have a major impact on how the group initially defines and solves its external adaptation and internal integration problems. Since they had the original idea, they would typically have their own notion, based on their own cultural history and personality, of how to fulfil the idea. Founders/leaders not only have a high level of self confidence and determination, but they typically have strong assumptions about nature of the world, the role that organisations play in that world, the nature of human nature and relationship, how truth is arrived at, and how to manage time and space (Schein, 1978, 1983). They would, therefore, be quite comfortable in imposing those views on their partners and employees as the fledgling organisation copes, thus clinging to them until such time as they become unworkable or the group fails and breaks up (Donaldson & Lorsch, 1983).

To survive and grow, every organisation must develop viable assumptions about what to do and how to do it. Schein (2004) stated and explained that these "basic assumptions" must have worked well enough to be considered valid and therefore, to be taught to new members as well as the correct way to perceive, think, and feel in relation to problems regarding external adaptation and survival and internal integration.

Schein (2004: 88) distinguished between the external system and the internal system in Table 2.5 and notes that the two were interdependent. Even though one could distinguish between the external adaptation problems and the internal integration problems, both systems were highly interrelated. The third section of Table 2.5, deeper dimensions around which shared basic underlying assumptions form, clearly influenced how external adaptation and internal integration issues were handled (Schein, 2004: 138). There cannot be a culture unless there is a group that "owns" it. A "given group" is a set of people who have been together long enough to have shared significant problems and who have opportunities to solve those problems and to observe the effects of their solution.

**Table 2.5:** **The steps of external adaptation and survival, internal integration issues and deeper dimensions around which basic underlying assumptions form (**adapted from Schein (2004)**)**

| <u>THE STEPS OF EXTERNAL ADAPTATION AND SURVIVAL</u> |
| --- |
| <ul><li>**Mission and strategy: O**btaining a shared understanding of the core mission, primary task and latent functions.</li><li>**Goals: D**eveloping consensus on goals, as derived from the core mission.</li><li>**Means:** Developing consensus on the means to be used to attain the goals, such as the organisational structure, division of labour, rewards systems and authority systems.</li><li>**Measurement:** Developing consensus on the criteria to be used in measuring how well the group is doing in fulfilling its goals, such as the information and control system. This step also involves the cycle of obtaining information getting that information to the right place within the organisation, and digesting it so that appropriate corrective action can take place within the organisation, and digesting it so that appropriate corrective action can be taken.</li><li>**Correction:** Developing consensus on the appropriate remedial or repair strategies to be used if the goals are not being met.</li></ul> |

## INTERNAL INTERGRATION ISSUES

- **Creating a common language and conceptual categories:** If members cannot communicate with and understand each other, a group is impossible by definition.

- **Defining group boundaries and criteria for inclusion and exclusion:** The group must be able to define itself.  Who is in and who is out, and by what criteria does one determine membership?

- **Distributing power and status:** Every group must work out its pecking order, its criteria and rules for how members get, maintain and lose power.  Consensus in this area is crucial to helping members manage feelings of anxiety and aggression.

- **Developing norms of intimacy, friendship and love:**  Every group must work out its rules of the game for peer relationships, for relationships between the sexes, and for the manner in which openness and intimacy are to be handled in the context of managing the organisation's tasks. Consensus in this area is crucial to help members manage feelings of affection and love.

- **Defining and allocating rewards and punishments:** Every group must know what its heroic and sinful behaviours are and must achieve consensus on what is a reward and what is a punishment.

- **Explaining the unexplainable –** ideology and religion: Every group faces unexplainable events that must be given meaning so that members can respond to them and avoid the anxiety of dealing with the unexplainable and uncontrollable.

| DEEPER DIMENSIONS AROUND WHICH SHARED BASIC UNDERLYING ASSUMPTIONS FORM |
|---|
| • **The nature of reality and truth:** The shared assumptions that define what is real and what is not, what is a fact in the physical realm and the social realm, how truth is determined, and whether truth is revealed or discovered. |
| • **The nature of time:** The shared assumptions that define the basic concept of time in the group, how time is defined and measured, how many kinds of time there are, and the importance of time in the culture. |
| • **The nature of space:** The shared assumptions about space and its distribution, how space is allocated, the symbolic meaning of space around the person, and the role of space in defining aspects of relationships such as degree of intimacy or definitions of privacy. |
| • **The nature of human nature:** The shared assumptions that define what it means to be human and what human attributes are considered to be intrinsic or ultimate. Is human nature good, evil, or neutral? Are human beings perfectible or not? |
| • **The nature of human activity:** The shared assumptions that define what is the correct thing for human beings to do in relating to their environment on the basis of the above assumptions about reality and the nature of human nature. In one's basic orientation to life, what is the appropriate level of activity and passivity? At the organisational level, what is the relationship of the organisation to its environment? |
| • **The nature of human relationships:** The shared assumptions that define what is ultimately the right way for people to relate to each other, to distribute power and love. Is life cooperative or competitive; individualistic, group-collaborative, or communal? What is the appropriate psychological contract between employers and employees? Is authority ultimately based on traditional lineal authority, moral consensus, law, or charisma? What are the basic assumptions about how conflict should be resolved and how decisions should be made? |

Schein (2004) argued that organisational culture could be analysed as a phenomenon that surrounds us at all times, being constantly enacted and created by our interaction with others.  When one brings culture to the level of the organisation and even down to groups

within the organisation, one can see more clearly how it is created, embedded, developed and ultimately manipulated, managed and changed.  These dynamic processes of culture creation and management were the essence of leadership and made one realise that leadership and organisational culture are two sides of the same coin or that leadership and organisational culture were conceptually intertwined (Schein, 2004:11).

### 2.9.1   How do leaders create organisational culture?

The six primary embedding mechanisms and the six secondary reinforcement mechanisms as shown Table 2.6: (adapted from Schneider, 1990) create what would be called the "climate" of the organisation. At this stage the climate created by the leaders precedes the existence of the group culture. At a later stage climate will be a reflection and manifestation of the cultural assumptions, but early in the life of a group it reflects only the assumptions of the leader (Schein, 1992, 2004).

**Table 2.6:     Organisational culture embedding mechanisms**

| Primary embedding mechanisms | Secondary articulation and reinforcement mechanisms |
|---|---|
| What leaders pay attention to, measure, and control on a regular basis | Organisation design and structure |
| How leaders react to critical incidents and organisational crisis | Organisational systems and procedures |
| Observed criteria by which leaders allocate scarce resources | Organisational rites and rituals |
| Deliberate role modelling, teaching, and coaching | Design of physical space, facades, and buildings |
| Observed criteria by which leaders allocate rewards and status | Stories, legends, and myths about people and events |
| Observed criteria by which leaders recruit, select, promote, retire, and excommunicate organisational members | Formal statements of organisational philosophy, values and creed. |

## 2.9.2  Primary embedding mechanisms

### 2.9.2.1  What leaders pay attention to, measure, and control on a regular basis

One of the most powerful mechanisms that leaders have available for communicating what they believe in or care about is what they systematically pay attention to. What they notice and comment on to what they measure, control, reward and in other ways systematically deal with, is noticed. Even casual remarks and questions that are consistently geared to certain areas can be potent as formal control mechanisms and measurements.

If leaders were aware of this process, then being systematic in paying attention to certain things becomes a powerful way of communicating a message, especially if the leaders were totally consistent in their own behaviour. On the other hand, if leaders were not aware of the power of this process or they were inconsistent in what they pay attention to, subordinates and colleagues will spend inordinate time and energy trying to decipher what a leader's behaviour really reflects and even project motives where none exist (Schein, 2004: 247).

Consistency in what questions leaders ask send clear signals about priorities, values, and beliefs. It is the consistency that is important, not the intensity of the attention.

Some of the most important signals of what leaders care about are sent during meetings and in other activities devoted to planning and budgeting, which is one reason why planning and budgeting are such important managerial processes. In questioning subordinates systematically on certain issues, leaders can transit their own view of how to look at problems. The ultimate content of the plan may not be important as the learning that goes on during the planning process (Schein, 2004: 248).

Attention is focused in part by the kinds of questions that leaders ask and how they set the agendas for the meetings. An even more powerful signal, however, is their emotional reactions, especially the emotional outbursts that occur when leaders feel that an important assumption is being violated. Such outbursts are not necessarily very overt because many managers believe that one should not allow one's emotions to become too involved in the decision process. On the other hand, some leaders allow themselves to get angry and upset

and use those feelings as messages. Even for those leaders who attempt to suppress their emotions, subordinates generally know when they are upset.

Many subordinates find emotional outbursts on the part of their bosses painful and try to avoid them. In the process they gradually come to adopt the assumptions of the leader. Other powerful signals that subordinates interpreted for evidence of the leaders' assumptions are what leaders do not react to (Schein, 2004: 249). The combination of what leaders do and do not pay attention to can create problems of deciphering because they reveal the areas where unconscious conflict may exist.

Conclusively, what leaders consistently pay attention to, communicates most clearly what their own priorities, goals, and assumptions are. If they pay attention to many things or if their pattern of attention is inconsistent, subordinates will use other signals of their own experience to decide what is really important, leading to a much more diverse set of assumptions and many subcultures (Schein, 2004).

### 2.9.2.2 How leaders react to critical incidents and organisational crisis

When an organisation faces a crisis, the manner in which the leader deals with it creates new norms, values, and working procedures and reveals important underlying assumptions. Crises are significant especially in organisational culture creation and transmission because the heightened emotional involvement during such periods increases the intensity of learning. Crisis heightens anxiety, and anxiety reduction is a powerful motivator of new learning. If people share intense emotional experiences and collectively learn how to reduce anxiety, they are more likely to remember what they have learned (Schein, 2004: 254).

What is defined as a crisis is of course, partly a matter of perception. There may or may not be actual dangers in the external environment, and what is considered to be dangerous is itself often a reflection of the organisational culture. For the purpose of this analysis, a crisis is what is perceived to be a crisis and what is defined as a crisis by the leader. Crises that arise around the major external survival issues are the most potent in revealing the deep assumptions of the leaders and therefore the most likely to be the occasions when those assumptions become the basis of shared learning and thus become embedded.   How

leaders deal with such a crisis reveals some of the assumptions about the importance of people and their view of human nature (Schein, 2004: 254).

Crises around issues of internal integration can also reveal and embed leader assumptions. Schein (2004: 256) has found that a good time to observe an organisation very closely is when acts of insubordination take place. So much of an organisation's culture is tied up with hierarchy, authority, power and influence that the mechanisms of conflict resolution have to be constantly worked out and consensually validated. No better opportunity exists for leaders to send signals about their own assumptions about human nature and relationship than when they themselves are challenged.

### 2.9.2.3   Observed criteria by which leaders allocate scarce resources

How budgets are created in an organisation is another process that reveals leader assumptions and beliefs. Donaldson and Lorsch (1983) show in their study of top management decision making, leader beliefs about the distinctive competence of their organisation, acceptable levels of financial risks, and the degree to which the organisation must be financially self sufficient strongly influence their choice of goals, the means to accomplish them, and the management processes to be used. Such beliefs not only function as criteria by which decisions are made but are constraints on decision making in that they limit the perception of alternatives.

### 2.9.2.4   Deliberate role modelling, teaching, and coaching

Emotionally intelligent leaders generally seem to know that their own visible behaviour has a great value for communicating assumptions and values to other members, especially newcomers.

Some leaders have made videotapes that outline their explicit philosophy, and these are shown to new members of the organisation as part of their initial training. However, there is a difference between the message delivered from stage settings, such as when a leader gives a welcoming speech to newcomers, and the message received when that leader is observed

informally. The informal messages are the more powerful teaching and coaching mechanism (Schein, 2004: 258).

### 2.9.2.5 Observed criteria for allocation of rewards and status

Members of any organisation learn from their own experience with promotions, performance appraisals, and discussions with the leader about what the organisation values and what the organisation punishes. Both the nature of the behaviour rewarded and punished and the nature of the rewards and punishment themselves carry a message. Leaders could quickly get across their own priorities, values, and assumptions by consistently linking rewards and punishments to the behaviour they are connected with. What Schein (2004: 259) referred to here were actual practices, what really happened, not what is espoused, published, or preached.

To reiterate the basic point, if leaders were trying to ensure that their values and assumptions will be learned, they should create a reward, promotion, and status system that is consistent with those assumptions. Whereas the message initially gets across in the daily behaviour of the leader, it is judged in the long run by whether the important rewards are allocated consistently with that daily behaviour. If these levels of message transmission are inconsistent, one will find a highly conflicted organisation without a clear organisational culture or any organisational culture at all at a total organisational level.

### 2.9.2.6 Observed criteria for recruitment, selection, promotion, retirement and excommunication

One of the most subtle yet most potent ways through which cultural assumptions get embedded and perpetuated is the process of selecting new staff. If a leader assumes that the best way to build an organisation is to hire very tough, independent people and then leave them alone and he is successful in continuing to hire tough and independent people, he will create the kind of organisational culture that he assumes will work best. He may never realize that the success of the organisational culture lies in the success of the recruitment

effort and that his beliefs about how to organise might become disconfirmed if he could no longer hire the right kinds of people to fit his assumptions (Schein, 2004: 261).

This cultural embedding mechanism is subtle because it operates unconsciously in most organisations. Leaders tend to be attracted to those candidates who resemble present members in style, assumptions, values, and beliefs. They are perceived to be the best people to hire and are assigned characteristics that will justify their being hired. Unless someone outside the organisation is explicitly involved in the hiring, there is no way of knowing how much the current implicit assumptions are dominating recruiters' perceptions of the candidates. It is clear that initial selection decisions for new members, followed by the criteria applied in the promotion system, are powerful mechanisms for embedding and perpetuating the organisational culture, especially when combined with socialization tactics designed to teach cultural assumptions (Schein, 2004: 261).

Basic assumptions are further reinforced through criteria of who does or does not get promoted, who is retired early, and who is in effect excommunicated by being actually fired or given a job that is clearly perceived to be less important, even if at a higher level.

The foregoing mechanisms all interact and tend to reinforce each other if the leader's own beliefs, values, and assumptions are consistent. By separating these categories Schein (2004) is trying to show in how many different ways leaders can and do communicate their assumptions. Most newcomers to an organisation have a wealth of data available to them to decipher what the leader's assumptions really are. Much of the socialization process is therefore, embedded in the organisation's normal working routines. It is not necessary for newcomers to attend special training or indoctrination sessions to learn important cultural assumptions. They become quite evident through the behaviour of leaders.

### 2.9.3   Secondary articulation and reinforcement mechanisms

Design, structure, architecture, rituals, and formal statements are organisational culture reinforcers, not organisational culture creators. These mechanisms come to be primary organisational culture-creating mechanisms that will constrain future leaders. Schein (2004: 262) has labelled these mechanisms secondary because they work only if they

are consistent with the primary mechanisms discussed above. When they are consistent, they begin to build organisational ideologies and thus to formalise much of what is informally learned at the outset. If they are inconsistent, they either will be ignored or will be a source of internal conflict.

All the items in this list can be thought of at this stage as cultural artefacts that are highly visible but may be difficult to interpret without insider knowledge obtained from observing leaders' actual behaviours. When an organisation is in its developmental phase, the driving and controlling assumptions will always be manifested first and most clearly in what the leaders demonstrate in their own behaviour, not in what is written down or inferred from visible designs, procedures, rituals, stories, and published philosophies (Schein, 2004: 263).

### 2.9.3.1  Organisation design and structure

The requirements of the primary task - how to organise in order to survive in the external environment - seem to get mixed up with powerful assumptions about internal relationships and with theories of how to get things done that derive more from the leader's background than from current analysis. The organisations design is often built around the talents of organisational management team rather than the external task requirements (Schein, 2004).

Leaders often have strong theories about how to organise for maximum effectiveness. Some assume that only they can ultimately determine what is correct; therefore, they build a tight hierarchy and highly centralised controls. Others assume that the strengths of their organisation is in their people and therefore build a highly decentralized organisation that pushes authority down as low as possible.  Some leaders believe in minimising interdependence in order to free each unit of the organisation; others believe in creating checks and balances so that no one unit can ever function autonomously (Schein, 2004: 264).

Beliefs also vary about the stability of a given structure, with some leaders seeking a solution and sticking with it, while others, are perpetually redesigning their organisation in a search for solutions that better fit the perceived problems of the ever-changing external conditions. The initial design of the organisation and the periodic reorganisations that organisations go

through thus provide ample opportunities for the leaders to embed their deeply held assumptions about the task, the means to accomplish it, the nature of people and the right kinds of relationships to foster among people. Some leaders are able to articulate why they have designed their organisation the way they have; others appear to be rationalizing and are not really consciously aware of the assumptions they are making, even though such assumptions can sometimes be inferred from the results (Schein, 2004: 264).

### 2.9.3.2 Organisational systems and procedures

The most visible parts of life in any organisation are the daily, monthly, quarterly, and annual cycles of routines, procedures, reports, forms, retention and progression schedules and other recurrent tasks that have to be performed. The origin of such routines is often not known to participants or sometimes even to senior management, but their existence lends structure and predictability to an otherwise vague and ambiguous organisational world. The systems and procedures thus serve a function quite similar to the formal structure in that they make life predictable and thereby reduce ambiguity and anxiety. Though employees often complain of stifling bureaucracy, they need some recurrent processes to avoid the anxiety of an uncertain and unpredictable world, says Schein (2004: 265). Staff, seeks this kind of stability and anxiety reduction, and leaders have the opportunity to reinforce their assumptions by building systems and routines around them.

Systems and procedures could formalize the process of "paying attention" and thus reinforce the message that the leader really cares about certain things. Formal budgeting or planning routines are often adhered to less to produce plans and budgets and more to provide a vehicle to remind subordinates of what the leader considers to be important matters to pay attention to (Schein, 2004: 265).

If leaders did not design systems and procedures as reinforcement mechanisms, they would open the door to historically evolved inconsistencies in the organisational culture or weaken their own message from the outset. Thus, a strong leader who believed managers should be in full control of their own operations should ensure that the organisation's financial control procedures were consistent with that belief.

### 2.9.3.3  Rites and rituals of the organisation

Rites and rituals are viewed as central to the deciphering as well as to the communicating of cultural assumptions (Deal & Kennedy, 1982; Trice & Beyer, 1993). From the point of view of the leader, if one can ritualise certain behaviours that one considers important, that becomes a powerful reinforcer.

### 2.9.3.4  Design of physical space, facades, and buildings

The physical design category is intended to encompass all the visible features that the organisation would encounter. The messages that can be inferred from the physical environment, as in the case of structure and procedures, potentially reinforce the leader's message, but only if they are managed to do so (Steele, 1973). If they are not explicitly managed, they may reflect the assumptions of the leader in the organisation.

Leaders who have a clear philosophy and style often choose to embody that style in the visible manifestations of their organisation. They reflect the basic assumptions of how work gets done, how relationships should be managed, how one arrives at the truth.

### 2.9.3.5  Stories about important events and people

As a group develops and accumulates a history, some of this history becomes embodied in stories about events and leadership behaviour (Martins & Powers, 1983; Wilkins, 1983). Stories whether in the form of a parable, legend, or even a myth reinforce assumptions and teaches assumptions to newcomers. Leaders cannot always control what will be said about them in stories, though they can certainly reinforce stories that they feel good about and perhaps can even launch stories that carry desired messages. Leaders can make themselves highly visible to increase the likelihood that stories will be told about them, but sometimes attempts to manage the message in this manner backfire; that is, the story may focus more on the inconsistencies and conflicts that observers detect in the leader (Schein, 2004: 269).

### 2.9.3.6   Formal statements of organisational philosophy, creeds, and charters

The final mechanism of articulation and reinforcement to be mentioned is the formal statement, the attempt by the leader to state explicitly what their values or assumptions are. These statements typically highlight only a small portion that operates in the group and, most likely, highlight only those aspects of the leader's philosophy or ideology that lend themselves to public articulation. Such public statements may have a value for the leader as a way of emphasising special things to be attended to in the organisation, as values around which to rally the troops, and as reminders of fundamental assumptions not to be forgotten. However, formal statements cannot be viewed as a way of defining the organisation's culture. At best they cover a small, publicly relevant segment of the organisational culture, those aspects that leaders find useful to publish as an ideology or focus for the organisation.

An understanding of the primary embedding mechanisms and secondary reinforcing mechanisms clarify how leaders "embed the assumptions that they hold and thereby create the conditions for organisational culture formation" (Schein, 2004: 270). The strength of the organisational culture and its effects on organisational performance will now be discussed.

## 2.10   Measuring organisational culture: Organisational Culture Profile (OCP)

Schein developed his theory through qualitative methods. However, this study attempts to investigate Schein's qualitative assertions quantitatively. Interest in the concept of organisational culture has exploded in the past two decades. Researchers have approached the topic with a wide array of theoretical interest, methodological tools and definitions of the concept itself. Debate over fundamental issues of theory and epistemology is intense (Martin, 1992; Trice and Beyer, 1993). While some see attempts to measure organisational cultures and their effects on organisations as problematic (Schein, 1985; Siehl and Martin, 1990; Martin, 1992; Alvesson, 1993a), a large body of research starts from the assumption that organisational culture is a measurable characteristic of organisations (O'Reilly and Chatman, 1996, Rousseau, 1990). These studies do not seek to interpret the meaning of the different organisational cultures or cultural forms per se but, rather, focus on their consequences for organisational behaviour and processes. Studies of the effects of strong organisational cultures for organisations performance fall within this tradition. O'Reilly and Chatman's

(1996:160) define organisational culture as a **"system of shared values (that define what is important) and norms that define appropriate attitudes and behaviours for organisational members (how to feel and behave)"** a view shared by other (Rousseau, 1990; Kotter and Heskett, 1992; Gordon and DiTomaso, 1992). O'Reilly and Chatman (1996) developed an instrument known as the Organisational Culture Profile (OCP) to measure organisational culture.  This instrument developed by O' Reilly, Chatman and Caldwell (1991) and since revised by Judge and Cable (1997) and than by Sarros, Gray and Densten (2002) measures organisational and personal culture orientations along seven dimensions (See Table 2.7).

**TABLE 2.7:   DIMENSIONS OF ORGANISATIONAL CULTURE AND THEIR PROPERTIES** (Adapted from Sarros et al., 2002)

| ORGANISATIONAL CULTURE DIMENSIONS | PROPERTIES |
|---|---|
| • Competitiveness | Achievement orientation |
|  | An emphasis on quality |
|  | Being distinctive – being different from others |
|  | Being competitive |
| • Social Responsibility | Being reflective |
|  | Having a good reputation |
|  | Being socially responsible |
|  | Having a clear guiding philosophy |
| • Supportiveness | Being team orientated |
|  | Sharing information freely |
|  | Being people orientated |
|  | Collaboration |
| • Innovation | Being innovative |
|  | Quick to take advantage of opportunities |
|  | Risk taking |
|  | Taking individual responsibility |
| • Emphasis on Rewards | Fairness |
|  | Opportunities for professional growth |
|  | High pay for good performance |

| ORGANISATIONAL CULTURE DIMENSIONS | PROPERTIES |
|---|---|
| | Praise for good performance |
| • Performance Orientation | Having high expectations for performance |
| | Enthusiasm for the job |
| | Being results oriented |
| | Being highly organised |
| • Stability | Stability |
| | Being calm |
| | Security of employment |
| | Low conflict |

Research by Vandenberghe (1999) applied the OCP in Belgium in a health care industry and compared it to the original US study. Vandenberghe (1999: 183) recommended that a more cross cultural analysis of OCP was warranted. Howard (1998) asserted that it was necessary to examine the reliability of the original OCP value dimensions.

The above points were taken into account by Sarros, Gray and Densten (2002) in their revision of the OCP that was tested in Australia and resulted in a new shortened version of the OCP. These revised versions of the OCP (Sarros, et al., 2002: 7), used in this study, consist of a 28-item, seven factor structure as follows (reliabilities shown in parenthesis):
- Competitiveness (0.75)
- Social responsibility (0.74)
- Supportiveness (0.87)
- Emphasis on rewards (0.80)
- Innovation (0.80)
- Performance orientation (0.74)
- Stability (0.66)

A discussion of the link between organisational culture and organisation performance follows.

**2.11  The relationship between organisation culture and organisational performance**

Early studies reported mixed evidence of a positive relationship between organisational culture strength and organisational performance (Siehl & Martin, 1990) but generally defined organisational culture strength in terms of the content of the organisational values and norms. More recent studies, which defined organisational culture strength in terms of the degree of agreement and commitment to organisational values and norms, found evidence in favour of the linkage. For example, Kotter and Heskett (1992: 19) related mean organisational performance over a ten year period to measures of the strength of organisational culture and found that, across twenty two different industries and 207 firms, organisations perceived to have strong organisational cultures generally had greater average levels of return on investment, net income growth and change in share prices. Gordon and DiTomaso (1992) found that organisational performance of insurance companies increased to the extent that there was consensus surrounding cultural values. Denison (1990), using both qualitative and quantitative evidence, also suggested that consensus surrounding organisational values increases organisational effectiveness. Burt et al., (1994) re-analysed Kotter and Heskett's data and found that the effect of organisational culture strength was contingent on market context, with organisational performance benefits of strong organisational cultures being enhanced in highly competitive markets.

Schein (1986) however, argued that: 'many have advocated 'strong' organisational cultures as a prescription for organisational success.   Apart from its obvious fallacy (strong organisational cultures have undeniably led to the demise of companies and even whole industries)'. He further agues that this line of arguments ignores a more important issue: Organisational culture played a different role at different stages of the life cycle. What Schein (1986) is arguing is that strong organisational cultures are appropriate during the early start-up and growth phase of an organisation and that strong organisational culture may not always be suitable in later stages of the organisation's life cycle.

Moreover, an organisational culture can be considered strong if those norms and values are widely shared and intensely held throughout the organisation (O'Reilly & Chatman, 1996; O'Reilly, 1989; Gordon & DiTomaso, 1992; Kotter & Heskett, 1992). This definition of organisational culture strength, in contrast to some others, entails no assumptions about which values and norms might enhance organisational performance (Ouchi, 1981; Deal &

Kennedy, 1982; Denison, 1990). The focus of this study is in establishing the relationship between the leaders EQ, organisational culture and organisational performance.

One of the key consequences of a strong organisational culture is that it increases behavioural consistency across individuals in a firm. Organisational culture defines a normative order that serves as a source of consistent behaviour within the organisation. The impact of consistency on execution is important, since organisations with excellent strategies (high potential return) may perform poorly if they fail to execute well, and organisations that execute their routines extremely well may compensate for suboptimal strategies.

Theorists have put forward three interrelated explanations for the organisational performance benefits of strong organisational cultures (Kotter & Heskett, 1992). First, widespread consensus and endorsement of organisational values and norms facilitates social control within the firm. When there is broad agreement that certain behavioural norms may be detected and corrected faster. Corrective actions are more likely to come from employees, regardless of their place in the formal hierarchy. Informal social control is therefore likely to be more effective and cost less than formal control structures (O'Reilly & Chatman, 1996). Second, strong organisational cultures enhance goal alignment. With clarity about corporate goals and practices, employees face less uncertainty about the proper course of action when faced with unexpected situations and can react appropriately. Goal alignment also facilitates coordination, as there is less room for debate between different parties about the firm's best interests (Kreps, 1990; Cremer, 1993; Hermalin, 2001). Finally, strong organisational cultures could enhance employees' motivation and organisational performance because they perceive that their actions are freely chosen (O'Reilly, 1989; O'Reilly & Chatman, 1996).

Organisational cultures with the greatest amount of variance accounted for accentuated fairness, opportunities for growth, were both collaborative and opportunistic, and encouraged innovation and distinctiveness. Organisational cultures with less variance accounted for tended to be reflective, were focused on developing a clear guiding principle under stable and secure conditions of employment, but still retained high expectations for performance and enthusiasm for the job. The results point to evolving organisational cultures that strive to balance the tension between stable and secure employment conditions with the need to constantly challenge and compete in an increasingly problematic market place.

Much popular and scholarly attention has been focused on the hypothesis that strong organisational cultures defined as "a set of norms and values that are widely shared and strongly held throughout the organisation" (O'Reilly & Chatman, 1996: 166), enhance organisational performance. This hypothesis is based on the intuitively powerful idea that organisations benefit from having highly motivated employees dedicated to common goals (Peters & Waterman, 1982; Deal & Kennedy, 1982; Kotter & Heskett, 1992). In particular, the organisational performance benefits of a strong organisational culture are thought to derive from three consequences of having widely shared and strongly held norms and values: enhanced co-ordination and control within the organisation, improved goal alignment between the organisational and its members and increased employee effort. In support of this argument, quantitative analyses have shown that firms with strong organisational cultures outperform firms with weak organisational cultures (Kotter & Heskett, 1992; Gordon & DiTomaso, 1992; Burt et al., 1994).

For an organisational culture to become more transformational, top management must articulate the changes that are required. The behaviours of top level leaders become symbols for the organisation's new culture. It is imperative therefore that in order to continually build upon and improve organisational leadership, that organisations begin programmes of identifying leadership potential at an early career stage and implement training and development regimes to nurture and promote the leadership in the company.

Bititci, Mendibil, Nadurupati, Turner and Garengo (2004) have had significant experience in auditing and implementing performance measurement systems in industrial organisations as part of action research programmes. During these implementations, the authors observed that:

- ✓ Organisation culture and management styles have had an impact on how organisational performance measurement systems are implemented and used, thus affecting its success or failure; and
- ✓ organisational performance measurement systems can affect management styles and, to a certain extent organisational culture.

Organisational culture has received much attention in the last two decades due to its effects and potential impact on organisational success, state Rashid et al., (2002). The pioneering

work of Deal and Kennedy (1982) incited the interest of researchers and consultants to the concept of organisational culture, and how these values and philosophy guide the employees' behaviour in the organisation towards greater success.  Kotter and Heskett (1992), for example, believe that organisational culture has a long term impact on the performance of the organisation.  Denison (1990) found that certain types of culture could enhance organisational performance, while Van de Post, et al. (1998) found significant relationships between organisational culture and organisational performance.

Research on organisational culture also showed that it has a relationship with financial performance (Rashid et al., 2002:711).  Kotter and Heskett (1992) found that organisational culture has a significant impact on an organisation's long term economic performance.  They found that organisations with organisational cultures that emphasized all the key managerial constituencies (customers, stockholders and employees) and leadership from managers at all levels, outperformed organisations that did not have those cultural traits by a long margin. They also believed that organisational culture was becoming more important in determining the success or failure of organisations in the next decade. According to Sadri and Lees (2001), a positive organisational culture could provide immense benefits to the organisation, and thereby a leading competitive edge over other firms in the industry.  However, a negative organisational culture could have a negative impact on the organisational performance as it could deter organisations from adopting the required strategic or tactical changes.  Such type of organisational culture could inhabit future changes in an organisation.

Denison (1990) examined the relationship between organisational culture and organisational performance.   In the study, organisational culture was based on the perceptions of organisational practices and conditions, to characterise the organisational culture.  He found that the organisation with participative organisational culture performed better than other cultural types.

Organisational culture is also related to organisational strategy (Schwartz & Davis, 1981; Scholz, 1987).  Choe (1993) found a strong relationship between strategy and organisational culture.   He found that organisations pursuing the prospector strategy tends to have developmental organisational culture, and those with defensive strategy tend to have hierarchical organisational culture.  Rashid and Anantharaman (1997) also found there was

an association between organisational strategy and organisational culture which is consistent with findings by Choe (1993).

Pool (2000) examined the relationship between organisational culture and job stressors. He found that executives working in a constructive organisational culture reduced the role stressors. He found that executives working in a constructive organisational culture reduced the role stressors in their working environment. There was also an inverse relationship between role conflict ambiguity in a constructive organisational culture. However, the passive organisational culture showed a positive relationship between role conflict, and role ambiguity. He also believed that organisational culture (passive or constructive) could hinder organisational performance.

Consequently, it is pertinent to note three main issues. Firstly, many researchers note that treating organisational culture as a unitary concept reduces its value as an analytic tool (Martin, 1992; Ogbonna & Harris, 1998; Pettigrew, 1979). Secondly, organisational culture cannot be equated to power and politics or climate (Denison, 1996; Riley, 1983; Schein, 1986); and thirdly, there is disagreement on whether organisational culture can be easily changed (Legge, 1994; Ogbonna, 1993).

One of the major reasons for the widespread popularity of and interest in organisational culture stems from the argument (or assumption) that certain organisational cultures lead to superior organisational financial performance. Many academics and practitioners argue that the performance of an organisation is dependent on the degree to which the values of the organisational culture are widely shared, that is, are 'strong' (Deal & Kennedy, 1982; Denison, 1990; Kotter & Heskett, 1992; Ouchi, 1981; Pascale & Athos, 1981; Peters & Waterman, 1982).

The claim that organisational culture is linked to organisational performance is founded on the perceived role that organisational culture can play in generating competitive advantage (Scholz, 1987). Krefting and Frost (1985) suggest that the way in which organisational culture may create competitive advantage is by defining the boundaries of the organisation in a manner which facilitates individual interaction and/or by limiting the scope of information processing to appropriate levels. Similarly, it is argued that widely shared and strongly held values enable management to predict employee reactions to certain strategic options thereby

minimising the scope for undesired consequences (Ogbonna, 1993). Theorists also argue that sustainable competitive advantage arises from the creation of organisational competencies which are both superior and imperfectly imitable by competitors (Reed & DeFillippi, 1990). To this end, it is argued that the 'uniqueness quality' of organisational culture makes it a potentially powerful source of generating advantage over competitors. Indeed, many commentators have advised organisations and researchers to exploit the multiple advantages which could be offered by organisational culture rather than focusing on the more tangible side of the organisation (Johnson & Indvik, 1999; Prahalad & Bettis, 1986).

Early researchers who link organisational culture to organisational performance are unequivocal in their claims. An illustration of this is derived from the work of the so-called 'excellence writers' who argue that successful organisations are distinguished by their ability to promote cultural values which are consistent with their chosen strategies (Deal & Kennedy, 1982; Ouchi, 1981; Pascale & Athos, 1981; Peters & Waterman, 1982). Although this view met with initial popularity, the leader tenets of the argument have been subject to extensive criticism (Legge, 1994; Ogbonna, 1993; Willmott, 1993).

Gordon and DiTomaso (1992) and Denison (1990) note that organisational culture will remain linked with superior organisational performance only if organisational culture is able to adapt to changes in environmental conditions.  Furthermore, the organisational culture must only be strong (widely shared), but it must also have unique qualities which cannot be imitated. However, more recently, it has been suggested that the relation between organisational culture and organisational performance is tenuous (Hopfl, Smith & Spencer, 1992; Lewis, 1994; Lim, 1995; Ray, 1986; Willmott, 1993). Indeed, the growing popularity of the resource-based view of competitive advantage suggests that the degree to which an organisational culture can be theorised to determine a sustainable advantage is dependent upon the value, rarity, imitability, and sustainability of the organisational culture concerned (Barney, 1991).

Overall, the literature on organisational culture is rich and diverse. Much of the richness is founded on the claim by many researchers that organisational culture is linked to organisational performance.  Some researchers have argued the similarities between organisational culture and climate and a discussion of this follows.

## 2.12  Organisational performance

### 2.12.1  Performance measurement

Performance measurement has received considerable criticisms in the 1980s and early 1990s for being restricted to financial measures and robust accounting methods in evaluating the performance of organisations or more specifically their profitability. Mostly, it is argued, that these measures ignore the softer less measurable performance indicators as well as the relationship between different business units and their variable objectives (Kaplan & Norton, 1992; Neely, 1995). Many researchers have also referred to the number of problems that arise from relying on such systems such as short-termism (Neely, 1995; Kaplan & Cooper, 1998). In response to these criticisms and dissatisfactions with the traditional systems new performance measurements frameworks have developed, out of which, the most well-known and commonly used is the balanced scorecard and a discussion of this follows.

### 2.12.2  The balanced scorecard

The balanced scorecard (BSC) is one of the most highly discussed management tools today (Atkinson & Epstein, 2000) and fortune 500 companies are increasingly using it.  A survey found that approximately 50 percent of fortune 1000 companies in North America and 40 percent in Europe use a version of the BSC (Kaplan & Norton, 2001). BSC is now being listed as a value methodology along with cost-benefit analysis and return on investment (Field, 2000); it is being used to help change organisational culture (Simpson and Cacioppe, 2001); and several companies have reported improved operational efficiency and profitability as a result of using BSC (Atkinson & Epstein, 2000; Gumbus, Bellhouse & Lyons, 2003).

Researchers have clearly stated that companies of all sizes are good at developing mission statements and strategies but are poor at implementing operational strategies to achieve them, and they are poor at measuring whether they are achieving their mission and strategy. The BSC addresses this problem by linking the mission to strategy and then translates strategy into operational objectives and measures.

Kaplan and Norton first introduced the BSC in 1990 through a one year study of 12 companies. The results were reported in the Harvard Business Review (HBR) (Kaplan & Norton, 1992). These researchers concluded that financial measures alone were not sufficient to measure performance. Other factors in the new economy such as competence and knowledge, customer focus, operational efficiency and innovation were missing from traditional financial reporting. They reported highly successful results of Rockwater and FMC Corporation's use of the BSC (Kaplan & Norton, 1993). In 1996, Kaplan and Norton published 'The balanced scorecard: Translating strategy into action' to explain how to develop and use the BSC (Kaplan & Norton, 1996a) and two more papers in HBR (Kaplan & Norton, 1996b, 1996c).

Over the years, Kaplan and Norton and others have conducted research supporting their claims that financial measures are not enough. The BSC has been successfully used to increase performance in large organisations and reported in journal papers  by the US-based Pitney Bowes (Green, Garrity, Gumbus & Lyons, 2002), Coors Brewing company (Walker, 1996) and European-based ABB industrie A.G (Ahn, 2001) as examples of its implementation.

The BSC has evolved from management reporting to a strategic tool used by executive teams to set strategy, align operations, and communicate with internal and external stakeholders (Gumbus & Lyons, 2002; Schatz, 2000). The framework of the four perspectives of the BSC helps translate strategy into objectives and measures. The four perspectives are financial, customer, internal process, and learning and growth (Kaplan & Norton, 1996a). The critical success factors created in each of the four perspectives are balanced between long term and short term, as well as internal and external factors that contribute to the business strategy. The BSC not only translates the strategy to operational terms but also aligns the organisation to the strategy by focusing employees on their role in accomplishing the company mission (Frigo & Krumwiede, 2000).

The BSC provides a set of metrics that track a firms progress against goals and objectives to meet company strategic initiatives. Motivating managers and employees and measuring their performance are key challenges (Denton & White, 2000). The organisation as well as individuals can monitor progress and use the card as a map to achieve business success. Starting with strategic initiatives, a company cascades departmental and individual objectives

that correspond to the strategy.  Reporting on these measures allows the firms to monitor progress and easily course-correct if problems are identified. A successful BSC programme should be a change process, not a 'metric' project (Kaplan & Norton, 2001).

In summary, the BSC helps an organisation in the following six ways:
- Promotes growth – due to focus on long-term strategic outcomes, not just short-term operational results.
- Tracks performance – individual and collective results can be tracked against targets in order to correct and improve.
- Provides focus – when measures are aligned to few critical strategies, the BSC provides focus on what is important to the company
- Alignment to goals – when you measure what is truly important to success, the measures become linked and support each other. Alignment occurs across the organisation.
- Goal clarity – the BSC helps respond to the question, 'How does what the leader does daily contribute to the goals of the enterprise?'
- Accountability – individuals are assigned as owners of metrics in order to provide clear accountability for results.

The organisation that is used in this study utilises the BSC approach to measure organisational performance down to the business unit level and individual performance.

## 2.13  Conclusion

The link between emotional intelligence and organisational performance, the relationship between organisational culture and organisational performance, and the interplay between emotional intelligence and organisational culture have been studied separately. Interestingly, few empirical studies have combined the simultaneous examination of organisational culture, emotional intelligence, and organisational performance. Some writers suggest that:
- The emotional intelligence of a leader affects organisational performance
- Certain types of organisational culture are linked to superior organisational performance, and

- Organisational culture, emotional intelligence and organisational performance are related; the precise nature and form of interaction amongst these three concepts are not fully understood.

As organisations wrestle with need to change and adapt to the challenges of the 21$^{st}$ century, the requirement for effective leadership is seen to be paramount (Chaudhry, 2000). In reviewing the research into leadership, it is evident that thinking has moved from a personality or trait basis, through a behavioural and contextual stage and into the now classic transformational/transactional models (Higgs, 2002). There is a strongly emerging view from the different streams of work, that EQ is a critical factor in the effective leadership of the 21$^{st}$ century organisations (Dulewicz & Higgs, 2003). The effective leadership of the 21$^{st}$ century organisations also requires leaders to influence the organisational culture, which according to Schein (1984) is the key to organisational excellence. Research on organisational culture has also shown that it has a relationship with organisational financial performance (Rashid et al., 2002:711). Kotter and Heskett (1992) found that organisational culture has a significant impact on an organisations long term economic performance. They found that organisations with organisational cultures that emphasized all the key managerial constituencies (customers, stockholders and employees) and leadership from managers at all levels, outperformed firms that did not have those cultural traits by a long margin. They also believed that organisational culture was becoming more important in determining the success or failure of firms in the next decade. According to Sadri and Lees (2001), a positive organisational culture could provide immense benefits to the organisation, and thereby a leading competitive edge over other firms in the industry. However, a negative organisational culture could have a negative impact on the organisational performance as it could deter firms from adopting the required strategic or tactical changes. Such type of organisational culture could inhabit future changes in an organisation.

Clearly, further research is necessary to identify, explore, and elucidate the character and pattern of the association amongst organisational culture, emotional intelligence, and organisational performance. However, some literature-based conclusions can be drawn. First, the purported relationship between emotional intelligence and organisational performance is supported by some empirical evidence (Sala, 2001; Servinc, 2001; Cavallo & Brienza, 2002; Sergio, 2001; Rapisarda, 2002; Bresnik, 2004), while the links between

organisational culture and organisational performance are supported by empirical studies (Gordon & DiTomaso, 1992; Denison, 1990). On the basis of the studies which Higgs and Dulewicz (1999) had done that links emotional intelligence to organisational culture, it is possible to propose that:

**There is a dynamic link between leader EQ and organisational culture with organisational performance.**

# CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY

## 3.1 Introduction

In chapter 1, the context in which the study is undertaken was explored. The need for the study was explored and the research problem and general hypothesis were formulated. Different scientific paradigms within which research can be done were discussed, and the choice of the quantitative approach was motivated.

In chapter 2, current theoretical and empirical knowledge about emotional competency and emotional intelligence, organisational culture and organisational performance were reviewed.

The research design chosen and followed by the author is discussed in this chapter. The chapter aims to give an outline of the scientific beliefs and paradigms informing the study. The second purpose of this chapter is to propose the research approach, methodology and describe the process to test the hypothesis developed in chapter 2. Thirdly, the methodology selected to collect and analyse the data are described.

## 3.2 Research approach

Research can be conducted within mainly three paradigms. These are the quantitative, qualitative and critical social science paradigms (Neuman, 2000; Bryman, 2004). The first two paradigms are the most frequently used approaches in research. The critical social science paradigm is rather a philosophy about the purpose of research than a methodology. The philosophy of the critical social science paradigm is that any approach (e.g. qualitative or quantitative) is acceptable as long as it contributes to the ideal of improving the quality of society (Neuman, 2000; Bryman, 2004).

Qualitative and quantitative approaches to research are often positioned as opposing approaches. Although there is no rule that only one approach may be used in research, researchers usually embrace only one of the two. In the rest of this section the different

approaches to the research are described and the choice of a research approach for this study is justified.

### 3.2.1   Scientific beliefs

Schurink (1998: 241) described the research paradigms driving quantitative and qualitative research as follows:

- The quantitative paradigm is based on positivism, which takes scientific explanation to be nomothetic (i.e. based on universal laws). Its main aims are to objectively measure the social world, to test hypotheses and to predict and control human behaviour.

- In contrast, the qualitative paradigm stems from the antipositivistic, interpretative approach, is idiographic, thus holistic in nature, and the main is to understand social life and the meaning that people attach to everyday life.

The differences in approach by quantitative and qualitative researchers with regard to different research perspectives (ontology, epistemology and methodology) as described in Table 3.1.

**Table 3.1:** **Difference between the quantitative and qualitative research paradigms**

| | Research perspective | Quantitative paradigm | Qualitative paradigm |
|---|---|---|---|
| **Ontology** | The nature of reality and human behaviour. | • Believes in an objective reality that can be explained, controlled and predicted by natural cause-effect laws.<br>• Human behaviour can be explained in causal, deterministic ways. | • Discards the external objective reality.<br>• Tries to understand reality by discovering meaning that people in specific settings attach to it.<br>• Behaviour is intentional and creative and it can be explained, but not predicted. |
| **Epistemology** | The relationship of researchers to reality and the road that they will follow in the search of truth. | • Researcher sees him/herself as detached from the object of the study.<br>• The researcher is therefore objective.<br>• S/he does not influence the object of the study and is not influenced by it. | • The researcher is subjective because s/he interacts with the subject. |

| | Research perspective | Quantitative paradigm | Qualitative paradigm |
|---|---|---|---|
| Methodology | Knowing how scientific methods and techniques employed obtain valid knowledge. | • Emulates natural science. <br>• Hypotheses are postulated and tested in order to verify them. | • Research is dialectical and interpretative. <br>• Qualitative methods are used to uncover the world of the subject. |

Sources: Schurink (1998); Mouton & Marais(1996)

### 3.2.2   The qualitative and quantitative approaches

Qualitative research is language based and conceptualised through observations of social reality. It describes people in their natural habitat. Quantitative research refers to frequencies, concepts, variables and measurements of people's perceptions and opinions. Qualitative research normally starts with an 'open' agenda and is led by the evidence to a conclusion. In contrast, quantitative research starts from definite hypotheses, postulates or propositions that are either supported or not supported by empirical evidence during the research. Schurink (1998: 241) describes the differences between the two approaches in Table 3.2.

**Table 3.2:    Differences between the quantitative and qualitative research approaches**

| Quantitative research | Qualitative research |
|---|---|
| Uses a deductive form of reasoning: collects data to assess preconceived models, hypotheses and theories. | Uses and inductive form of reasoning: develops concepts, insights and understanding from patterns in the data. |
| Uses and etic perspective of inquiry: the researcher determines meaning. | Uses and emic perspective of inquiry: meaning is derived from subject's perspective. |
| Nomothetic: aims to objectively measure the social world, to test hypotheses, and to predict and control human behaviour. | Idiographic: aims to understand the meaning that people attach to everyday life. |
| Sees reality as objective. | Regards reality as subjective. |
| Tests hypotheses with which the researcher starts off. | Captures and discovers meaning once the researcher has become immersed in the data. |
| Concepts are in the form of distinct variables. | Concepts are in the form of themes, motives and categories. |
| Seeks to control and predict phenomena. | Seeks to understand phenomena. |
| Observations are systematically undertaken in a standardised manner. | Observations are determined by the information richness of the settings. Different types of observations are used to modify and enrich understanding. |
| Data are presented by means of extracted figures gained from precise measurement. | Data are presented in the form of words, quotes from documents, and transcripts. |
| The research design is standardised according to fixed procedure and can be replicated. | The research design is flexible and unique and evolves throughout the research process. There are no fixed steps that should be followed and the research design cannot be replicated exactly. |
| Data analysis is undertaken by means of statistical procedures. | Data are analysed by extracting themes through content analysis. |
| The unit of analysis is variables, which are atomistic, i.e. the elements that form part of the whole. | The unit of analysis is holistic, concentrating on the relationships between elements and contexts. The whole is always more than the sum. |

Source: Schurink (1998:241)

To understand the different research processes, the methodologies of the quantitative and qualitative approaches to research need to be understood. These differences, as summarised by De Vos (1998: 40), are set out in Table 3.3.

**Table 3.3:     Differences between the quantitative and qualitative research processes**

| Steps | Quantitative approach | Qualitative approach |
|---|---|---|
| 1 | Choose a research problem/topic/theme. | Choose a research problem/topic/theme. |
| 2 | Identify the problem. | Consider the underlying assumptions in order to decide whether they will be the researcher's choice. |
| 3 | Review the relevant literature and related research. | Select the specific qualitative design to be used. |
| 4 | Formulate the problem formally. | Plan qualitative sampling. |
| 5 | Write out a research proposal. | Delineate the researcher's role (e.g. how entry to the research site will be gained and consideration of ethical issues). |
| 6 | Define each of the central concepts theoretically and operationally. | Establish the protocol for recording information. |
| 7 | Reformulate the research problem in the form of testable hypotheses. | Write out a research proposal. |
| 8 | Select a research design. | Collect the information through observation, interviews, documents and visual material. Record immediately. |
| 9 | Select the data-collecting methods and measuring instruments. | Process the data (preparing for analysis), i.e. reduce the data to themes and categories with the aid of coding procedures. |
| 10 | Conduct a pilot study. | Analyse and interpret, i.e. put it all together and draw conclusions. |

| Steps | Quantitative approach | Qualitative approach |
|---|---|---|
| 11 | Draw the sample(s). | Ensure internal validity e.g. by assessment criteria. |
| 12 | Collect the data (i.e. execute the selected research design). | Write the research report: plan the narratives; compare with theories and literature (literature control). |
| 13 | Process, analyse and interpret the data. | --- |
| 14 | Write the research report. | --- |

Source: De Vos (1998:40)

### 3.2.3   Research approach selected

The purpose of this research is to examine the dynamic effect of a leader EQ (measured using the HayGroup ECI 2.0 instrument) and organisational culture strength (measured as values and norms) on the performance of an organisation.  It is argued that the extent to which a leader is successful in building a strong culture will positively correlate with organisational performance.  However, extant theory suggests a leader's EQ does influence the leader's success in building a strong culture.  While a great deal of research has been done on EQ, there is no systematic research that has examined the black box of the hypothesized relationships suggested by the work of Schein (1992, 2004) and that of Goleman et al. (2002).

Given the primary research question, this study is framed within the positivist research paradigm (approach), that is it is quantitative in nature; the main purpose being to describe and explain (Neuman, 2000: 22). The quantitative paradigm is considered appropriate for this study as it involves the systematic collection of observable, measurable data, the statistical analysis of the data and the development of a statistical model. The aim is to empirically examine the relationship among variables that are measurable and that have accepted validated measurement instruments.  Additionally, the research attempts to quantitatively link the relationship among a specified set of variables. All of the concepts of interest in the present study have accepted measures and cannot be described as underdeveloped phenomenon.

The research is conducted within the ideals of a scientific approach. A scientific approach can be defined as "…the systematic, controlled, empirical, amoral, public and critical investigation of natural phenomena. It is guided by theory and hypotheses about the presumed relations amongst such phenomena" (Kerlinger & Lee, 2000:14).

The basic aim of science is to build theory. "A theory is a set of interrelated constructs, definitions, and propositions that present a systematic view of phenomena by specifying relations among variables, with the purpose of explaining and predicting the phenomena" (Kerlinger & Lee, 2000, p. 11). Concepts are the building blocks of the theory (Neuman, 2000; Bryman, 2004). Theories are general and apply to many people and places. Theories are tentative explanations for observable phenomena (Mouton & Marais, 1996). Social theory is a system of interconnected abstractions or ideas that condenses and organises knowledge about the social world.

Theories are regarded as the working truth until they are reviewed during empirical research. Each theory is evaluated empirically to determine how well it predicts new findings. Theories could be used to guide the research plan by generating testable hypotheses and organise facts from testing these hypotheses.

The ultimate purpose of research is scientific explanation: to discover and document universal laws of human behaviour (Neuman, 2000). According to Goodwin (2000), a theory in psychology is a set of consistent statements about some behavioural phenomenon:
- that best summarises existing empirical knowledge of the phenomenon;
- organise this knowledge in the form of precise statements of relationships among variables;
- provides tentative explanations of the phenomenon; and
- serves as the basis for making predictions about behaviour.

Theory exists on different levels. Micro-level theory deals with theories explaining behaviour at a micro-level. Macro-level theory refers to theory of larger aggregates. Meso-level theory attempts to link micro and macro level theories. This study is positioned at a meso-level because it links EQ and organisational culture variables with organisational performance.

Research is systematic and controlled and therefore has the potential to have fewer errors (Neuman, 2000). People have confidence in the outcomes of the scientific research because

it is empirical. Empirical refers to the way scientific information is collected through the senses and specialised scientific techniques. In scientific research the personal beliefs of the researcher are put outside the scientific investigation and the ideal of objectivity is pursued. Scientific research is subjected to independent testing such as peer review. Science is a social institution and a way of producing knowledge. This includes both the systems for producing knowledge and the knowledge produced from the system. Knowledge in science is organised in terms of theories. According to Neuman (2000), the norms of the scientific community include the following:

- *Universalism.* Research conducted anywhere by any institution is judged on its scientific merit.
- *Organised scepticism.* Scientist do not accept new ideas in a carefree or uncritical way.
- *Disinterestedness.* Scientist must be neutral, impartial, receptive and open to unexpected observations and new ideas.
- *Communalism.* Scientific knowledge must be shared with others.
- *Honesty.* Scientific research requires honesty. Dishonesty is a major taboo.

This study makes a contribution to the body of knowledge about the relationship among leaders EQ, organisational culture and organisational performance. It follows the ideals of the scientific approach and is subject to all the norms followed by the scientific community in pursuing a quantitative approach.

## 3.3 Research objectives, problems, hypotheses, constructs, variables and empirical research questions

### 3.3.1 Problem statement and objectives of the study

The purpose of this research is to examine the dynamic effects of leader EQ and/or organisational culture strength (measured as values and norms) on organisational performance. Currently, in South Africa, 95% of the registered companies are in the start-up early growth phase of their organisational life cycles (Naude and Krugell, 2003). It is also

recognised from literature that the growth of any economy is largely dependent on the survival and success of the start-up early growth organisations.  The extent to which a leader is successful in building a strong culture may positively influence performance and the ability of the organisation to progress and grow.  The second purpose of this empirical study will be to test these relationships.  Its scholarly contribution will be to offer knowledge that should shed light upon the critical linkage among EQ, organisational culture and organisational performance.

### 3.3.2  Research hypotheses

Hypotheses are statements that describe the relationship or difference between two or more variables related to the research problem or statement. Hypotheses are generated in two ways. Firstly, they are deducted from existing theories and models within a discipline. Secondly, they are inductively derived from observations, experience and visualisation. The latter approach is used in unstructured research (Mouton & Marais, 1996; Kerlinger & Lee, 2000; Bryman, 2004). Hypotheses are normally formulated as relationships that need to be tested. A hypothesis can also be described as conjectural statement of the relationship that exists between two or more variables.

In quantitative research the concept of a null hypothesis refers to the relationship where it is postulated that no relationship exists between the variables. The objective of the research procedure is to "disprove" the null hypothesis or to prove that the relationship between variables is not coincidental. Hypotheses are predictions of some specific event with a probability greater than chance. The prediction is based on theory. The hypothesis guides the study to prove its correctness. If enough evidence is found that the hypothesis is true, the confidence that the theory is good increases (Goodwin, 2000).

In order to achieve the general aim of this research, the following serve as the main hypotheses:

**H0:**	There is no relationship between the dimensions of the leader EQ and the dimensions of organisational culture on organisational performance.

**H1:**	There is a relationship between at least one dimension of EQ and at least one dimension of organisational culture on organisational performance.

The sub hypotheses can be stated as:

**H0$_a$:**	There is no relationship between the dimensions of EQ and organisational performance.

**H1$_a$:**	There is a relationship between the dimensions of EQ and organisational performance.

**H0$_b$:**	There is no relationship between the dimensions of organisational culture and organisational performance.

**H1$_b$:**	There is a relationship between the dimensions of organisational culture and organisational performance.

**H0$_c$:**	There is no relationship between any linear combination of the leader EQ dimensions and any linear combination of the organisational culture dimensions.

**H1$_c$:**	There is a relationship between at least one linear combination of the leader EQ dimensions and at least one linear combination of organisational culture dimensions.

### 3.3.3	Research concepts and constructs

Concepts are generalised terms/names used prior to the conceptualisation of constructs. Concepts consist of two parts, a symbol (word or term) and a definition (Neuman, 2000; Mouton & Marais, 1996). Concepts are the most elementary linguistic constructions with which human beings describe and understand reality. Concepts consist of two basic elements, connotation (or sense) of the concepts and reference. Connotation refer to the meaning that people attach to concepts while reference refers to the collection of happenings, characteristic, actions and processes that are included when a concept is used (Mouton & Marais, 1996: 60-61).

During the conceptualisation phase of the research, the concepts (words/terms) applicable to the theoretical study are refined and specified to clarify their meaning prior to their becoming constructs. Constructs are then operationally defined. Constructs are formed through generalisations about the detail items that form factors. Multiple items are needed to form constructs. Where multiple items are used, techniques such as factor analysis can be used to build construct reliability. Constructs are deliberately invented and developed for a specific scientific meaning (Kerlinger & Lee, 2000; Mouton & Marais, 1996; De Vos, 1998). In this study the key constructs are emotional intelligence, organisational culture and organisational performance

In order to communicate in an unambiguous way, clarity about concepts is necessary. To measure constructs, measurement instruments need to be developed that will allow the researcher to collect valid information about the constructs that are studied.

### 3.3.4 Research variables

Variables are constructs (in other words, constructs formulated from multiple items identified as empirical factors that meet minimum reliability criteria) used in the research process. Variables could be dependent (presumed effect) or independent (the cause). For example, a value can be attached to a construct that relates to the predictability of the influence that the construct has on the outcome of organisational performance. This allows the researcher to assign cause (independent variables) and effect (dependent variables) status to variables. Other values can be assigned to variables. Variables include, among others, stimulus and response (as described above) and attribute variables. Attribute variables are variables that cannot be manipulated, for example, heraldic factors and psychological attributes (Kerlinger & Lee, 2000).

In the research process the researcher uses the independent variables to ultimately predict the relationship with the dependent variables. Emotional intelligence was measured using the ECI instrument, organisational culture was measured using the OCP instrument and organisational performance was measured using the leader performance appraisal score and

the          organisational          unit          performance          score.

**Control variable: Single company with multiple sites**

| Independent variable(s) | Dependent variable(s) |
|---|---|
| • ECI<br>• OCP | • OCP<br>• Performance |

Moderator variable(s)
- Age of the leader
- Gender of the leader
- Race of the leader
- Years in the leader position
- Years in organisational employ
- Leader qualifications
- Number of employees
- Number of years the unit has existed for
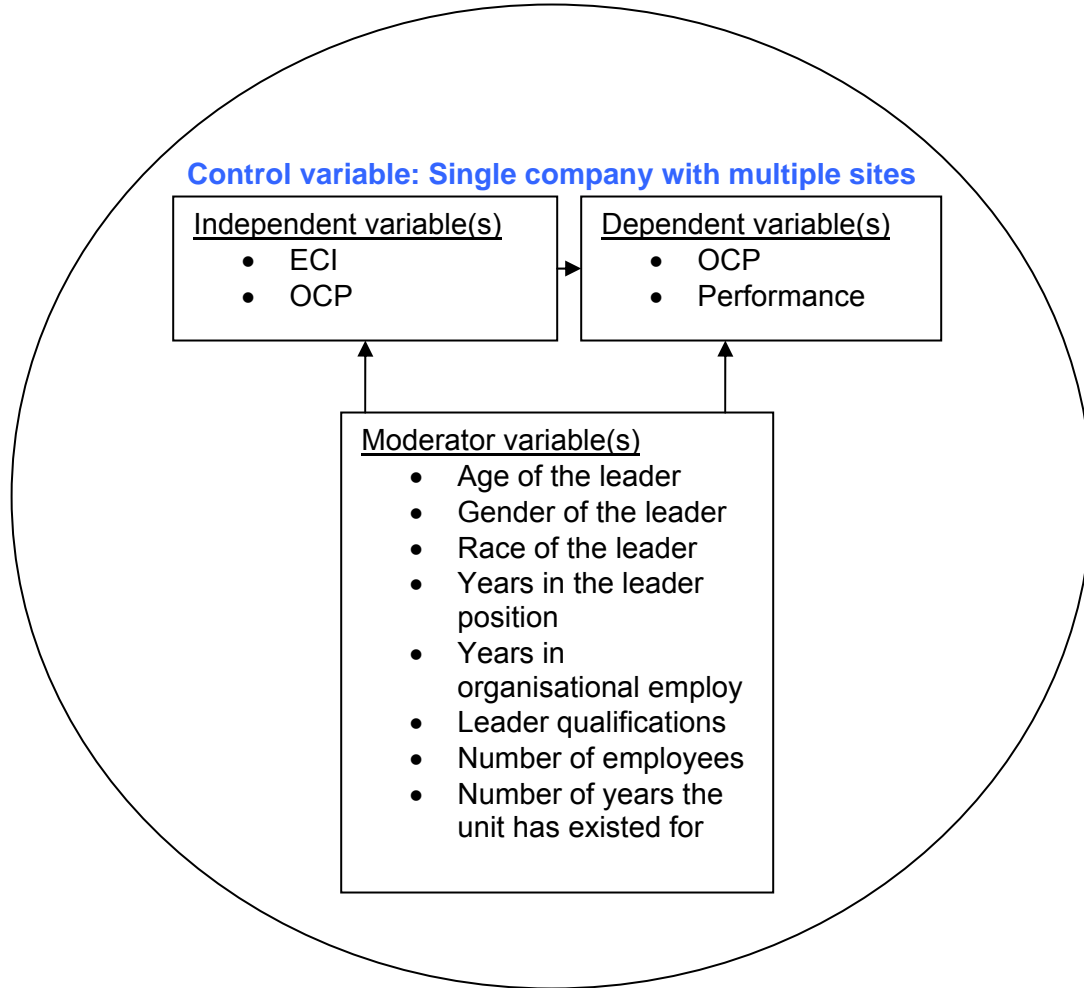
**Figure 3.1: The research variables**

The three way relationship between the EQ and organisational culture, EQ and organisational performance, organisational culture and organisational performance was tested independently and then repeated with the moderator variables (see figure 3.1 above).

Independent variables are constructs formulated during factor analysis. They are empirically identified and consist of more than four items to prevent pseudo variables. Multiple items also enable factor analysis (Mouton & Marais, 1996). Independent variables influence the dependent variable(s). There are 72 ECI items and 28 OCP items identified as part of existing instruments that will be used during the empirical study.

The dependent variable(s) is the extent to which the variable organisational performance is influenced by the leaders' emotional competency inventory and/or organisational culture. The organisational performance data, which is the leader's key performance appraisal score, was sourced from the human resources department. These scores are used to determine individual performance and the individual slice of the performance bonus pool.

Moderator variables are variables that exist in the background. They are not deliberately created, identified or introduced. Moderator variables are present, however, and they may have an effect on the dependent or independent variables. During the research process the relationship between the three categories of factors was investigated. Six moderator variables were identified that may influence the dependent and independent variables: Age of the leader; race of the leader; qualifications of the leader; number of years worked in the leadership position; number of employees reporting to the leader and the number of years the organisational unit has been in existence for. Gender of the leader and years in the company employ are two variables which were collected but did not play any part in the analysis. Of the eight moderator variables collected: age of the leader and race of the leader was collected as part of standard demographic data. Gender and qualification data was collected to verify the emotional intelligence assertions that woman make better leaders (Mandell & Pherwani, 2003; Mayer, Caruso & Salovey, 1999) and Goleman's assertions that beyond a certain threshold level, technical qualifications contribute very little to emotional competency (Goleman, 1998b; HayGroup, 2005b). The remaining moderator variable data was collected to ensure that the culture measurement criteria for the organisational unit, as derived from Schein's (1992, 2004) work were fulfilled. For an organisational unit culture to be evaluated, the organisational unit needed to have existed for more than 3 years, have people who have worked together and shared experience of the organisational unit existence and the leader (TSO) needed to be in the position since the creation of the unit/ organisation.

**3.4 Research methods**

**3.4.1 The study sample**

**3.4.1.1 The study setting**

The major contribution of this study is that it is the first empirical test of the relationships among EQ, organisation culture and organisational performance. While these have been measured in two-way relationships, there is no research that has attempted to establish these linkages, especially in the context of Schein's (1983) seminal theory that organisational culture strength is critical for organisational performance in the early years of an organisation's life cycle.

The ability to replicate a scenario and dictate a particular outcome; the ability to exclude, isolate, or manipulate the influence of a variable in a study; a critical factor in inference from an experiment, implies that all factors, with the exception of the independent variable, must be held constant and not confounded with another variable that is not part of the study (Cooper & Schindler, 2001: 760; Mitchell & Jolley, 2007). In this study, one of the main reasons for studying a single company with multiple units geographically dispersed was to allow the researcher to keep certain variables constant. The choice of a single company kept vision, strategy, structure, systems, processes, HR practices, finance and marketing constant.

The study was conducted at a large South African, autonomous, multi-unit industrial organisation. The group consisted of 6 decentralised autonomous regions. In all of the regions there are at least 205 geographically dispersed business units, catering for the technical needs to the greater South African community. Each of these business units has an operating and capital budget in the region of R15 million to R30 million, a staff complement of between 15 and 50, and a leader/manager appointed to ensure that the business unit objects are achieved. The group has more than 15 000 employees and is a major player in its targeted market. During the period of the research the group received several external awards and accolades. The organisational operating model is shown in Table 3.4.

### 3.4.1.2 The organisational business model

**Table 3.4: The organisation's operating model**

| Wires Business (Engineering/Networks) | Customer Categories | Retail Business (Customer Services) |
|---|---|---|
| Overall management of network infrastructure in the delivery of services to the end user | • Residential<br>• Traction<br>• Agricultural<br>• Key Customers<br>• Commercial<br>• Redistributors<br>• Prepaid<br>• Mining and Industrial | Purchase services from the wholesale market and sell to the end user/ redistributors (Municipalities) |
| **Functional area:**<br>• Construction of network infrastructure<br>• Installation of meters<br>• Inspection, testing, upgrade and maintenance of equipment<br>• Technical customer connections and disconnections | | **Functional Area:**<br>• Sales and Marketing<br>• Energy Trading<br>• Customer Services<br>• Pricing and Tariff planning<br>• Call Centre<br>• Billing |

The Group Business Model consists of two core business areas: *Engineering (Wires Business)* and *Customer Services (Retail Business)*. The Wires Business is responsible for the creation and maintenance of infrastructure, whilst the Retail Business provides retail services for customers with a pre-defined consumption limit per annum. The functions of the core businesses are depicted below.

The Customer Service operations are managed in *24 Customer Service Areas* covering the whole of South Africa. Engineering operations are aligned to *205 Technical Services Centres*, organised internally into *32 Field Service Centres* across South Africa. All the group operational assets are managed at regional level to ensure the correct application of local knowledge and to provide an adequate level of management flexibility to the business.

### 3.4.1.3  Field Services

Figure 3.2 below shows the regional wires business (engineering/networks) part of the operating model. The study was undertaken in the field services part of the business and the unit of analysis of the study was the Technical Services Officer (TSO) highlighted in red on the organogram, who is the leader/ manager of Technical Services Centre (TSC). The people highlighted in green on the organogram form part of the study sample. Two hundred and five (205) Technical Services centres were targeted to be study participants.

**Figure 3.2: Regional Field Services Organisational Chart**
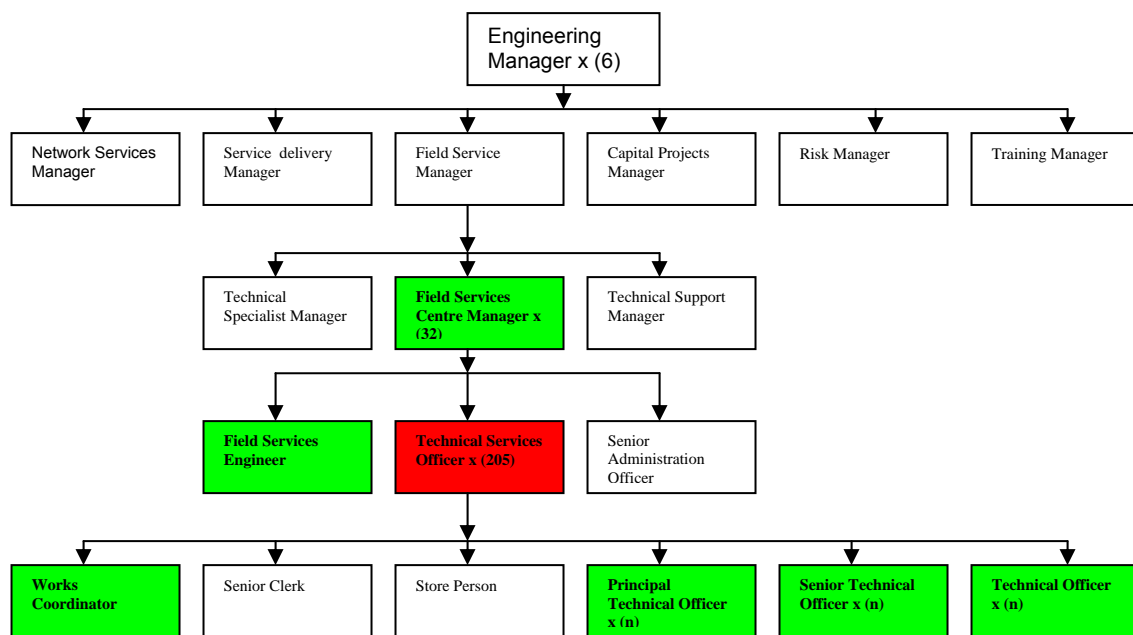


### 3.4.1.4  Background to the creation of Field Services Centres and Technical Services Centres

#### 3.4.1.4.1  The history of the TSC

In 1997, the organisation embarked on a process of change to address the inefficiencies created in the field services area. This restructuring of field services resources was to place them in a position to respond timeously to customer and client needs in the most effective manner. The basic building block specified the organisation, technology, process, people, tools, equipment and infrastructure in proportions which were suitable for the specific jobs. This restructuring gave rise to the Field Services Centres and the Technical Services

Centres. One of the key reasons for the restructuring was to destroy the depot mentality which existed prior to the 1994 dispensation.   The focus of the study here is on the TSC. Thus, the use of the TSC as the unit of analysis allowed for an examination of Schein's model which argues that a leader in the early phases of a new organisation must engage in behaviours to support the development of a strong culture.  Given that these TSCs were only established in 1997, Schein (1985, 1992, 2004) also stated that the early growth stage of the organisation is the critical period in which the organisational culture is created.

### 3.4.1.4.2  Field services centres

Field service centres are strategically placed offices that manage all field services resources and dynamic network operating for a region. It is a centre where the medium and long term operational plans and budgeting takes place.

### 3.4.1.4.3  Technical services centre (TSC)

The description of a TSC is as follows:

- Technical services centres are geographically placed field execution resources pools that reflect the network and customer demographics. Fieldwork execution is managed from these institutions. All maintenance, repairing, building and other work are executed from this institution and will be reflective of the customer and system base. Each TSC typically has 10 to 50 staff.
- TSC staff members respond to service faults within +/- 60 minutes of the problem being reported.
- The main functions of the TSC staff include maintenance, repairing and building distribution networks.
- The TSC staff work within a defined geographical area and serve all the customers therein.
- The distribution, reticulation and urban networks are combined in one  (Field Service Centre) FSC.
- The TSO (Technical service officer) manages a fleet of 10/15 vehicles.

- The TSO manages external operational contracts.
- The TSO optimises the resources under his management.
- The TSO manages standby and overtime work.
- A staffing model is used as base for staffing numbers.
- All TSC staff report to Technical Services Officer (TSO).

### 3.4.1.4.4  Technical services officer (TSO)

The TSO or leader/manager must ensure that for a designated geographical area, the customer's technical needs and business objectives are satisfied by managing all allocated resources in accordance with the group standards, procedures, directives, work practices, guidelines, policies and service agreements.

### 3.4.1.4.5  TSO key performance areas

The key performance areas according to the researched organisation's BSC is as follows:

- Human Resources
- Work Execution
- Statutory and Regulatory Compliance
- Network Asset Management
- Finance and Commercial
- Network Operations
- Contractor Management
- Customer Services

As will be noted later, two dimensions of organisational performance were evaluated. The TSC competition scores measures the success of the TSC in managing the above key performance indicators. The second measure of organisational performance is the TSO performance appraisal score. This is an individual measure and evaluates how well he/she managed the TSC.

### 3.4.1.4.6  Sample selection criteria

In the first stage, the founding and early growth of a new organisation, the main cultural thrust comes from the founders and their assumptions (Schein, 1985). In choosing the sample to undertake the study it is important to make sure that the founders/ original leaders were still in place at the TSCs. The TSCs were created in early 1997 in response to the changes in the way the organisation delivered its field services and also to address the key growth and equity issues highlighted by the new South African government.  Most of the TSOs (approx 80%) initially chosen to create the new TSC structure were still in their current position.

- There cannot be an organisational culture unless there is a group that 'owns' it. Culture is embedded in groups; hence the creating group must always be clearly identified. A given group is a set of people:
  - Who have been together long enough to have shared significant problems;
  - who have had opportunities to solve these problems and to observe the effect of their solutions; and
  - who have taken in new members.

A group's culture cannot be determined unless there is such a definable set of people with a shared history (Schein, 1984).  The age of the organisation is important in choosing the sample as it addresses the point that Schein makes about an organisation having had a shared history. For the purposes of this study it was important to choose an organisation that had to survive and in that process developed a culture. According to the organisational life cycle, empirical studies done by Hanks, Watson, Jansen and Chandler (1993) and Lester, Parnell and Carraher (2003) highlight that organisations in the start-up/early growth phase are considered to be organisations that are:

- Less than 10 years old but more than 3 years old.
- Have the founder as leader of the organisation.
- Have simple structures and systems.

At the time of data collection, the TSCs were 8 years old.

### 3.4.1.4.7  The questionnaire

The questionnaire consists of the ECI instrument, the OCP instrument and the moderator variables was distributed to 130 of the 205 business units (Appendix A-D). From each business unit 7 questionnaires where completed by the following:

- The business unit area manager (**FSAM**).
- Colleague of the business unit manager (**FSE**).
- The business unit leader/manager and (**TSO**).
- Four questionnaires from a cross section of the business unit were filled in, representing the different levels of staff within the business unit and reporting to the (**TSO**), hereafter referred as the '**staff**' comprised the following:
  - Principle technical officer (**PTO**)
  - Senior technical officer (**STO**)
  - Technical officer (**TO**)
  - Works coordinator (**WC**).

### 3.4.2  Data collection procedures

Data collection is the process of obtaining data. In this study, data were obtained for the independent variables and moderator variables through an administered questionnaire. The TSO performance appraisal data were sourced separately by the company HR department as part of its annual business unit and individual performance appraisal. This eliminated the problem of common method variance (Mouton, 1996).

### 3.4.2.1  Data sources for all variables

### 3.4.2.1.1  Emotional intelligence

Emotional intelligence was measured by the Emotional competency inventory (ECI). The ECI is a 360-degree tool designed to assess the emotional competencies of individuals and organisations. It is based on emotional competencies identified by Goleman (1998a) in *Working with Emotional Intelligence*, and on competencies from Hay/McBer's (1996) *Generic Competency Dictionary* as well as Boyatzis's Self Assessment Questionnaire (SAQ)

(HayGroup, 2005a). Access to the instrument for research purposes is managed by the Hay/McBer partnership.

The researcher wrote to the HayGroup and requested access to the instrument for research purposes. The response from the HayGroup was that the researcher had to attend an accreditation course to be able to administer the instrument and a detailed research proposal had to be submitted to the HayGroup research committee and approved by this committee before access to the instrument would be given. The researcher attended the Haygroup accreditation course held in February 2005 (see Appendix K for accreditation) and then submitted the research proposal to HayGroup research committee requesting permission to use the ECI version 2.0 instrument for research purposes. Unanimous approval was granted in March 2005 (see Appendix I for email correspondence). The panel noted that "the proposal is a fantastic one. It would provide data on the organisational level of validation against both organisational climate/culture and organisational performance".

### 3.4.2.1.1.1 The emotional competency framework

The Emotional Competency Inventory 2.0 (ECI) is a 72 item questionnaire which measures 18 competencies organised into four clusters: self-awareness, self-management, social-awareness, and relationship management.

**Self-awareness** concerns knowing one's internal states, preferences, resources, and intuitions. The self-awareness cluster contains three competencies:

- **Emotional awareness**: Recognising one's emotions and their effects
- **Accurate self-assessment**: Knowing one's strengths and limits
- **Self**-**confidence**: A strong sense of one's self worth and capabilities

**Self-management** refers to managing one's internal states, impulses, and resources. The self-management cluster contains six competencies:

- **Emotional self-control**: Keeping disruptive emotions and impulses in check
- **Transparency**: Maintaining integrity, acting congruently with one's values
- **Adaptability**: Flexibility in handling change
- **Achievement**: Striving to improve or meeting a standard of excellence

- **Initiative**: Readiness to act on opportunities
- **Optimism**: Persistence in pursuing goals despite obstacles and setbacks

**Social-awareness** refers to how people handle relationships and awareness of others' feelings, needs and concerns. The social-awareness cluster contains three competencies:

- **Empathy**: Sensing others' feelings and perspectives, and taking interest in their concerns
- **Organisational-awareness**: Reading a group's emotional currents and power relationships
- **Service orientation**: Anticipating, recognising, and meeting customers' needs

**Relationship management** concerns the skill or adeptness at inducing desirable responses in others. The relationship management cluster contains six competencies:

- **Developing others**: Sensing others' development needs and bolstering their abilities
- **Inspirational leadership**: Inspiring and guiding individuals and groups
- **Change catalyst**: Initiating or managing change
- **Influence**: Wielding effective tactics for persuasion
- **Conflict management**: Negotiating and resolving disagreements
- **Teamwork and collaboration**: Working with others towards shared goals. Creating group synergy in pursuing collective goals

### 3.4.2.1.1.2  Clustering of competencies

The ECI represents a set of competencies related to emotional intelligence. As with any competency model, the reader should not assume that a person must be rated high on all competencies to be effective. Boyatzis et al. (1999) argue that ECI competencies can be organised into clusters. Within any cluster the competency has one of four relationships:

- They may be parts of a whole and complement each other in functional behaviour (e.g. adaptability and conscientiousness).
- They may alternate manifestations. The specific competency used would vary by setting or stimulus.
- The competencies within the cluster may be compensatory, that is, using one competency makes up for using less of another (e.g. achievement orientation and initiative).

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- The competencies within the cluster may be antagonistic. Frequent use of one "crowds" out the ease or possible use of another (e.g. self-control vs. initiative). If someone demonstrates a great deal of self-control and inhibits their impulses and actions, they would have an increasingly difficult time demonstrating initiative and starting things before anyone asks.

The implication of competency clustering is that it does not make sense, on theoretical basis, to obtain an overall ECI score by simply averaging the scores for all competencies in all clusters. A researcher must not assume that one set of competencies fits all situations. There are many ways to be equally effective. Defining the possible configurations that lead to effectiveness results in what is called an algorithm.

For practitioners using the feedback report produced by the HayGroup (2005a), they outline a generic algorithm that has been shown to be effective for managers in many situations and is appropriate for assessment and development purposes. This algorithm is as follows:

- The three competencies in the **self-awareness** cluster are mandatory and must all be present.
- In the **self-management** cluster, emotional self control is mandatory. Transparency and adaptability are somewhat antagonistic. Transparency is about stability and reliability and adaptability is about flexibility and openness to change (Jacobs, 2001). A person must show one of theses competencies. Finally, a person must show either achievement or initiative or optimism.
- In the **social awareness** cluster, empathy is mandatory. Organisational awareness and service orientation are alternate manifestations of each other, thus a person must have one or the other. Organisational awareness tends to be used in higher level management or executive positions where understanding and navigating the organisation is critical for success. Service orientation tends to be important in positions relating directly to customers (external or internal) (Jacobs, 2001).
- In the **relationship management** cluster, influence is mandatory. In addition to this competency, an individual should have one competency from the group of developing others, inspirational leadership, and change catalyst. They must also have either conflict management or teamwork and collaboration.

The nature of the competency model is such that although the competencies in each cluster are conceptually similar, a statistical factor analysis may not show that the items in a cluster hold together. The reason for this is that competencies in a cluster are not always complementary suggesting that they are not necessarily expected to be found together and they may be alternate manifestations, compensatory, or antagonistic. Nevertheless, a confirmatory factor analysis conducted by Manuel, Serlavos & Boyatzis (2005) found that the model was a reasonable fit (Chi-squared=856, df=55, p=0.0, RMSEA=0.047, NFI=0.998, FRI=0.993).

### 3.4.2.1.1.3  The ECI measurement scales

The survey questions describe critical aspects of each skill that indicate the presence of this skill in the behaviour of the individual being assessed. The frequency with which the person being assessed demonstrates the behaviours related to the skill are the best measure for that skill. Therefore, the questions in the emotional competency inventory are structured using a 6-point frequency interval scale. The six behavioural anchors are:
1= Never
2= Rarely
3= Sometimes
4= Often
5= Consistently
6= Don't know

### 3.4.2.1.1.4  Competency levels

Each emotional intelligence competency can be exhibited at one of four levels. Any particular question in the ECI represents one level of one competency, thus there are 72 questions (18 competencies times 4 levels). Keep in mind that a match between competency level and job may be more important to effectiveness than higher average scores. There is an optimal level of each competency for a given job. In some situations demonstrating too much of a competency can be just as problematic as having too little (Spencer & Spencer, 1993). The implication of this is that it is not always appropriate to assume that higher scores will

translate into better performance. A person, who is at the optimal score for each competency, as determined by the specific job, may perform better than someone with higher scores.

The optimal level for the following competencies is level 4:
- Self confidence
- Adaptability
- Initiative
- Empathy
- Service orientation
- Conflict management

The optimum level for all other competencies is level 3.

### 3.4.2.1.2  Organisational culture

The original organisational culture profile instrument developed by O'Reilly & Chatman (1991) has gone through several modifications (Judge & Cable, 1997). Sarros, Gray and Densten (2002) last modified and simplified the instrument. The researcher wrote to Professor Sarros, who is based a Monash University and gained permission to use their modified version of the OCP instrument (see Appendix J).

### 3.4.2.1.2.1  The organisational culture profile (OCP)

There are some fundamental areas of agreement in the definition of culture, but less agreement exists about its measurement. Rousseau (1990) stated that the quantitative assessment of culture is controversial. She discusses how advocates of qualitative methods for studying culture have argued that much of what constitutes a culture may be a unique social construction of reality, perhaps unconscious on the part of the culture members (Schein, 1999; Smircich, 1983). Schein (1983) in explaining the levels model points out that the artefacts level is easy to observe but difficult to decipher and therefore not measurable. Similarly he argues that the third level which is the basic assumptions is tacit and taken for granted and therefore not measurable. However, the values he argues can be inferred by

interviewing the staff. Acknowledging that some aspects of organisational culture may not be easily accessible, Rousseau (1990) also asserts that certain dimensions of culture may be appropriately studied using quantitative methods, indeed suggesting that quantitative assessments offer an opportunity to understand the systematic effects of culture and individual behaviours.

One way to assess culture quantitatively is to focus on the central values that may be important to an individual's self concept or identity as well as relevant to an organisation's central value system. Weiner (1988) suggested this perspective, noting that a number of key pivotal values concerning organisation-related behaviours and state-of affairs were shared across units and levels-by members of an organisation resulting in a central value system. To characterise an organisation's culture in terms of its central values requires first that the range of relevant values be identified and then that an assessment be made of how much intensity and consensus there are among organisational members (Enz, 1988; Saffold, 1988). O'Reilly (1989), drawing on earlier research on measuring norms, noted two important characteristics of strong cultures. One is intensity on the part of organisational members displaying approval or disapproval to those who act in certain ways and the second is the presence of crystallisation, or widespread agreement on values among members. If there is no substantial agreement that a limited set of values is important in a social unit, a strong culture cannot exist. If there is strong and widespread agreement about the salience and importance of specific values, a central value system or culture may exist.

### 3.4.2.1.2.2 The OCP measurement scales

The original organisational culture profile (OCP) developed by O'Reilly et al. (1991), revised by Judge and Cable (1997) and since further revised by Sarros, Gray and Densten (2002) was used to measure organisational culture orientations. This new shortened version of the original OCP instrument now consists of 28 items (Sarros et al., 2002) constituting seven factors as follows: competitiveness, social responsibility, supportiveness, emphasis on rewards, innovation, performance orientation, and stability. The survey questions describe critical value items that indicate the presence of this factor in the Technical Service Centre (TSC) being assessed. The frequency with which the TSC being assessed demonstrates this cultural factor is the best measure for that value. Therefore, the questions in the

Organisational Culture Profile (OCP) are structured using a 5-point frequency interval scale. The five value anchors are:

1= Not at all

2= Small

3= Moderately

4= Large

5= Very large

The OCP questionnaire was completed by the seven participants identified per TSC consisting of the field services manager, the field services engineer, the technical services officer and 4 staff members reporting to the TSO. The average of the seven questionnaires provides an indication of the strength of the culture dimension, based on the seven dimensions measured. Table 3.5 shows the seven culture dimensions and their properties per dimension. The strength of the organisational culture will be measured using the following guideline below. **Cmean** represents the mean scores for each of the OCP dimensions:

$0 < 1$ is indicative of a very weak culture

$1 < $ **Cmean** $< 2$ is indicative of weak culture

$2 < $ **Cmean** $< 3$ is indicative of substantial culture

$3 < $ **Cmean** $< 4$ is indicative of strong culture

$4 < $ **Cmean** $< 5$ is indicative of very strong culture

**Table 3.5: Dimensions of organisational culture and their properties**

| Organisational Culture dimensions | Properties |
|---|---|
| Competitiveness | • Achievement Orientation<br>• An emphasis on quality<br>• Being distinctive-being different from others<br>• Being competitive |
| Social Responsibility | • Being Reflective<br>• Having a good reputation<br>• Being socially responsible<br>• Having a clear guiding philosophy |
| Supportiveness | • Being team oriented<br>• Sharing information freely<br>• Being people oriented<br>• Collaboration |
| Innovation | • Being innovative<br>• Quick to take advantage of opportunities<br>• Risk taking<br>• Taking individual responsibility |
| Emphasis on Rewards | • Fairness<br>• Opportunities for professional growth<br>• High pay for high performance<br>• Praise for good performance |
| Performance Orientation | • Having high expectations for performance<br>• Enthusiasm for the job<br>• Being results oriented<br>• Being highly organised |
| Stability | • Stability<br>• Being calm<br>• Security of employment<br>• Low conflict |

### 3.4.2.1.3  Organisational performances measures

### 3.4.2.1.3.1  TSC performance measures

The TSC's performance is measured annually by the organisation using objective quantifiable measures.   Performance is measured by the following 21 **Key Performance Indicators (KPI)** and the total score is sum of each of the 21 KPI's. For the purpose of this study only the total score was used.

- Points for average training days (0-20)
- Points for average absenteeism (0-35)
- Points for disabling injury rate (DIIR) (0-50)
- Points for vehicle injury incident rate (0-35)
- Points for risk assessment RAS total score (0-55)
- Points for Maxi care (0-30)
- Points for operating account variance (0-15)
- Points for average % overtime (0-10)
- Points for stock turn ratio (0-15)
- Points for fleet all vehicles (exclude trucks and equipment) L/100 km Points (0-20)
- Points for % outages taken on time (0-15)
- Points for % outages ended on time (0-15)
- Points for % scheduled  quality assurance QA closed (0-15)
- Points for % dispatched quality assurance QA closed (0-15)
- Points for % mile 2 vs. mile 1 feedback (0-15)
- Points for system average incident frequency index (SAIFI) (0-40)
- Points for system average incident duration index (SAIDI) (0-30)
- Points for distribution service level index (0-20)
- Points for reticulation service level index (0-20)
- Points for preventative to corrective maintenance cost ratio (0-15)
- Points for operating cost per employee (0-30)
- **Total score from all KPI's above (0-515).**

At the end of each year the TSC competition scores are calculated independently by the technical audit department within the distribution part of the business. Ratings are done

objectively based on actual measured data. Each of the 21 KPI's listed above has a range (see range in brackets) and the aggregated sum of the 21 KPI's provides a total score for the TSC. The TSC scores are than ranked and in this way the winners of the TSC annual competition are determined.  For the purpose of this study the following criteria was used to determine performance

- o TSC performance score in the range 515 to 412 was considered excellent
- o TSC performance score in the range 411 to 306 was considered good
- o TSC performance score in the range 305 to 206 was considered satisfactory
- o TSC performance score in the range 205 and less was considered poor

### 3.4.2.1.3.2 TSO performance appraisal measures

A second measure of performance was used in this study.  Each (TSO) is individually evaluated tri-annually through the performance appraisal (PA) system.  The PA is based on balanced scorecard principles (Kaplan & Norton, 1992, 2004) and consists of the following key perspectives:

- Financial perspective
- Customer perspective
- Operational perspective
- People perspective
- Corporate citizen perspective

At the beginning of each year the TSO meets with his FSAM and decides the weighting for each of the balanced score card perspectives based on what is decided as the organisational priorities at head office for that particular year. These weightings are than standardised for each of the TSO's performance appraisals. Performance is evaluated bi-annually, mid-year and end of the year, and the average is used to determine performance bonus payouts. The performance bonus payouts can range from 0 to 50% of an individual's annual salary. The ratings are done objectively based on actual measured data. A PA score based on a 1 to 5 scale is then produced. The PA ratings describe critical values that indicate the presence of the value in the TSO being assessed. The frequency with which the TSO being assessed demonstrates this value is the best measure for that value. Therefore, the **PA scores** are structured using a 5 point frequency ratio scale. The five value anchors are:

**PA score** <1 = Floor (indicates bad performance)

1<**PA score** <2 = Kick-in (indicates poor performance)

2<**PA score** <3 = Norm (indicates acceptable performance)

3< **PA score** < 4 = Stretch (indicates good performance)

4<**PA score** < 5 = Ceiling (excellent performance)

The PA scores are collected annually by the group human resources department. Permission to use these scores in the study was obtained from the group provided confidentiality was maintained.

Both measures of performance, above, were used in this study given its intent to examine the earlier relationships identified. This allows for an exploration of which measure of performance (TSC competition or the individual TSO PA score) were more correlated with the ECI and the OCP instruments.

### 3.4.2.2 Moderator variables

In addition to the questionnaire measuring the independent and dependent variables, a number of moderator variables were built into the questionnaire and the data was collected. The data collected was:

- o TSO age
- o TSO race
- o TSO gender
- o Qualifications of the TSO
- o TSO tenure
- o Size (number of employees)
- o Number of years employed within the organisation
- o Number of years the TSC has been in existence for

The first 4 moderator variables are standard demographic data. TSO tenure was collected to check how long the TSO has been in the position of TSO. This information was collected to test Schein (1992, 2004) assertion that the founder/initial leader creates the culture within the TSC. The number of employees was collected to verify that there is a group. According to

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Schein (1985, 1992, 2004) for a group to exist it has to have people. Without a group having share the same experiences culture cannot exist (Schein, 2004). The number of years employed within the organisation was collected to test how long the leader has worked for the organisation. The number of years the TSC has been in existence for was collected to assess if the business unit was less than 10 years old but more than 3 years old. For an organisation to be in the start-up/early growth phase the organisation needs to be under 10 years old (Lester et al., 2003).

## 3.5   Data analysis

The analysis of the data was done using SPSS (14) and SAS 9.3 package to answer the empirical research questions:

**Empirical question 1**: What are the basic statistical features of the data? Descriptive statistics allow an understanding of the basic make-up and features of the data.

**Empirical question 2**: What is the reliability and construct validity of the dimensions of the ECI and OCP instruments? Confirm that the ECI and the OCP instrument measures one underlining construct.

**Empirical question 3**: What are the descriptors of ECI, OCP and organisational performance as variables for this sample? A comparison of the ECI data collected in this study with the results to the HayGroup international norm.  A comparison of the OCP data collected in this study with the Australian norm. Identify the ECI characteristics that would lead to better leaders. Test Schein's assertion with regard to the strength of culture in the start-up/early growth phase of the organisational life cycle.  Review the performance data as measured by the organisation.

**Empirical question 4**: What is the impact of the moderator variables on the independent and dependent variables? Through t-Tests the relationship between the moderator variables and the study variables was tested in order to determine the influence of the moderator variables on the study variables namely the 18 ECI dimensions, the 7 OCP dimensions and performance.

**Empirical question 5**: What predictive value can be derived from the independent variables on the dependent variables? Canonical correlations and stepwise multiple regressions were used to determine the predictive value of the independent variables on the dependent variable(s).

### 3.5.1 Empirical research question 1: What are the basic statistical features of the data?

Descriptive statistics applied in the study describes the basic features of the data and allows comparisons across different data sets. The purpose of the descriptive statistics is to develop an understanding of the data and allows the researcher to determine if the data could be used for further analysis. Descriptive statistical techniques include the description of the distribution, central tendency and dispersion of the variables in the data. Data is also analysed to mitigate the impact of missing data and outliers that could distort relationships. The data related to the independent variables as well as the dependent variables was analysed to determine whether it can be used for further analysis.

### 3.5.2 Empirical research question 2: What is the reliability and construct validity of the dimensions of the ECI and OCP instruments?

According to Hair et al. (1998) factor analysis is a generic name given to a class of multivariate statistical methods whose primary purpose is to determine the underlying structure in a data matrix. Items are clustered on the basis of the association of the different items with a factor. Factor analysis seeks the least number of factors to account for the largest amount of common variance of a set of variables.

Reliable scales will be used as independent predictors for the independent variables to predict the dependent variables or outcomes in linear regression models. Scales are only accepted if they are reliable. Reliability is the extent to which the measurement is free of variable errors (i.e. internally the items are consistent). Cronbach's alpha was used to measure the reliability and is reported per factor in this research. Where the Cronbach's alpha is <0.7, the factor will be rejected. Since the researcher is using existing instruments (ECI and OCP) a confirmatory factor analysis will be done to confirm that only one construct

is being measured. Techniques such as the Kaiser-Meyer-Olkin measure of sample adequacy (>0.6) and the Bartlett test of sphericity (p-value<0.0005) were used to determine if the data can be used for factor analysis.

### 3.5.3 Empirical research question 3: What are the descriptors of ECI, OCP and organisational performance as variables for this sample?

#### 3.5.3.1 Assessment of the ECI results

A summary of the mean scores for each of the category of respondents (FSAM, FSE, TSO, TSC Staff) was calculated for the 18 dimensions of the ECI instrument. The mean scores of the TSOs for each of the dimensions was compared to the average of the (FSAM, FSE and TSC Staff) referred as the '**total othe**r' score.   The HayGroup (2005a) provides a competency cluster review. This review was applied to the '**total other**' scores and compared to the HayGroup norm.

#### 3.5.3.2 Assessment of the OCP results

A summary of the mean scores for each of the category of respondents (FSAM, FSE, TSO and TSC staff) was calculated for the 7 dimensions of the OCP instrument. The '**total score**' which was the average of each of the respondent groups (FSAM, FSE, TSO and TSC staff) is calculated and used to assess the strength of the organisational culture for each of the 7 OCP dimensions.

#### 3.5.3.3 Assessment of the performance data

The TSO's performance appraisal scores sourced independently from the organisation's HR department was used to calculate the mean performance score for the TSOs. This mean score was compared to the organisations performance appraisal evaluation criteria to assess the mean performance of the TSO's. Similarly, the TSC competition score was sourced independently from the organisations technical audit department and was used to calculate the mean performance score for the TSC's. This mean score was compared to the TSC

performance evaluation criteria, as described in section 3.4.2.1.3.1, to assess the mean performance of the TSC's.

### 3.5.4 Empirical research question 4: What is the impact of the moderator variables on the independent and dependent variables?

The relationship between the moderator variables and the independent variables was determined by using multivariate statistical techniques. Multivariate techniques are dependent on certain assumptions being met. The assumptions include multivariate normality of the variables, homescedasticity of the dependable variable and linear correlation relationships between continuous variables. The following uni- and multivariate analysis techniques were used:

- ANOVAs (analysis of variances) and t-Tests

Assumptions pertaining to each test were made prior to performing the analysis.

### 3.5.5 Empirical research question 5: What predictive value can be derived from the independent variables on the dependent variables?

#### 3.5.5.1 Canonical correlation study

With canonical analysis the objective is to correlate simultaneously several metric dependent variables and several metric independent variables. The underlying principle is to develop a linear combination of each set of variables (both dependent and independent) to maximise the correlation between the two sets. In the canonical correlation study, organisational culture (OCP) and its dimensions was the dependent variable and ECI dimensions were the independent variables (Hair et al., 1998).

### 3.5.5.2  Stepwise multiple regression analysis

Multiple regression is the appropriate method of analysis when the research problem involves a single metric dependent variable presumed to be related to two or more independent variables. The objective of multiple regression analysis is to predict the changes in the dependent variable in response to changes in the independent variable. This objective is most often achieved through the statistical rule of least squares (Hair et al., 1998).

Organisation performance was the dependent variable, measured by the TSO performance appraisal scores. Organisational culture and/or emotional competency inventory and its dimensions were the independent variable.

### 3.6  Sample design and sampling methods

### 3.6.1  Sample population

The sample for the research comprised the 205 Technical Service Centres (TSC) which are geographical dispersed across South Africa. The reason for choosing this sample was the difficulty of gaining permission to collect a complex set of data.  Additionally, the research design required access to performance data at the unit level and individual level.  Finding an organisation to agree to the requirements of the data collection proved to be a daunting challenge.  The researcher was able to get full permission to collect the data required within the sample organisation.  It should be noted that the sample was taken in another part of the business and the researcher did not have a direct working relationship with the study participants.   The research proposal was presented to the relevant research steering committees of the organisation and was unanimously approved. This gave the researcher access to the 205 TSOs/TSCs.   The final sample size was 118 TSOs (leaders) with a total of 776 questionnaires being completed.

### 3.6.2   Sampling techniques

Simple random sampling is often impractical (Cooper and Schindler, 2001).   However Campbell and Stanley (1966) in their seminal work on research design indicates researchers must randomise whenever possible. The central region, which has 29 TSCs, did not participate in the annual TSC competition and was excluded from the population of 205 because the TSC performance data was not available. An attempt was made to collect the data from all of the remaining (176) TSCs.

### 3.6.3   Sample size

The issues of the impact of size (both small and large) and the necessity for a sufficient number of observations per variable are frequently encountered with canonical correlations. A sample size that is too small will not represent the correlations well, thus obscuring any meaningful relationship. A very large sample will have the tendency to indicate statistical significance in all instances, even where practical significance is not indicated.   This study follows the rule of thumb of at least 10 observations per variable to avoid 'overfitting' the data (Hair et al., 1998). A total of 11 variables (self-awareness; self-management; social-awareness; relationship-management; competitiveness; social responsibility; supportiveness; innovation; emphasis on rewards; performance orientation and stability)   are measured, therefore requiring a minimum of 110 service units (TSCs) to be taken if the rule of thumb is to be satisfied.   The total sample size for employee respondents was larger because each TSC had on average 10-50 employees.   Hence the sample size for employee respondents was 776.

### 3.7   Ethical considerations

Ethics in research is involved with what is right and what is not right to do when conducting research (Neuman, 2000: 90) and forms an integral part of any research study. The issue of ethics in research is particular important when human beings are the research subjects (Freed-Taylor, 1994), as is the case in this study.

Ethics in research spans the entire research process: from the nature of the problem being investigated, the reporting of the theoretical framework thereof, the context within which the research is conducted, the data collection instruments utilised, the data collection methods utilised, the research subjects, the procedures utilised to analyse the data and the way in which the data is reported (Cohen, Manion & Morrison, 2000: 50; Neuman, 2000: 90-91). In particular, the research should be conducted ethically, therefore the research question should be framed objectively within the theoretical framework in order to ensure confidence in the research process; the rights and privacy of research subjects should be respected and protected; the researcher(s) should be sensitive to cultural and social differences of the research subjects; and all research findings should be reported objectively with full disclosure of the research methodology and the limitations of the research process (Freed-Taylor, 1994; Neuman, 2000: 283-285).

Respondents in the present study were promised anonymity; facilitators fully explained the purpose of the research and additionally the purpose and procedures of the research were reviewed by the company's research committee before approval was given to conduct the study. None of the individual scores will be provided to the organisation participating in the study, just overall results pertaining to the company and region. Specific ethical considerations pertaining to each phase of this research study are addressed in subsequent sections.

Ethical considerations pertaining to the developmental phase of this study involves, in particular, not posing questions that may strip respondents of their dignity (Neuman, 2000: 283) or be perceived to be discriminatory. In this regard, the Haygroup and the Sarros paid particular attention in the development of the questionnaires. The facilitators assisting with data collection were requested by the researcher to pay specific attention to the formulation of the items in the background questionnaire and ensure that the sensitivities of the different target groups (FSAM, FSE, TSO, PTO, STO, TO WC, gender, race and religious groups) were not compromised (Freed-Taylor, 1994).

As far as the research methodology is concerned and particularly in terms of studies involving human beings, the issue of ethics pertains in particular to the research subjects, i.e. the people the study targeted. Although a researcher has the right to search for new knowledge, this cannot be done at the expense of those being studied (Neuman, 2000: 92).

In terms of the current research study, it implied that the rights of the research subjects should be respected at all times. In particular (Cohen et al. 2000: 245-246; Freed-Taylor, 1994; Neuman, 2000: 92):

- The aims of the research should be communicated to research subjects.
- Participation in the research study should be voluntary.
- Research subjects should provide written (informed) consent.
- Information provided by participants should be treated as confidential at all times (i.e. no information regarding any particular subject should be released).

Ethical integrity of this study was maintained by conducting the study in the Field Services Section of the group. The seven questionnaires filled in per TSC (FSAM, FSE, TSO, PTO, STO, TO, WC) were not inconvenienced. The FSAM and the FSE were sent the questionnaires via email and were asked to fill in the questionnaires at leisure. They were given two weeks to complete the questionnaires. For the TSC staff (TSO, PTO, STO, TO, WC), appointments were setup telephonically for early in the mornings or late in the afternoons, so as not to inconvenience the respondents from their daily activities. The research facilitators visited each TSC at the convenience of the TSC staff. Information collected from each of the TSC is filed as part of the research process and is auditable. Information regarding the TSO performance appraisals has also been obtained by the researcher from the group HR department and is treated as confidential.

## 3.8   Chapter summary and conclusions

In this chapter, the research process was described. Different research paradigms were discussed and a positivistic/quantitative approach to the study was motivated. The use of the critical social science approach as a vantage point to improve society was stated. The research process followed by the researcher was described. This started with the problem to be investigated (chapter 1), followed by the study of theoretical concepts and theories (chapter 2) and the formulation of the hypotheses to be tested during the study. The instruments and the data sources were identified for the dependent and independent variables.

The data collection instruments identified during the theoretical research (independent variables) was described as well as the data collection process and the sample design. The

instruments used to collect the performance variables (dependent variable), including the data collecting process, was also described.   The analysis of the results will be reported in chapter 4.

# CHAPTER 4: RESULTS

## 4.1    Introduction

In this chapter the empirical findings using statistical techniques to provide answers to empirical research questions formulated in chapter 3 are reported. The framework used in chapter 3 to identify the different relationships between respective variables was used to report the results. A detailed analysis using the statistical techniques discussed in chapter 3 was undertaken to test the hypothesis and to systematically provide answers to the following questions.

**Empirical question 1**: What are the basic statistical features of the data? Descriptive statistics allow an understanding of the basic make-up and features of the data.

**Empirical question 2**: What is the reliability and construct validity of the dimensions of the ECI and OCP instruments? Confirm that the ECI and the OCP instrument measures one underlining construct.

**Empirical question 3**: What are the descriptors of ECI, OCP and performance as variables for this sample? A comparison of the ECI data collected in this study with the results of the HayGroup norm.  A comparison of the OCP data collected in this study with the Australian norm. Identify the ECI characteristics that would lead to better leaders. Test Schein's assertion with regard to the strength of culture in the start-up/early growth phase of the organisational life cycle.  Review the performance data as measured by the organisation.

**Empirical question 4**: What is the impact of the moderator variables on the dependent and independent variables? Through t-Tests the relationship between the moderator variables and the study variables was tested in order to determine the influence of the moderator variables on the study variables namely the 18 ECI dimensions, the 7 OCP dimensions and performance.

**Empirical question 5**: What predictive value can be derived from the independent variables on the dependent variables? Canonical correlations and stepwise multiple regressions were

used to determine the predictive value of the independent variables on the dependent variable(s).

## 4.2    Sampling the independent variables

Of the total of 205 Technical Service Centre (TSCs) (see Appendix D, Table D1) that could have voluntarily participated in the study, 29 from the Gauteng region were automatically excluded as they did not participate in the TSC competition thus leaving the TSC population at 176. Of the 176 TSCs that could have participated, some of the TSCs opted not to respond to the request, some TSOs were newly appointed and did not meet the criteria to be included in the study.  In some TSCs the Field Services Engineer (FSE) and a field service area manager did not respond, and were automatically excluded from the study.  Finally, only 118 TSCs were entered into the analysis model which resulted in a response rate of 67%. (Note that during the analysis of the 118 TSCs, only completed responses are taken into account thus explaining the differences in the values of N)

```
                    Field Services
                    Centre Manager
                    (113)
                          |
          ┌───────────────┴───────────────┐
   Field Services                  Technical
   Engineer (107)                  Services Officer
                                   (118)
                                        |
       ┌──────────────┬─────────────────┼──────────────────┐
   Works          Principal        Senior            Technical
   Coordinator    Technical        Technical         Officer (105)
   (109)          Officer (113)    Officer (111)
```
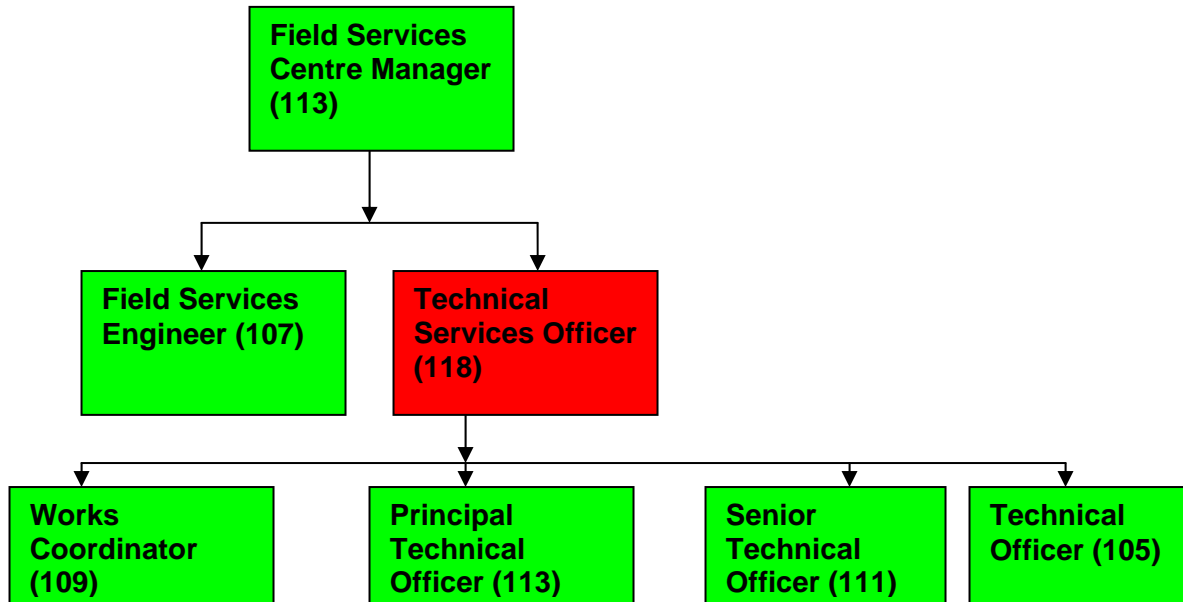
**Figure 4.1: Study sample**

Figure 4.1 serves to show the participants in the study and also the number in each category that participated in the study. In total, 776 questionnaires were collected from 118 TSCs taking part in this study.

## 4.3 Empirical Question 1: What are the basic statistical features of the data?

### 4.3.1 Descriptive statistics for the ECI instrument

Tables E1 to E4 (see appendix E), show the descriptive statistics for the ECI questionnaires filled in by each category of participants namely, the Technical Services Officer (TSO), Field Services Area Manager (FSAM), Field Services Engineer (FSE) and the TSC staff respectively.

Table 4.1 shows the average score of the FSAM, FSE and staff scores and is referred to as the '**total other**'. It is important to remember as noted earlier that ECI is designed as a 360° instrument. Thus ECI '**total other**' is a measure of the leader's (TSO) emotional competency as perceived by others namely, FSAM, FSE and staff. Table 4.1 shows the number of people who participated in the study, the means scores, the standard deviation, the variances, skewness and the kurtosis values for each of the eighteen emotional competencies measured.

**Table 4.1:** **Descriptive statistics for the ECI questionnaire completed by the 'total others'** (average of FSAM, FSE and staff)

| Dimension | N | Min | Max | M | SD | Skewness | Kurtosis |
|---|---|---|---|---|---|---|---|
| Emotional self awareness | 116 | 2.28 | 4.33 | 3.5055 | .36174 | -.546 | .971 |
| Accurate self assessment | 116 | 1.98 | 4.31 | 3.5202 | .41147 | -.866 | 1.496 |
| Self confidence | 116 | 2.58 | 4.79 | 3.7968 | .45319 | -.479 | .139 |
| Emotional self control | 116 | 2.23 | 4.29 | 3.4130 | .44717 | -.458 | -.188 |
| Transparency | 116 | 2.14 | 4.42 | 3.5566 | .43825 | -.705 | .678 |

| Dimension | N | Min | Max | M | SD | Skewness | Kurtosis |
|---|---|---|---|---|---|---|---|
| Adaptability | 116 | 2.38 | 4.35 | 3.5545 | .40521 | -.405 | .449 |
| Achievement orientation | 116 | 2.35 | 4.52 | 3.6301 | .47130 | -.509 | .094 |
| Initiative | 116 | 2.14 | 4.31 | 3.2271 | .39853 | -.347 | .497 |
| Optimism | 116 | 2.35 | 4.44 | 3.6298 | .46119 | -.485 | -.170 |
| Empathy | 116 | 2.22 | 4.48 | 3.6314 | .44902 | -.619 | .442 |
| Organisational awareness | 116 | 2.31 | 4.38 | 3.5596 | .40403 | -.482 | .240 |
| Service orientation | 116 | 2.50 | 4.81 | 3.9459 | .48806 | -.410 | -.079 |
| Developing other | 116 | 1.98 | 4.73 | 3.6775 | .51144 | -.512 | .495 |
| Inspirational leadership | 116 | 1.69 | 4.58 | 3.5629 | .50803 | -.542 | .755 |
| Change catalyst | 116 | 2.09 | 4.27 | 3.3186 | .43766 | -.480 | .093 |
| Influence | 116 | 2.14 | 4.44 | 3.5289 | .42229 | -.655 | 1.097 |
| Conflict management | 116 | 2.03 | 3.98 | 3.2358 | .35637 | -.394 | .676 |
| Team work and collaboration | 116 | 1.90 | 4.75 | 3.6658 | .44512 | -.743 | 1.409 |

### 4.3.2   Descriptive statistics for the OCP instrument

Tables E6 to E9 (see Appendix E), shows the descriptive statistics for the OCP questionnaires filled in by the Technical Services Officer (TSO),  Field Services Area Manager (FSAM), Field Services Engineer (FSE) and the TSC staff respectively.

Table 4.2 shows the average score of the FSAM, FSE, TSO and staff scores and is referred to as the '**total score**'. The table shows the number of people who participated in the study, the means scores, the standard deviation, variances, skewness and kurtosis for each of the seven dimensions of organisational culture measured.

**Table 4.2:** **Descriptive statistics for the OCP questionnaire completed by the 'total score'** (FSAM, FSE, TSO and staff)

| Dimension | N | Min | Max | M | SD | Skewness | Kurtosis |
|---|---|---|---|---|---|---|---|
| Performance orientation | 116 | 2.38 | 4.80 | 3.5796 | .49757 | -.108 | -.383 |
| Social responsibility | 116 | 2.27 | 4.44 | 3.4442 | .47278 | -.150 | -.476 |
| Supportiveness | 116 | 2.31 | 4.39 | 3.4755 | .43792 | -.331 | -.308 |
| Emphasis on rewards | 116 | 2.28 | 4.33 | 3.3219 | .43629 | -.107 | -.339 |
| Stability | 116 | 2.20 | 4.19 | 3.3748 | .43540 | -.432 | .016 |
| Competitiveness | 116 | 2.25 | 4.59 | 3.5015 | .49620 | .051 | -.498 |
| Innovation | 116 | 1.85 | 4.02 | 3.1828 | .42537 | -.312 | -.185 |

### 4.3.3   Descriptive statistics for performance

Table 4.3a shows the TSO performance appraisal scores that were collected independently and used in the study. The data were sourced independently from the human resources department of the organisation in which the study was undertaken. The TSO performance appraisal scores reflected performance for the period April 2005 to March 2006. Performance appraisal scores were obtained for 117 TSOs. The mean performance appraisal score for the 117 TSC's is M=3.6828 with a minimum score of 2.75 and a maximum score of 4.47.

**Table 4.3a: Descriptive statistics for TSO performance appraisal**

| Dimension | N | Min | Max | M | SD | Skewness | Kurtosis |
|---|---|---|---|---|---|---|---|
| TSO performance appraisal score for 2005 | 117 | 2.75 | 4.47 | 3.6828 | .34369 | -.125 | .078 |

Table 4.3b shows the TSC performance scores that were collected as part of the TSC competition and used in the study. The data was sourced independently from the relevant department responsible for the TSC competition. The TSC performance scores reflected performance for the period April 2005 to March 2006. TSC performance scores were

obtained for 118 TSCs. The mean TSC performance score for the 118 TSCs is M=252.72 with a minimum score of 117.65 and a maximum score of 354.79.

**Table 4.3b: Descriptive statistics for TSC performance**

| Dimension | N | Min | Max | M | SD | Skewness | Kurtosis |
|---|---|---|---|---|---|---|---|
| TSC Performance score 2005 | 18 | 17.65 | 354.79 | 252.7201 | 49.42053 | -.175 | -.225 |

### 4.3.4 Initial data screening

Multivariate statistical analysis requires that the assumptions underlying the statistical techniques be tested. In particular, the assessment of normality of the continuous (interval) variables needs to hold. Review of the skewness and kurtosis data (Appendix E, Table E1 to E5) shows that there are minor deviations from normality. However, for the purposes of this study with samples size considered as sufficiently large, normality is assumed. Discussions in each multivariate section address the methods used to assess the assumptions underlying the variate for each multivariate technique.

*Thus, the answer to the first empirical question is that the data collected for the variables ECI, OCP and performance are suited for statistical analysis.*

### 4.4 Empirical question 2: What are the reliability and construct validity of the dimensions of the ECI and OCP instruments

According to Jaeger (1995: 373) reliability is considered a measurement concept that represents the consistency with which an instrument measures a given performance or behaviour. A measurement instrument that is reliable will provide consistent results when a given individual is measured repeatedly under near-identical conditions.

Cronbach's alpha is the most commonly used indicator of internal consistency. This procedure estimates reliability estimates from the consistency of items responses from a

single assessment. The generally agreed upon lower limit for Cronbach's alpha is 0.70 (Hair et al., 1998).

### 4.4.1   Reliability of the ECI and OCP

### 4.4.1.1   Reliability of the ECI instrument

As explained in section 3.4.2.1.1.1 in chapter 3, the ECI instrument consists of 72 items, measuring 18 competency dimensions and each competency is measured by 4 items. Table 4.4 presents the Cronbach's alpha internal consistency coefficient for the ECI 2.0 (HayGroup, 2005a) competencies taken at the dimension level. The tables (Tables 4.4 and 4.5) also show the result for this study taken at the dimension level. The Cronbach's alpha for this study exceeded 0.9 thus satisfying the internal consistency requirements.

**Table 4.4:**   **Cronbach's alpha coefficient for total others ECI 2.0 ratings and scores taken for this study** (Scores based on average item scores)

| ECI Clusters | ECI dimensions | Total other rating (N=20557)* | Cronbach's alpha for this study (N=118) |
|---|---|---|---|
| Self awareness | (Tot) Emotional Self awareness | 0.87 | .976 |
| | (Tot) Accurate self assessment | 0.77 | .976 |
| | (Tot) Self confidence | .0.79 | .975 |
| Self management | (Tot) Emotional self control | .0.83 | .977 |
| | (Tot) Transparency | 0.68 | .976 |
| | (Tot) Adaptability | 0.73 | .975 |
| | (Tot) Achievement orientation | 0.77 | .975 |
| | (Tot) Initiative | 0.70 | .976 |
| | (Tot) Optimism | 0.75 | .976 |
| Social awareness | (Tot) Empathy | 0.80 | .976 |
| | (Tot) An organisational awareness | .0.80 | .976 |
| | (Tot) Service orientation | 0.86 | .976 |
| Relationship management | (Tot) Developing others | 0.85 | .975 |
| | (Tot) Inspirational leadership | 0.86 | .975 |

| ECI Clusters | ECI dimensions | Total other rating (N=20557)* | Cronbach's alpha for this study (N=118) |
|---|---|---|---|
| | (Tot) Change catalyst | 0.82 | .976 |
| | (Tot) Influence | 0.76 | .975 |
| | (Tot) Conflict management | 0.73 | .977 |
| | (Tot) Teamwork and collaboration | 0.75 | .975 |

* (HayGroup, 2005a)


## 4.4.1.2 Reliability of the OCP instrument

As explained in section 3.4.2.1.2.2 in chapter 3 the OCP instrument consists of 28 items, measuring 7 culture dimensions and each culture dimension is measured by 4 items. Table 4.5 presents the Cronbach's alpha internal consistency coefficient for the OCP as measured by Sarros, et al., (2002) in an Australian study. These tables also show the result for this study. The Cronbach's alpha for this study exceeded 0.9 thus satisfying the internal consistency requirements.


**Table 4.5:** **Cronbach's alpha coefficient for the OCP ratings and scores taken for this study** (Scores based on average item scores)

| Culture Dimensions | Australian Study** | Cronbach's Alpha for this study |
|---|---|---|
| (Tot) Performance orientation | 0.74 | .976 |
| (Tot) Social responsibility | 0.74 | .976 |
| (Tot) Supportiveness | 0.87 | .976 |
| (Tot) Emphasis on rewards | 0.80 | .976 |
| (Tot) Stability | 0.66 | .976 |
| (Tot) Competitiveness | 0.75 | .976 |
| (Tot) Innovation | 0.80 | .976 |

** (Sarros, Gray & Densten, 2002)

Given the fact that reliabilities are satisfactory a single score was calculated for each respective dimension of the ECI and OCP by calculating the mean of all items. This result, in 18 ECI dimensions and 7 OCP dimensions, each measured on a continuous or interval scale. Mean, standard deviation, skewness and kurtosis are shown tables 4.1 and 4.2 above.

### 4.4.2 Construct validation using exploratory factor analysis

According to the ECI technical manual (HayGroup, 2005b), the 18 dimensions of the ECI instrument measures one underlying construct, emotional competency. Similarly, according Sarros et.al. (2002), the 7 dimensions of organisational culture measures one underlying construct namely organisational culture. In order to verify this, an exploratory factor analysis was performed on the ECI and OCP instruments using the '**total other**' score for the ECI and the '**total scores**' for the OCP which is the mean score (FSAM, FSE and staff) for the ECI instrument and (FSAM, FSE, TSO and staff) for the OCP instrument.

Since both the ECI and the OCP have been used in this context in South African before, an exploratory factor analysis was performed to validate scales. The following criteria were applied:

- **Bartlett test of sphericity**, a statistical test for the presence of correlations among variables. It provides the statistical probability that the correlation matrix has significant correlations among at least some of the variables (Hair et al., 1998; Eiselen, 2006).

- **Measures of sampling adequacy (MSA)**. Measures calculate both entire correlation matrix and each individual variable evaluating the appropriateness of applying factor analysis. Values above 0.5 for the entire matrix or an individual variable indicate appropriateness.  This index ranges from 0 to 1, reaching 1 when each variable is perfectly predicted without error by the variables. Measures of 0.8 are considered to be meritorious (Hair et al., 1998; Eiselen, 2006).

- **Communalities** are estimates of the shared, or common, variance among the variables. Factors resulting from common factor analysis are based only on common

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variance. If communality values exceed 1, problems with the solution are indicated. Very low communalities on the other hand, indicate that variables with them are unrelated to other variables in the set. Values above 0.6 are considered acceptable (Hair et al., 1998; Tabachnick & Fidell, 2007; Eiselen, 2006).

- **Percentage of variance criterion**

  The percentage of variance criterion is an approach based on achieving a specified cumulative percentage of total variance extracted by successive factors. The purpose is to ensure practical significance for the derived factors by ensuring that they explain at least a specified amount of variance. No absolute threshold has been adopted for all applications. However, in social science, where information is often less precise, it is not uncommon to consider a solution that accounts for 60% of the total variance as satisfactory (Hair et al., 1998; Eiselen, 2006).

Tables 4.6 and 4.7 show the measure of sampling adequacy (MSA) and the Bartlett test for the ECI and the OCP. For the MSA both instruments have values exceeding 0.9 and are significant on the Bartlett Sphericity Test. For the communalities (Tables 4.8 and 4.9) the both instruments have values exceeding 0.6. Tables 4.10 and 4.11 show the total variance extracted by successive factors for the ECI and the OCP respectively. For the ECI instrument two factors have been extracted, however since the first factor accounts for 70% of the variance and the second factor accounts for only 7%, the second factor is ignored. The OCP has only one factor and it accounts for 85% of the variance extracted.

**Table 4.6:** **Measure of sampling adequacy and Bartlett's Test for emotional competency inventory**

| Kaiser-Meyer-Olkin Measure of Sampling Adequacy | | .961 |
|---|---|---|
| Bartlett's Test of Sphericity | Approx. Chi-Square | 2312.305 |
| | df | 153 |
| | Sig. | .000 |

**Table 4.7:    Measure of sampling adequacy and Bartlett's Test for the organisational culture profile**

| Kaiser-Meyer-Olkin Measure of Sampling Adequacy | | .928 |
|---|---|---|
| Bartlett's Test of Sphericity | Approx. Chi-Square | 1142.664 |
| | df | 21 |
| | Sig. | .000 |

**Table 4.8: Communalities for the ECI**

| | Extraction |
|---|---|
| (Tot) Emotional self awareness | .637 |
| (Tot) Accurate self assessment | .775 |
| (Tot) Self confidence | .823 |
| (Tot) Emotional self control | .740 |
| (Tot) Transparency | .716 |
| (Tot) Adaptability | .823 |
| (Tot) Achievement orientation | .819 |
| (Tot) Initiative | .779 |
| (Tot) Optimism | .787 |
| (Tot) Empathy | .854 |
| (Tot) An organisational awareness | .632 |
| (Tot) Service orientation | .754 |
| (Tot) Developing others | .833 |
| (Tot) Inspirational leadership | .866 |
| (Tot) Change catalyst | .722 |
| (Tot) Influence | .819 |
| (Tot) Conflict management | .665 |
| (Tot) Teamwork and collaboration | .825 |

Extraction Method: Principal Component Analysis.

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**Table 4.9: Communalities for the OCP**

|  | Extraction |
|---|---|
| (Tot) Performance orientation | .904 |
| (Tot) Social responsibility | .936 |
| (Tot) Supportiveness | .879 |
| (Tot) Emphasis on rewards | .796 |
| (Tot) Stability | .778 |
| (Tot) Competitiveness | .863 |
| (Tot) Innovation | .788 |

Extraction Method: Principal Component Analysis.

**Table 4.10: Total variance explained for the ECI**

| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 12.534 | 69.631 | 69.631 | 12.534 | 69.631 | 69.631 |
| 2 | 1.334 | 7.412 | 77.043 | 1.334 | 7.412 | 77.043 |

Extraction Method: Principal Component Analysis.

**Table 4.11: Total variance explained for the OCP**

| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 5.944 | 84.913 | 84.913 | 5.944 | 84.913 | 84.913 |

Extraction Method: Principal Component Analysis.

From this point onwards, the 18 subscales of ECI and 7 subscales of the OCP are examined. Based on the above analysis, it can be concluded that there is 1 underlying construct for both the ECI and the OCP instruments.

*The answer to empirical question 2: Based on the above exploratory factor analysis it can be concluded that there is one underlying construct for both ECI and the OCP instruments and the instruments are determined to be internally consistent and therefore reliable.*

## 4.5 Empirical question 3: What are the descriptors of ECI, OCP and organisational performance as variables for this sample?

### 4.5.1 Assessment of the ECI and comparison of the ECI results obtained in this study, to the Haygroup norm

Tables 4.12 to 4.15 show the ECI summary of mean scores for all the questionnaires completed. The tables also show the 'total other' average mean score and the Haygroup Norm for each of the 18 competencies (see Norm column in Table 4.12 to 4.15). The '**total other**' column is the average of the FSAM, FSE and staff scores. It can be seen from the Table 4.12 that the TSO's has rated his/her emotional competencies higher when compared to how the '**total other**' have rated him. The tendency of leaders to overrate their emotional intelligence is collaborated by (Sala, 2001) and it is for this reason that the 360° rating system is used.

Applying the HayGroup's clustering of competencies principles discussed in section 3.4.2.1.1.2 to the 'total other' column, they outline a generic algorithm (NORM) that has been shown to be effective for managers in many situations and are appropriate for assessment and development purposes. Thus comparing the 'total other' column to the Norm column in Tables 4.12 to 4.15, the clustering algorithm will be applied to the discussion below.

#### 4.5.1.1 The self-awareness cluster

**Self-awareness** concerns knowing one's internal states, preferences, resources, and intuitions. The self-awareness cluster (Table 4.12) contains three competencies (HayGroup, 2005a):

- **Emotional awareness**: Recognising one's emotions and their effects

- **Accurate self-assessment**: Knowing one's strengths and limits
- **Self-confidence**: A strong sense of one's self worth and capabilities

The three competencies in the **self-awareness** cluster are mandatory and must all be present (HayGroup, 2005a: 4). Self-confidence (M=3.7968) which is a sense of one's self worth and capabilities, rates lower than the Norm (M=4). This is significant in that the people rating the TSOs perceive them to lack self confidence, whereas the TSOs rating themselves see themselves as oozing with self confidence. The TSOs are perceived to possess the other two competencies namely: emotional self awareness and accurate self assessment.

**Table 4.12:** **Summary of the mean scores for the self-awareness cluster of the ECI questionnaire**

| Clusters | ECI Dimensions | TSO | FSAM | FSE | STAFF | TOTAL OTHER | Norm |
|----------|----------------|-----|------|-----|-------|-------------|------|
| Self awareness | Emotional Self awareness | 4.0784 | 3.5221 | 3.4743 | 3.6014 | 3.5055 | 3 |
| | Accurate self assessment | 4.1356 | 3.5199 | 3.4393 | 3.6787 | 3.5202 | 3 |
| | Self confidence | 4.3263 | 3.8872 | 3.6565 | 3.9327 | 3.7968 | 4 |

**4.5.1.2  The self-management cluster**

**Self-management** refers to managing one's internal states, preferences, resources, and intuition. The **self-management** cluster (Table 4.13) contains six competencies (HayGroup, 2005a):

- **Emotional self-control**: Keeping disruptive emotions and impulses in check
- **Transparency**: Maintaining integrity and acting congruently with one's values
- **Adaptability**: Flexibility in handling change

- **Achievement**: Striving to improve or meeting a standard of excellence
- **Initiative**: Readiness to act on opportunities
- **Optimism**: Persistence in pursuing goals despite obstacles and setbacks

In the **self-management** cluster, emotional self control is mandatory. The total other mean score (M=3.413) exceeds the Norm (M=3) and therefore satisfies the requirements for emotional self control. This implies that the TSO is perceived by the others to possess the competency of emotional self control.

Transparency and adaptability are somewhat antagonistic. Transparency is about stability and reliability and adaptability is about flexibility and openness to change (Jacobs, 2001). A person must show one of these competencies. Table 4.13 shows that '**total other**' perceives the TSOs as having the transparency competency and not the adaptability competency. Finally, a person must show either achievement or initiative or optimism.

**Table 4.13:** Summary of the mean scores for the self-management cluster of the ECI questionnaire

| Clusters | ECI Dimensions | TSO | FSAM | FSE | STAFF | TOTAL OTHER | Norm |
|---|---|---|---|---|---|---|---|
| Self management | Emotional self control | 3.7860 | 3.4358 | 3.3388 | 3.5534 | 3.4130 | 3 |
| | Transparency | 4.0890 | 3.6128 | 3.4790 | 3.6542 | 3.5566 | 3 |
| | Adaptability | 4.0720 | 3.5310 | 3.3645 | 3.8273 | 3.5545 | 4 |
| | Achievement orientation | 4.2669 | 3.6438 | 3.4533 | 3.8597 | 3.6301 | 3 |
| | Initiative | 3.5191 | 3.3356 | 3.1051 | 3.3096 | 3.2271 | 4 |
| | Optimism | 4.2458 | 3.5885 | 3.4766 | 3.8873 | 3.6298 | 3 |

### 4.5.1.3  Social-awareness cluster

**Social-awareness** refers to how people handle relationships and awareness of others' feelings, needs and concerns. The social-awareness cluster (Table 4.14) contains three competencies (HayGroup, 2005a):

- **Empathy**: Sensing others' feelings and perspectives, and taking interest in their concerns
- **Organisational**-**awareness**: Reading a group's emotional currents and power relationships
- **Service orientation**: Anticipating, recognising, and meeting customers' needs

In the social awareness cluster, empathy is mandatory. The 'total other' mean score for empathy (M=3.6314) is less than the norm (M=4). The TSOs are perceived to lack empathy. Organisational awareness and service orientation are alternate manifestations of each other, thus a person must have one or the other. Organisational awareness tends to be used in higher level management or executive positions where understanding and navigating the organisation is critical for success. Service orientation tends to be important in positions relating directly to customers external or internal (Jacobs, 2001). The study sample is taken from a service sector and therefore making the service orientation competency more important. The '**total other**' mean score for service orientation (M=3.940) is less than the norm (M=4). There is a small difference between the norm and the 'total other' score and the difference maybe insignificant, however the researcher has chosen to highlight the difference. The TSOs are perceived as not anticipating, nor recognising or meeting customers' needs.

**Table 4.14:   Summary of the mean scores for the social-awareness cluster of the ECI questionnaire**

| Clusters | ECI Dimensions | TSO | FSAM | FSE | STAFF | TOTAL OTHER | Norm |
|---|---|---|---|---|---|---|---|
| Social awareness | Empathy | 4.2288 | 3.6549 | 3.5070 | 3.8023 | <u>3.6314</u> | 4 |
| | An organisational awareness | 3.8602 | 3.5973 | 3.2734 | 3.8577 | 3.5596 | 3 |
| | Service orientation | 4.4068 | 4.0420 | 3.8178 | 4.0549 | <u>3.9459</u> | 4 |

### 4.5.1.4   Relationship management cluster

**Relationship management** concerns the skill or adeptness at inducing desirable responses in others. The relationship management cluster (Table 4.15) contains six competencies (HayGroup, 2005a):

- **Developing others**: Sensing others' development needs and bolstering their abilities
- **Inspirational leadership**: Inspiring and guiding individuals and groups
- **Change catalyst**: Initiating or managing change
- **Influence**: Wielding effective tactics for persuasion
- **Conflict management**: Negotiating and resolving disagreements
- **Teamwork and collaboration**: Working with others towards shared goals. Creating group synergy in pursuing collective goals

In the relationship management cluster, **influence** is mandatory. In addition to this competency, an individual should have one competency from the group of developing others, inspirational leadership, and change catalyst. They must also have either conflict management or teamwork and collaboration. TSOs are perceived to meet all the requirements of the relationship management cluster.

**Table 4.15: Summary of the mean scores for the relationship management cluster of the ECI questionnaire**

| Clusters | ECI Dimensions | TSO | FSAM | FSE | STAFF | TOTAL OTHER | Norm |
|---|---|---|---|---|---|---|---|
| Relationship management | Developing others | 4.4153 | 3.6925 | 3.4813 | 3.9151 | 3.6775 | 3 |
| | Inspirational leadership | 4.1992 | 3.5929 | 3.3832 | 3.7687 | 3.5629 | 3 |
| | Change catalyst | 3.9068 | 3.2522 | 3.2453 | 3.5165 | 3.3186 | 3 |
| | Influence | 3.9195 | 3.5310 | 3.3458 | 3.7687 | 3.5289 | 3 |
| | Conflict management | 3.5720 | 3.2765 | 3.2290 | 3.2866 | 3.2358 | 4 |
| | Teamwork and collaboration | 4.4047 | 3.5819 | 3.5888 | 3.9103 | 3.6658 | 3 |

### 4.5.2 Assessment of the OCP and comparison of the OCP sample results to the Australian Norm

Table 4.16 shows the OCP summary of mean scores for all the questionnaires filled in. The table also shows the average mean '**total score**' and Australian Norm for each of the seven culture dimensions measured. The '**total score**' column is the average of the TSO, FSAM, FSE and staff scores. Rearranging the '**total score**' column from highest to lowest:

- Performance orientation (M=3.585)
- Competitiveness (M=3.5074)
- Supportiveness (M=3.4825)
- Social responsibility (M=3.4507)
- Stability (M=3.3801)
- Emphasis on rewards (M=3.3288)
- Innovation (M=3.1887)

The OCP as described in the methodology chapter measures the strength of an organisational culture. The means score suggest the strongest dimensions of organisational culture perceived by the respondents are performance orientation and competitiveness. These two dimensions had the highest means scores. Innovation is touted as a key value within this organisation however, respondents did not perceive this as the case. The strength of the organisational culture was measured using the following guideline:

0<1 is indicative of a very weak culture
1< **Cmean**<2 is indicative of weak culture
2<**Cmean**<3 is indicative of substantial culture
3<**Cmean**<4 is indicative of strong culture
4<**Cmean**<5 is indicative of very strong culture

**Table 4.16:    Summary of OCP questionnaire mean scores of all questionnaires filled in**

|  | TSO | FSAM | FSE | STAFF | TOTAL SCORE | Norm* |
|---|---|---|---|---|---|---|
| (Tot) Performance orientation | 3.8623 | 3.5177 | 3.3715 | 3.7123 | 3.5850 | 4.02 |
| (Tot) Social responsibility | 3.7013 | 3.3982 | 3.2640 | 3.5725 | 3.4507 | 3.93 |
| (Tot) Supportiveness | 3.8284 | 3.4137 | 3.2897 | 3.5344 | 3.4825 | 3.7 |
| (Tot) Emphasis on rewards | 3.5869 | 3.3341 | 3.2780 | 3.2633 | 3.3288 | 3.61 |
| (Tot) Stability | 3.6780 | 3.3938 | 3.2126 | 3.3686 | 3.3801 | 3.46 |
| (Tot) Competitiveness | 3.8284 | 3.4248 | 3.3318 | 3.5684 | 3.5074 | 3.37 |
| (Tot) Innovation | 3.3962 | 3.1814 | 3.0304 | 3.2424 | 3.1887 | 3.37 |

*Norm based on an Australian Study

**4.5.3   Assessment of performance**

**4.5.3.1   Assessment of the TSO performance appraisal scores**

The use of the TSO performance appraisal as the organisational performance variables was discussed in detail in section 3.4.2.1.3.1. Table 4.3a shows the descriptive statistics for the TSO performance appraisal scores. The performance appraisal ratings of the leaders ranged from a low of 2.75 to a high of 4.47 with a mean of 3.68. There was good variation among the leader's (TSO's) performance appraisal scores that allows testing the relationship among ECI, OCP and organisational performance. Applying the performance evaluation criteria as set out in section 3.4.2.1.3.1, the mean score of 3.68 was indicative of good performance.

**4.5.3.2   Assessment of the TSC performance scores**

The use of the TSC performance scores as the performance variables was discussed in detail in section 3.4.2.1.3.2.  Table 4.3b shows the descriptive statistics for the TSC performance scores. The performance ratings of the TSCs ranged from a low of 117.65 to a high of 354.79 with a mean of 252.7. There was good variation among the TSC performance scores that allows testing the relationship among ECI, OCP and organisational performance. Applying the performance evaluation criteria as set out in section 3.4.2.1.3.2, the mean score of 252.7 was indicative of satisfactory performance.  The use of the TSC competition scores as an organisational performance measure proved to be difficult as the data quality was seriously in question.   Therefore, further analysis was not possible.    During the data collection phase it was revealed that the central region did not participate because of the data quality problems.

**4.6 Empirical question 4: What are the effects of the moderator variables on the dependent and independent variables? (ECI, OCP and organisational performance)**

**4.6.1 Moderator variables**

As part of the study, data for 8 moderator variables were collected. These are discussed in section 3.4.2.2. The moderator variables descriptors are discussed in detail in Appendix F. For the data collected for the 8 moderator variables, 2 variables namely:

- Gender
- Number of years the TSC existed for

have uneven distributions and had to be excluded from any further analysis. The following six remaining variables namely:

- TSO age
- TSO race
- Qualifications of the TSO
- TSO tenure
- Size (number of employees)
- Number of years of employment within the organisation

have approximately equal distributions and are assumed as equal, were recategorised (Appendix F) and applied to the study variables (ECI, OCP and organisational performance) using a t-Test. t-Test effects are discussed in the next section.

**4.6.2 Moderator variables on ECI**



**Figure 4.2: Moderator variables applied to ECI using t-Test**

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The detailed analysis of the 6 moderator variables on ECI dimensions using the t-Test (Figure 4.2) is shown in Appendix G, section 1.1. The main results will be discussed further in this section.

There was a statistically significant mean difference between 3 of the six moderator variables (Figure 4.3 below) namely:

- Race of the TSO
- Years in the TSO
- Age of the TSO



**Race of TSO**
- Emotional self awareness
- Self confidence
- Accurate self assessment
- Transparency
- Adaptability
- Achievement orientation
- Initiative
- Organisational awareness
- Service orientation
- Developing others
- Inspirational leadership
- Influence
- Conflict management
- Teamwork and collaboration

**Years in TSO Position**
- Initiative

ECI

**Age of the TSO**
- Optimism
- Change catalyst

Ho: M1=M2
- Statistically significant mean difference

**Figure 4.3: Result of moderator variables applied to the ECI dimensions using t-Test**

When racial differences (white and black) were tested using a t-Test, it was found that of the 18 ECI dimensions, there was a statistically significant mean difference between the scores of black and white managers with the white managers scoring higher on 14 of the ECI dimensions listed in Figure 4.3 above. In other words, the white managers are perceived as scoring higher on 14 of the ECI dimensions than their black counterparts.

When age of the TSO was applied using the t-Test, it was found that of the 18 ECI dimensions, there was a statistical mean difference between the age of the TSO < 41 years and age of the TSO ≥ 41 years, with age group <41 years scoring higher on 2 of the 18 ECI dimensions namely **optimism** and **change catalyst**. Similarly, when applying the number of years that a TSO has served in the TSO position (< 6 years or ≥6 years), there was a statistical mean difference between the two groups with the group with ≥ 6 years work experience in the position scoring high on the initiative dimension of the ECI.

### 4.6.3 Moderator variables on OCP
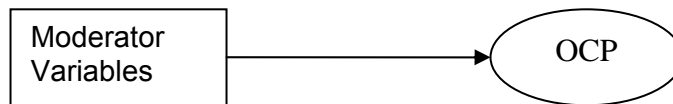


**Figure 4.4: Moderator variable applied to OCP using t-Test**

The detailed analysis of the 6 moderator variables on OCP dimensions using the t-Test (Figure 4.4 above) is shown in Appendix G, section 1.2. The main results are discussed further in this section.

There was a statistically significant mean difference between three of the six moderator variables (Figure 4.5 below) namely:

- Race of the TSO
- Years in the TSO position
- No of employees reporting to the TSO
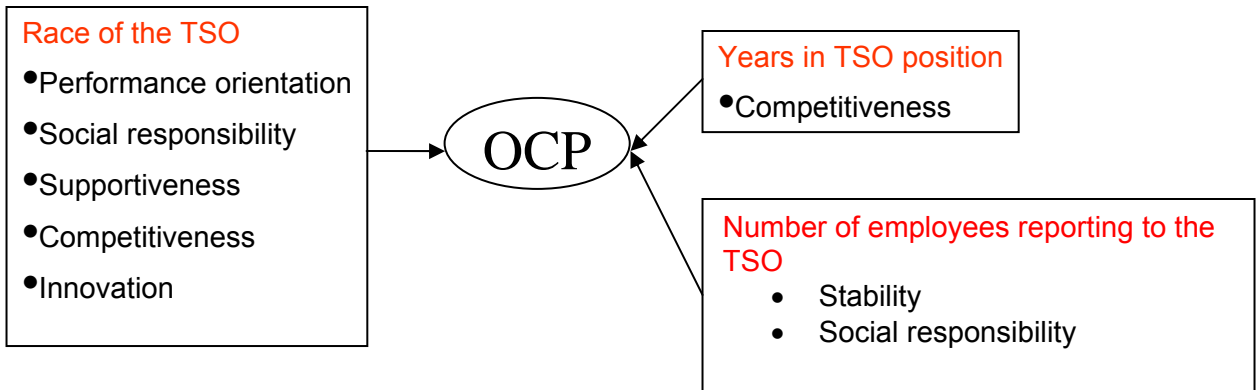
**Figure 4.5: Result of applying the moderator variables on the OCP using t-Test**

When racial differences (white and black) were tested using a t-Test, it was found that of the 7 OCP dimensions, there was a statistically significant mean difference between the TSC led by black and white managers with the white managers scoring higher on 5 of the OCP dimensions listed in Figure 4.5.

Applying the number of years that a leader (TSO) has served in the leadership (TSO position, < 6 years or ≥6 years), there was a statistically significant mean difference between the two groups with the group with ≥ 6 years work experience in the leadership position scoring high on the competitiveness dimension of the OCP.

Similarly, applying the number of employees reporting to the TSO (<25 people, ≥25 people), there was a statistically significant mean difference between the two groups with the group < 25 people scoring high on the dimensions of stability and social responsibility of the OCP.

### 4.6.4   Moderator variables on organisational performance
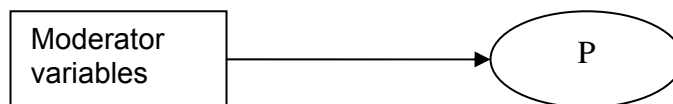


**Figure 4.6:    Moderator variables applied to the TSO performance appraisal scores using  t-Test**

The detailed analysis of the six moderator variables on performance using the t-Test (Figure 4.6) is shown in the Appendix G, section 1.3. The main results will be discussed further in this section.

There was a statistically significant mean difference between three of the six moderator variables (Figure 4.7) namely

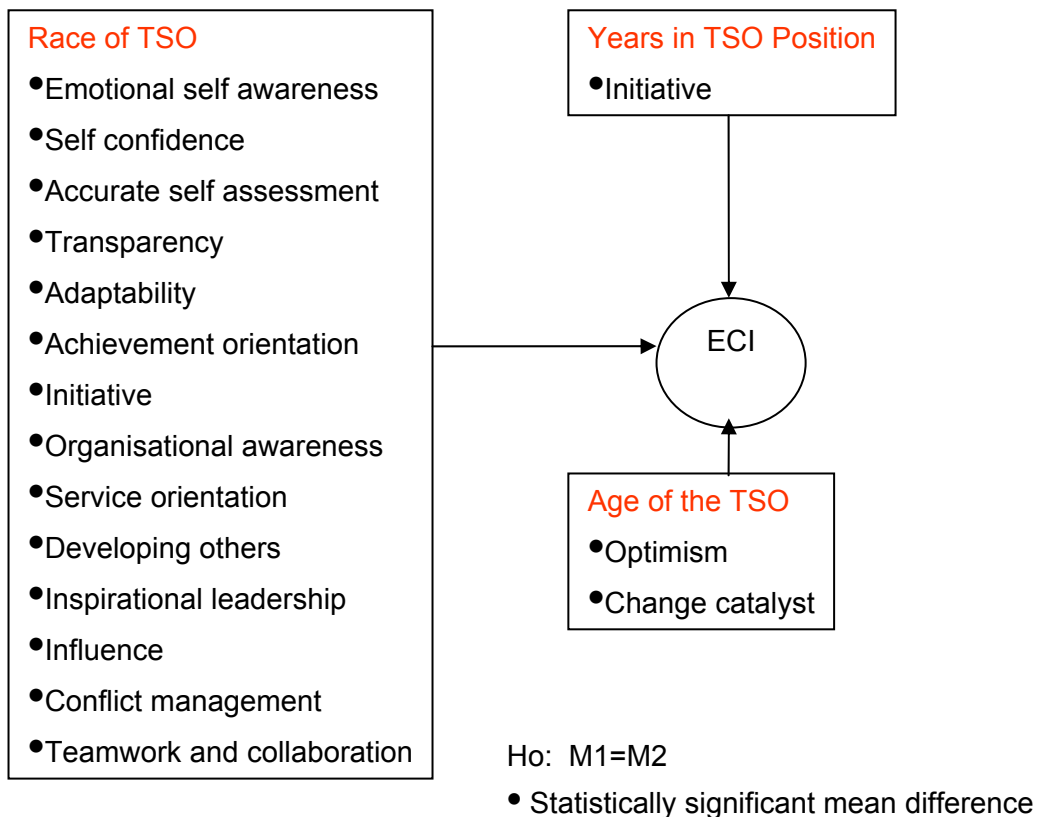- Race of the TSO
- Years in the TSO position
- Age of the TSO
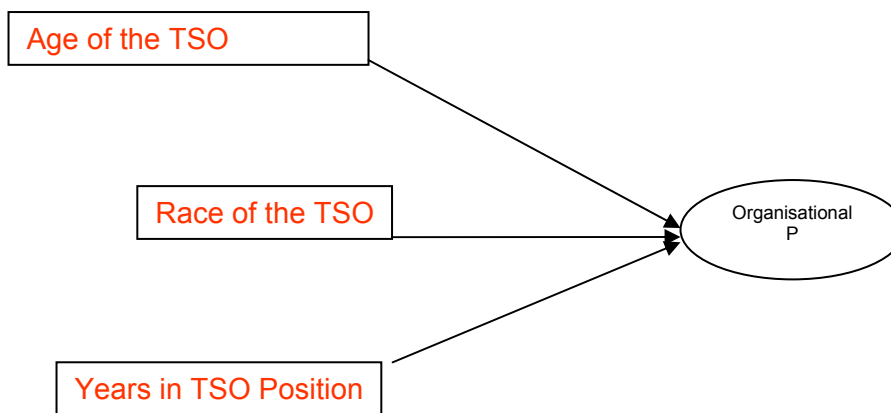


**Figure 4.7:    Result of applying the moderator variables to the TSO performance appraisal scores using t-Test**

When racial differences (white and black) were tested using a t-Test on organisational performance (TSO PA score), there was a statistically significant mean difference in performance between the black and white managers. The white managers had higher performance scores than their black counterparts listed in Figure 4.5 above.

When age of the TSO was tested, there was a statistically significant mean difference between the age of the TSO < 41 years and age of the TSO≥ 41 years, with age group >41 years scoring higher on organisational performance.

Similarly, when applying the number of years that a TSO has served in the TSO position (< 6 years or ≥ 6 years), there was a statistically significant mean difference between the two groups with the group with ≥ 6 years work experience in position scoring higher on the organisational performance.

## 4.6.5 Conclusion regarding moderator variables when applied to ECI, OCP and organisational performance

The effects of the moderator variables on ECI, OCP and organisational performance have been looked at individually. It has been shown that there is a statistically significant mean difference between the moderator variables and the dimensions of ECI, OCP and organisational performance. Race, number of years of experience, the age of the leader and number of employees reporting to the leader seem to be the dominant factors. The above analysis answers the empirical question 4. In the South African context, racial differences in the performance ratings on ECI and OCP become particularly interesting. Although the study was not designed to focus on racial effects on the three main variables, the implication of these findings for further research are elaborated in chapter 5.

## 4.7 Empirical question 5: What predictive value can be derived from the independent variables on the dependent variables?
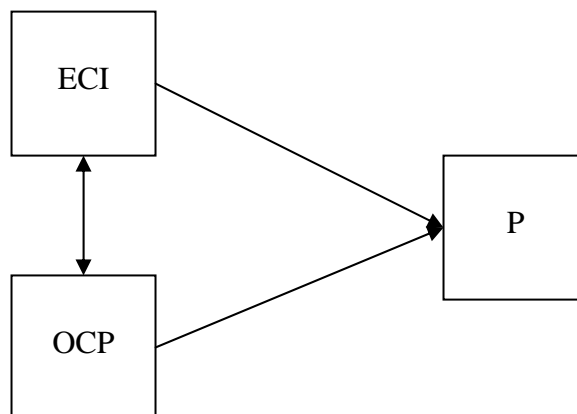


**Figure 4.8: Empirical relationship among ECI, OCP and organisational performance**

In this section, the relationship (Figure 4.8) between ECI and organisational performance, between OCP and organisational performance, between ECI and OCP on organisational performance is examined. In the next section, the relationship between ECI and OCP using canonical correlations is illustrated and discussed.

## 4.7.1   Canonical correlations
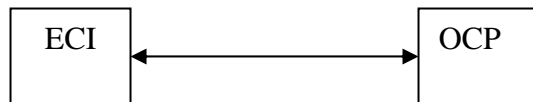


**Figure 4.9: Relationship between ECI and OCP**

### 4.7.1.1   Objectives of canonical correlation analysis

The objective of this part of the study is to examine the dynamic effects of leader ECI on organisational culture. The hypothesised relationships are stated in $H0_c$, $H1_c$ and depicted by Figure 4.9.

**$H0_c$:**   There is no correlation between any linear combination of the leader EQ   dimensions and any linear combination of the organisational culture     dimensions.

**$H1_c$:**   There is a relationship between at least one linear combination of the leader EQ dimensions and at least one linear combination of organisational culture dimensions.

The 18 ECI variables were used as independent variables and the 7 OCP variables were designated as the dependent variables. The statistical problem involved identifying any latent relationships (relationship between composites of variables rather than the individual variables themselves) between the '**total other**' perception of the leader's emotional competency and their perception of the organisational culture '**total score**'. Since one of the major objectives of the study was to examine the multiple relationships between the predictor and criterion variables, the statistical technique of canonical correlations was appropriate.

**4.7.1.2   Deriving the canonical functions and assessing overall fit**

Canonical correlations analysis is a multivariate statistical model that facilitates the study of interrelationships among sets of multiple dependent variables and multiple independent variables (Hair et al., 1998: 444).

Essentially, canonical analysis established two sets of weighting coefficients (a set for the criterion variables and a set for the predictor variables) such that if linear variates (or canonical factors) were formed for each set of variables, these variates would be more highly correlated than any other pair of linear compounds that could be formed. This technique is similar to factor analysis in that a large number of relationships is reduced to a smaller number of factors. However, where the factor model establishes orthogonal factors, each of which accounts for a maximum amount of variance among variables in one domain, the canonical model establishes orthogonal factor pairs, each of which accounts for a maximum amount of covariance between the respective sets of variables in two different domains (Cooley & Lohnes, 1971).

Table 4.17 below displays the canonical correlation, adjusted canonical correlation, approximate standard error, and squared canonical correlation for each pair of canonical variables. The first canonical correlation (the correlation between the first pair of canonical variables) is 0.8320 with a corresponding squared canonical correlation of 0.6922. The canonical correlation of 0.8320 represents the highest possible correlation between any linear combination of emotional competency variables and any linear combination of organisational culture variables.

**Table 4.17: Canonical correlation and eigenvalues**

| | Canonical Correlation | Adjusted Canonical Correlation | Approximate Standard Error | Squared Canonical Correlation | Eigenvalues of Inv(E)*H = CanRsq/(1-CanRsq) | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Eigenvalue | Difference | Proportion | Cumulative |
| 1 | **0.832010** | 0.789281 | 0.028699 | **0.692241** | 2.2493 | 0.8262 | 0.4999 | 0.4999 |
| 2 | **0.766363** | 0.723404 | 0.038483 | **0.587312** | 1.4231 | 1.1010 | 0.3163 | 0.8162 |
| 3 | 0.493587 | 0.330955 | 0.070532 | 0.243628 | 0.3221 | 0.1152 | 0.0716 | 0.8878 |
| 4 | 0.414033 | 0.234570 | 0.077265 | 0.171423 | 0.2069 | 0.0532 | 0.0460 | 0.9338 |
| 5 | 0.365030 | . | 0.080825 | 0.133247 | 0.1537 | 0.0767 | 0.0342 | 0.9680 |
| 6 | 0.267500 | . | 0.086578 | 0.071556 | 0.0771 | 0.0100 | 0.0171 | 0.9851 |
| 7 | 0.250744 | . | 0.087388 | 0.062872 | 0.0671 | | 0.0149 | 1.0000 |

Table 4.18 lists the likelihood ratio and associated statistics for testing the hypothesis that the canonical correlations in the current row and all that follow are zero. The first and second approximate F value of 2.58 and 1.73 respectively corresponds to the test that all other canonical correlations are zero. Since the p-values are small (< 0.0001), the null hypothesis would be rejected at the 0.01 level for both these variables. The third variate with an approximate F value of 0.95 corresponds to the test that the remaining canonical correlations variables are zero. Since the p-values are large, this hypothesis would not be rejected and conclude that only the first and second canonical correlations are significant.

**Table 4.18: Likelihood tests**

| | Test of H0: The canonical correlations in the current row and all that follow are zero | | | | |
|---|---|---|---|---|---|
| | Likelihood Ratio | Approximate F Value | Num DF | Den DF | Pr > F |
| **1** | 0.06002738 | 2.58 | 126 | 607.87 | <u><.0001</u> |
| **2** | 0.19504690 | 1.73 | 102 | 531.49 | <u><.0001</u> |
| **3** | 0.47262600 | 0.95 | 80 | 452.02 | 0.5971 |
| **4** | 0.62485951 | 0.79 | 60 | 369.16 | 0.8705 |
| **5** | 0.75413600 | 0.67 | 42 | 282.58 | 0.9406 |
| **6** | 0.87007007 | 0.53 | 26 | 192 | 0.9705 |
| **7** | 0.93712751 | 0.54 | 12 | 97 | 0.8818 |

Table 4.19 lists several multivariate statistics and F test approximations for the null hypothesis that all canonical correlations are zero. The small p-values for these tests (<0.0001), suggest rejecting the null hypothesis that all canonical correlations are zero in the population confirming the results of the likelihood ratio test in Table 4.15. With all of the tests resulting in a p-value smaller than (<0.0001), one can assume that the first two canonical correlations are significant. The next step is to interpret or identify the canonical variables corresponding to this significant correlation. Even though canonical variables are '**artificial**', they can often be '**identified**' in terms of the original variables (Hair et al., 1998). This is done primarily by inspecting the standardised coefficients of the canonical variables and the correlations between the canonical variables and their original variables. Since only the first two canonical correlations are significant, only the first two pairs of canonical variables need to be identified.

**Table 4.19: Multivariate Statistics and approximate F tests**

| Multivariate Statistics and F Approximations | | | | | |
|---|---|---|---|---|---|
| S=7    M=5    N=44.5 | | | | | |
| Statistic | Value | F Value | Num DF | Den DF | Pr > F |
| Wilks' Lambda | 0.06002738 | 2.58 | 126 | 607.87 | <.0001 |
| Pillai's Trace | 1.96228106 | 2.10 | 126 | 679 | <.0001 |
| Hotelling-Lawley Trace | 4.49932248 | 3.19 | 126 | 414.42 | <.0001 |
| Roy's Greatest Root | 2.24929890 | 12.12 | 18 | 97 | <.0001 |
| NOTE: F Statistic for Roy's Greatest Root is an upper bound. | | | | | |

### 4.7.1.3   Statistical and practical significance

The first statistical significance test is for the canonical correlations of each of the two canonical functions.   In this study, the first two canonical correlations are statistically significant (see Table 4.18).   In addition to tests of each canonical function separately, multivariate tests of both functions simultaneously were also performed.   The test statistics employed are Wilks' Lambda, Pillai's Trace, Hotelling-Lawley Trace, and Roy's Greatest Root.   Table 4.19 also details the multivariate test statistics, which all indicate that the canonical functions, taken collectively, are statistically significant at the .01 level.

In addition to statistical significance, the canonical correlations were both of sufficient size to be deemed practically significant.   The final step was to perform redundancy analyses on both canonical functions.

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### 4.7.1.4 Redundancy measure of shared variance

| Table 4.20:Standardised Variance of the emotional competency variables (independent variables) | | | | | |
|---|---|---|---|---|---|
| | Their Own Canonical Variables | | | The Opposite Canonical Variables | |
| Canonical Variable Number | Proportion | Cumulative Proportion | Canonical R-Square | Proportion | Cumulative Proportion |
| 1 | **0.4059** | 0.4059 | **0.6922** | **0.2810** | 0.2810 |
| 2 | **0.1891** | 0.5950 | **0.5873** | **0.1111** | 0.3920 |
| 3 | 0.0184 | 0.6134 | 0.2436 | 0.0045 | 0.3965 |
| 4 | 0.0207 | 0.6340 | 0.1714 | 0.0035 | 0.4001 |
| 5 | 0.0159 | 0.6500 | 0.1332 | 0.0021 | 0.4022 |
| 6 | 0.0198 | 0.6698 | 0.0716 | 0.0014 | 0.4036 |
| 7 | 0.0145 | 0.6843 | 0.0629 | 0.0009 | 0.4045 |

| Table 4.21: Standardised Variance of the organisational culture variables (dependent variables) | | | | | |
|---|---|---|---|---|---|
| | Their Own Canonical Variables | | | The Opposite Canonical Variables | |
| Canonical Variable Number | Proportion | Cumulative Proportion | Canonical R-Square | Proportion | Cumulative Proportion |
| 1 | **0.6308** | 0.6308 | **0.6922** | **0.4366** | 0.4366 |
| 2 | **0.2377** | 0.8685 | **0.5873** | **0.1396** | 0.5763 |
| 3 | 0.0323 | 0.9008 | 0.2436 | 0.0079 | 0.5841 |
| 4 | 0.0408 | 0.9416 | 0.1714 | 0.0070 | 0.5911 |
| 5 | 0.0151 | 0.9567 | 0.1332 | 0.0020 | 0.5931 |

| Table 4.21: Standardised Variance of the organisational culture variables (dependent variables) | | | | | |
|---|---|---|---|---|---|
| Canonical Variable Number | Their Own Canonical Variables | | Canonical R-Square | The Opposite Canonical Variables | |
| | Proportion | Cumulative Proportion | | Proportion | Cumulative Proportion |
| 6 | 0.0295 | 0.9863 | 0.0716 | 0.0021 | 0.5953 |
| 7 | 0.0137 | 1.0000 | 0.0629 | 0.0009 | 0.5961 |

The squared canonical correlations (roots) provide an estimate of the shared variance between the canonical variates. Although this is a simple and appealing measure of shared variance, it may lead to some misinterpretation because the squared canonical correlations represent the variance shared by the linear composites of the set of dependent and independent variables, and not the variance extracted from the set of variables. To overcome the inherent bias and uncertainty in using the canonical roots (Squared canonical correlations) as a measure of shared variance, a redundancy index has been proposed. It is the equivalent of computing the squared multiple correlation coefficients between the total independent variable set and each variable in the independent variable set, and then averaging these squared coefficients to arrive at an average $R^2$. This index provides a summary measure of the ability of a set of independent variables (taken as a set) to explain variation in the dependent variables (taken one at a time). As such, the redundancy measure is perfectly analogous to multiple regression $R^2$ statistic, and its value as an index is similar (Hair et al., 1998: 451).

A redundancy index was calculated for the independent and dependent variates of the all functions in Tables 4.20 and 4.21 respectively. As can be seen, the redundancy index for the first dependent variate is substantial (0.4366) and for the second dependent variate at (0.1396). The independent variate, however, has a markedly lower redundancy index of (0.2810) and (0.1111) for the first and second variates respectively, although in this case, because there is a clear delineation between dependent and independent variables, this lower value is not unexpected or problematic. The low redundancy of the independent variate results from the relatively low shared variance in the independent variate (0.6308)

and (0.2377) for the first and second variate, and not from the canonical $R^2$. From the redundancy analysis and the statistical significance tests, the first and second functions should be accepted as they are seen as been statistically and practically significant (Hair et al., 1998: 453).

### 4.7.1.5 Canonical loadings

Canonical loadings have been increasingly used as a basis for interpretation because of the deficiencies inherent in canonical weights. Canonical loadings, also called canonical structure correlations, measure the simple linear correlation between an original observed variable in the dependent or independent set and the set's canonical variate. The canonical loading reflects the variance that the observed variable shares with the canonical variate and can be interpreted like factor loadings in assessing the relative contributions of each variable to each canonical function. The methodology considers each independent canonical function separately and computes the within-set variable-to-variable correlation. The larger the coefficient the more important it is in deriving the canonical variate (Hair et al., 1998: 453).

Tables 4.22 and 4.23 show the canonical loadings for the dependent and independent variates for first and second canonical functions respectively. The objective of maximizing the variates for the correlation between them results in variates "optimized" not for interpretation, but instead for prediction. This makes identification of relationships more difficult. In the dependent variate, variables have loadings ranging from 0.599 to 0.9523 for the first variate and ranging from 0.3588 to 0.9069 for the second variate, resulting in the shared variance of (0.6305) for the first variate and (0.2307) for the second variate. This indicates a degree of intercorrelation among the variables and suggests that measures are representative of the effects of the leader's (TSO's) efforts. The 5 variates with highest loadings (canonical loadings >0.5 are read, see Table H1 in Appendix H for explanations) on the dependent variate 1 are C1( **performance orientation**), C6 (**competitiveness**), C2 (**social responsibility**), C7 (**innovation**) and C3 (**supportiveness)**. Similarly, the second variate with highest loadings on the dependent variate 2 are C5 (**stability**) and C4 (**emphasis on rewards**).

The first independent variate has a quite different pattern, with loadings ranging from .2052 to .8533. The 12 variables with the highest loadings on the independent variate are EQ7

(**achievement orientation**), EQ3 (**self-confidence**), EQ13 (**developing others**), EQ8 (**initiative**), EQ14 (**inspirational leadership**), EQ12 (**service orientation**), EQ6 (**adaptability**), EQ16 (**influence**), EQ17 (**conflict management**), EQ5 (**transparency**), EQ1 (**emotional self-awareness**) and EQ15 (**change catalyst**). The second independent variate has a quite different pattern, with loadings ranging from 0.0124 to 0.7562. The 4 variables with the highest loadings on the independent variate are EQ10 (**empathy**), EQ4 (**emotional self control**), EQ9 (**optimism**), and EQ18 (**teamwork and collaboration**).

Thus, the first dependent/independent variate set (shown in Figure 4.10) shows that the emotional intelligence competencies of achievement orientation, self-confidence, developing others, initiative, inspirational leadership, service orientation, adaptability, influence, conflict management transparency, emotional self-awareness and change management correlate with an organisation culture that has the following dimensions: performance orientation, social responsibility, supportiveness, competitiveness and innovation.

The properties associated with the first variate set are shown in Table 4.24. This result suggests that when a leader displays the following emotional competencies (independent variate set 1) - striving to improve or meeting a standard of excellence; a strong sense of one's self worth and capabilities; sensing others' development needs and bolstering their abilities; readiness to act on opportunities; inspiring and guiding individuals and groups; anticipating, recognising, and meeting customer needs; flexibility in handling change; wielding effective tactics for persuasion; negotiating and resolving disagreements; maintaining integrity, acting congruently with one's values; recognising one's emotions and their effects; and initiating and managing change – then the correlating culture associated with independent variate set one are - **Performance orientation** (having high expectation for performance; enthusiasm for the job; being results oriented; being highly organised), **Competitiveness (**achievement orientation, an emphasis on quality, being distinctive, being competitive), **Social responsibility** (being reflective, having a good reputation, being socially responsible, having a clear guiding philosophy), **Innovation** (being innovative, quick to take advantage of opportunities, risk taking, taking individual responsibility) and **Supportiveness** (being team orientated, sharing information freely, being people oriented, collaboration).

The second, dependent/independent variate set (shown in Figure 4.11) shows that a leader's emotional intelligence competencies of empathy, emotional self-control, optimism, teamwork

and collaboration correlate with an organisation culture with the following dimensions: **emphasis on rewards and stability**.

The properties associated with the second variate set are shown in Table 4.25. This result suggests that when a leader displays the following emotional competencies (independent variate set two) -The second variate set result suggests when a leader displays the following emotional competencies sensing others' feelings and perspectives and taking an active interest in their concerns; keeping disruptive emotions and impulses in check; persistence in pursuing goals despite obstacles and setbacks; and working with others toward shared goals. Creating group synergy in pursuing collective goals then the correlating culture associated with independent variate set one are - **Emphasis on rewards** (fairness, opportunities for professional growth, high pay for good performance, praise for good performance) and **Stability** (stability, being calm, security of employment, low conflict).

When interpreting canonical correlation results using canonical loadings it is often the practice to give the variate sets labels.  The first and second variate set is shown in rank order in Figure 4.10 and Figure 4.11 respectively and Tables 4.24 and 4.25 highlight the properties associated with each variate set respectively in rank order. An attempt was made to label each variate set however, this proved to be difficult. The key thoughts that come to mind when reviewing the first variate set (leader EQ competencies and organisation culture) is a leader who is entrepreneurial and  transformational epitomising Richard Branson as leader of Virgin as the organisation that is thinking outside the box and rewriting the market rules. In other words, a leader with the EQ competencies of ECI variate set 1 correlate with the cultural dimensions of OCP variate set 1(see Figure 4.10).

The second variate set epitomises your typical parastatal type leader who is concerned with maintaining stability and not upsetting the status quo (see Figure 4.11).

**Table 4.22:** **Correlations between the organisational culture variables and their canonical variables** (Canonical loadings for the dependent variate)

|  |  | W1 | W2 |
|---|---|---|---|
| TOT_C1 | Performance orientation | **0.9523** | 0.2598 |
| TOT_C2 | Social responsibility | **0.8497** | 0.4771 |
| TOT_C3 | Supportiveness | **0.7070** | 0.6596 |
| TOT_C4 | Emphasis on rewards | 0.6118 | **0.6037** |
| TOT_C5 | Stability | 0.5990 | **0.7102** |
| TOT_C6 | Competitiveness | **0.9235** | 0.1742 |
| TOT_C7 | Innovation | **0.8370** | 0.1861 |

**Table 4.23:** **Correlations between the emotional competency variables and their canonical variables** (Canonical loadings for the independent variate)

|  |  | V1 | V2 |
|---|---|---|---|
| TOT_EQ1 | Emotional self-awareness | **0.5054** | 0.3597 |
| TOT_EQ2 | Accurate self-assessment | 0.4768 | **0.5526** |
| TOT_EQ3 | Self-confidence | **0.8514** | 0.1757 |
| TOT_EQ4 | Emotional self-control | 0.2052 | **0.6391** |
| TOT_EQ5 | Transparency | **0.6112** | 0.3216 |
| TOT_EQ6 | Adaptability | **0.7173** | 0.2969 |
| TOT_EQ7 | Achievement orientation | **0.8533** | 0.2108 |
| TOT_EQ8 | Initiative | **0.7705** | 0.0124 |
| TOT_EQ9 | Optimism | 0.4973 | **0.6336** |
| TOT_EQ10 | Empathy | 0.4663 | **0.7562** |
| TOT_EQ11 | Organisational awareness | 0.4220 | 0.4251 |
| TOT_EQ12 | Service orientation | **0.7683** | 0.1481 |

| | | V1 | V2 |
|---|---|---|---|
| **TOT_EQ13** | Developing others | **0.7730** | 0.4092 |
| **TOT_EQ14** | Inspirational leadership | **0.7693** | 0.4872 |
| **TOT_EQ15** | Change catalyst | **0.5051** | 0.4240 |
| **TOT_EQ16** | Influence | **0.6752** | 0.3192 |
| **TOT_EQ17** | Conflict management | **0.6133** | 0.0478 |
| **TOT_EQ18** | Team work and collaboration | 0.5799 | **0.6553** |

Factor loadings>0.5 are considered (Hair et al., 1998: 111)



**ECI variates 1**
Achievement orientation
Self confidence
Developing others
Initiative
Inspirational leadership
Service orientation
Adaptability
Influence
Conflict management
Transparency
Emotional self awareness
Change catalyst

**OCP variates 1**
Performance orientation
Competitiveness
Social responsibility
Innovation
Supportiveness
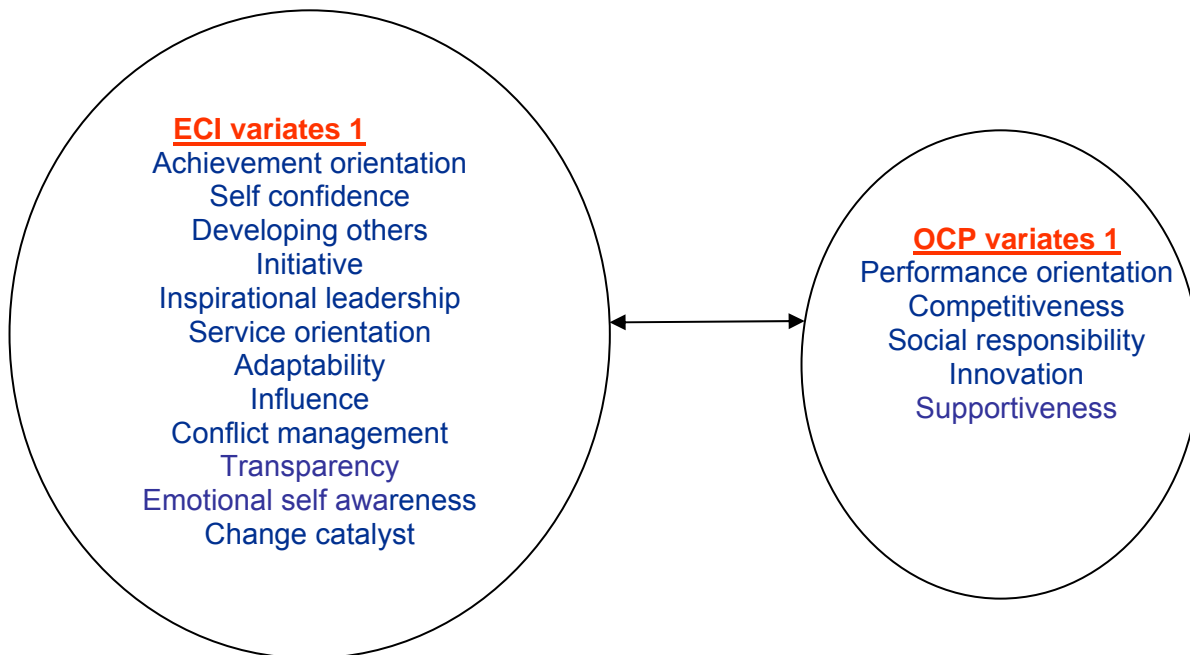
**Figure 4.10:  First dependent/independent variate set**

**Table 4.24: Properties of the first dependent / independent variate set**

| ECI properties (independent) | OCP properties (dependent) |
|---|---|
| o Striving to improve or meeting a standard of excellence | o Having high expectation for performance |
| o A strong sense of one's self worth and capabilities | o Enthusiasm for the job |
| | o Being results oriented |
| o Sensing others' development needs and bolstering their abilities | o Being highly organised |
| o Readiness to act on opportunities | o Achievement orientation |
| o Inspiring and guiding individuals and groups | o An emphasis on quality |
| | o Being distinctive |
| o Anticipating, recognising, and meeting customer needs | o Being competitive |
| o Flexibility in handling change | o Being reflective |
| o Wielding effective tactics for persuasion | o Having a good reputation |
| o Negotiating and resolving disagreements | o Being socially responsible |
| | o Having a clear guiding philosophy |
| o Maintaining integrity, acting congruently with one's values | o Being innovative |
| o Recognising one's emotions and their effects | o Quick to take advantage of opportunities |
| | o Risk taking |
| o Initiating and managing change | o Taking individual responsibility |
| | o Being team orientated |
| | o Sharing information freely |
| | o Being people oriented |
| | o Collaboration |

**Figure 4.11: Second independent/dependent variate set**

**Table 4.25: Properties of the second independent/dependent variate set**

| ECI properties | OCP properties |
|---|---|
| o Sensing others' feelings and perspectives, and taking an active interest in their concerns<br>o Keeping disruptive emotions and impulses in check<br>o Persistence in pursuing goals despite obstacles and setbacks<br>o Working with others toward shared goals. Creating group synergy in pursuing collective goals | o Fairness<br>o Opportunities for professional growth<br>o High pay for good performance<br>o Praise for good performance<br><br>o Stability<br>o Being calm<br>o Security of employment<br>o Low conflict |

### 4.7.1.6 Canonical correlation conclusions

The canonical correlation analysis addresses two primary objectives:  (1) the identification of dimensions among the dependent and independent variables that (2) maximize the relationship between the dimensions.  This provides the researcher with some insight into the structure of the different variable sets as they relate to a dependence relationship.  In examining this relationship, it is noticed firstly that the seven dependent variables (organisational culture variables measured by the OCP) are quite closely related and create a well defined dimension for representing the outcomes of the leader's emotional

competency. Second, this outcome dimension is fairly well predicted by the set of independent variables (18 ECI variables) when acting as a set. The redundancy value of 0.4366 would be a quite acceptable $R^2$ for a comparable multiple regression. When interpreting the independent variate 1, it is noticed that 12 variables listed in rank order (achievement orientation, self confidence, developing others, initiative, inspirational leadership, service orientation, adaptability, influence, conflict management transparency, emotional self awareness and change catalyst) provide substantive contributions (factor loadings >0.5) and thus are the key predictors of the first outcome dimension. When interpreting the independent variate 2, it is noticed that 5 variables (empathy, teamwork and collaboration, emotional self control, optimism and accurate self assessment) provide substantive contributions and thus are the key predictors of the second outcome dimension. These should be the focal points in the development of any strategy directed toward impacting the outcomes of organisational culture. From the above analysis we can reject the null hypothesis and accept the main hypothesis that there is a relationship between at least one linear combination of the leader ECI dimensions and at least one linear combination of organisational culture dimensions.

### 4.7.2  Multiple stepwise regression

Multiple regression analysis is a statistical technique that can be used to analyse the relationship between a single dependent (criterion) variable and several independent (predictor) variables. The objective of multiple regression analysis is to use the independent variables whose values are known to predict the single dependent value selected.

### 4.7.2.1  Objectives of multiple regression

The researcher was interested in predicting the level of organisational performance from the perception of the leader's emotional competency and the perception of the organisational culture. The main hypothesis is stated in H0 below. Before the main hypothesis H0 is solved, the sub hypothesis $H0_a$ and $H0_b$ will be analysed first.

**H0:** There is no relationship between the dimensions of the leader EQ and the dimensions of organisational culture on organisational performance.

**H1:** There is a relationship between at least one dimension of EQ and at least one dimension of organisational culture on organisational performance.

The sub hypotheses can be stated as:

**H0$_a$:** There is no relationship between the dimensions of EQ and organisational performance.

**H1$_a$:** There is a relationship between the dimensions of EQ and organisational performance.

**H0$_b$:** There is no relationship between the dimensions of organisational culture and organisational performance.

**H1$_b$:** There is a relationship between the dimensions of organisational culture and organisational performance.

To apply the regression procedure, the researcher selected the TSO performance as the dependent variable (Y) to be predicted by the 18 ECI independent variables or the 7 OCP variables.

## 4.7.2.2 Research design of a multiple regression

The sample comprised 118 leaders (TSOs). The first question to be answered concerning sample size is the level of relationship ($R^2$) that can be detected reliably with the proposed regression analysis. Table H1 in Appendix H, indicates that the sample of 118, with 18 independent variables, is able to detect relationships with $R^2$ values of approximately 16 percent at a power of 0.80 with the significance level set at 0.05. The proposed regression was deemed sufficient to identify not only statistically significant relationships but also relationships that had managerial significance (Hair et al., 1998: 165). This is the minimum $R^2$ that is required to be considered significantly different from zero.

The sample of 118 observations also meets the proposed minimum guidelines for the ratio of observations to independent variables with a ratio of 6 to 1 when looking at the 18 ECI competencies as independent variables, a ratio of 16 to 1 when looking at the 7 OCP dimensions as independent variables and approximately 5 to 1 when looking at ECI and OCP combined.

### 4.7.2.3  Assumptions in multiple regression

Meeting the assumptions of regression analysis is essential to ensure that the results obtained were truly representative of the sample and that the best results were obtained. Any serious violations of the assumptions must be detected and corrected if at all possible.  The analysis to ensure that the research is meeting the basic assumptions of regression analysis involves two steps:

- Testing the individual dependent and independent variables, and
- testing the overall relationship after model estimation.

This assessment of individual variables has been done in section 4.4, and the overall relationship was examined after the model had been estimated.

### 4.7.2.4  Estimating the regression model

With the regression analysis specified in terms of the dependent and independent variables, the sample deemed adequate for the objectives of the study, and the assumptions assessed for the individual variables, the model-building process now proceeds to estimation of the regression model and assessing the overall model fit. The stepwise procedure was employed to select variables for inclusion in the regression variate. After the regression model was estimated, the variate was assessed for meeting the assumptions of regression analysis. Finally, the observations were examined to determine whether any observations should be deemed influential.

### 4.7.2.5 Interpreting the regression variate

### 4.7.2.5.1 Variable information

Tables 4.26a and 4.26b list all the independent variables used in the study.

**Table 4.26a: Description of ECI variables**

| Variable | Label |
|---|---|
| Tot_EQ1 | (Tot) Emotional self-awareness. Recognizing how our emotions affect our performance. |
| Tot_EQ2 | (Tot) Accurate self-assessment. Knowing one's inner resources, abilities, and limits. |
| Tot_EQ3 | (Tot) Self-confidence. A strong sense of one's self-worth and capabilities. |
| Tot_EQ4 | (Tot) Emotional self-control. Keeping disruptive emotions and impulses in check. |
| Tot_EQ5 | (Tot) Transparency. Maintaining integrity, acting congruently with one's values. |
| Tot_EQ6 | (Tot) Adaptability. Flexibility in handling change. |
| Tot_EQ7 | (Tot) Achievement orientation achievement orientation. Striving to improve or meeting a standard of excellence. |
| Tot_EQ8 | (Tot) Initiative. Readiness to act on opportunities. |
| Tot_EQ9 | (Tot) Optimism. Persistence in pursuing goals despite obstacles and setbacks. |
| Tot_EQ10 | (Tot) Empathy. Sensing others' feelings and perspectives, and taking an active interest in their concerns. |
| Tot_EQ11 | (Tot) An organisational awareness. Reading a group's emotional currents and power relationships. |
| Tot_EQ12 | (Tot) Service orientation. Anticipating, recognizing, and meeting customers' or clients' needs. |
| Tot_EQ13 | (Tot) Developing others. Sensing others' development needs and bolstering their abilities. |
| Tot_EQ14 | (Tot) Inspirational leadership. Inspiring and guiding individuals and groups. |
| Tot_EQ15 | (Tot) Change catalyst. Initiating or managing change. |
| Tot_EQ16 | (Tot) Influence. Having impact on others. |
| Tot_EQ17 | (Tot) Conflict management. Negotiating and resolving disagreements. |
| Tot_EQ18 | (Tot) Teamwork and collaboration. Working with others towards a shared goal. Creating group synergy in pursuing collective goals. |

**Table 4.26b: Description of OCP variables**

| Variable | Label |
|----------|-------|
| Tot_C1 | (Tot) Performance orientation |
| Tot_C2 | (Tot) Social responsibility |
| Tot_C3 | (Tot) Supportiveness |
| Tot_C4 | (Tot) Emphasis on rewards |
| Tot_C5 | (Tot) Stability |
| Tot_C6 | (Tot) Competitiveness |
| Tot_C7 | (Tot) Innovation |

### 4.7.2.5.2   Computing bivariate correlations

In most studies in which data is analysed using multiple regression, it is appropriate to begin the analysis by computing all possible correlations between the study's variables. Reviewing these correlations will help the reader understand the big picture concerning the simple relationships between the dependent (criterion) variables and the independent (predictor) variables (Hatcher & Stepanski, 2001).   Table 4.27 and 4.28 below shows the Pearson correlation (r=correlation coefficient) between the 18 ECI variables, the 7 OCP variables with TSO performance and TSC performance.  The statistically significant variables are indicated by * as listed below:

- •        **  Correlation is significant at the 0.01 level (2-tailed).
- •        *   Correlation is significant at the 0.05 level (2-tailed).

The Pearson correlations indicated in Table 4.27 indicates the following ECI dimensions are statistically significant with the TSO performance appraisal variable:
- • self-confidence
- • adaptability
- • achievement orientation
- • initiative
- • service orientation
- • developing others
- • inspirational leadership

- influence
- conflict management

Similarly, the Pearson correlations indicated in Table 4.27 indicates the following ECI dimensions are statistically significant with the TSC performance variable:
- Emotional self awareness
- Transparency
- Inspirational leadership
- Influence

While there are correlation values for both the performance variables that are statistically significant, the correlation values for the TSO performance appraisal scores are reasonably high to further analyse. It is for this reason that only the TSO performance appraisal scores was future analysed and the TSC performance scores ignored (very low correlation coefficients). Using the Burns (2000: 235) guideline to determine the degree of relationship between the 18 ECI and TSO performance appraisal (0.2 - 0.4 low correlation and a weak relationship) it can be said that for the above variables that are considered significant the relationship with TSO performance is considerably weak.

The Pearson correlations indicated in Table 4.28 indicates that all of the OCP variables are statistically significant ($p < 0.05$) with the TSO performance appraisal variable and the TSC performance variable. However, the TSC performance scores are ignored due to the reasons given above.  Using the Burns (2000: 235) guideline to determine the degree of relationship between the OCP variables and TSO performance (0.2 - 0.4 low correlation and a weak relationship) it can be said that for the above variables that are considered significant, the relationship with TSO performance, is weak.

**Table 4.27: Pearson Correlation between ECI and organisational performance**

| ECI Dimensions | TSO performance appraisal for 2005 | TSC Performance score 2005 |
|---|---|---|
| Emotional self-awareness | .106 | .241(**) |
| Accurate self-assessment. | .135 | 1 |
| Self-confidence | .319(**) | .107 |
| Emotional self-control | -.096 | .106 |
| Transparency | .156 | .205(*) |
| Adaptability | .237(*) | .058 |
| Achievement orientation | .312(**) | .044 |
| Initiative | .241(**) | .175 |
| Optimism | .115 | .152 |
| Empathy | .107 | .057 |
| Organisational awareness | .163 | .081 |
| Service orientation | .272(**) | .066 |
| Developing others | .289(**) | .071 |
| Inspirational leadership | .262(**) | .192(*) |
| Change catalyst. | .081 | .094 |
| Influence | .218(*) | .188(*) |
| Conflict management | .193(*) | -.030 |
| Teamwork and collaboration | .157 | .058 |

**Table 4.28: Pearson Correlation between OCP and organisational performance**

| OCP Dimensions | TSO performance appraisal for 2005 | TSC Performance score 2005 |
|---|---|---|
| (Tot) Performance orientation | .380(**) | .272(**) |
| (Tot) Social responsibility | .364(**) | .294(**) |
| (Tot) Supportiveness | .278(**) | .212(*) |
| (Tot) Emphasis on rewards | .191(*) | .313(**) |
| (Tot) Stability | .218(*) | .313(**) |
| (Tot) Competitiveness | .406(**) | .290(**) |

| OCP Dimensions | TSO performance appraisal for 2005 | TSC Performance score 2005 |
|---|---|---|
| (Tot) Innovation | .391(**) | .198(*) |

**4.7.2.6 Interpreting the multiple stepwise regressions between ECI and TSO performance**
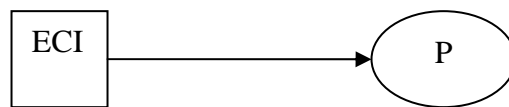


**Figure 4.12: The relationship between ECI and organisational performance**

The step-wise multiple regression procedure selects 2 independent variables (Table 4.29) as significantly contributing towards the prediction of performance. These variables are, in order in which they entered the model, **self-confidence** (Tot_EQ3) and **emotional self-control** (Tot_EQ4). The dependent variable is the TSO's performance appraisal score for 2005 used as a measured of organisational performance.

**Table 4.29: The relationship between ECI and organisational performance: Variables Entered/Removed (a)**

| Model | Variables Entered | Variables Removed | Method |
|---|---|---|---|
| 1 | Tot_EQ3 | . | Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove ≥ .100). |
| 2 | Tot_EQ4 | . | Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove ≥ .100). |

a  Dependent Variable: TSO_PA_2005

Table 4.30 shows the model summary for the R (correlation coefficient), $R^2$ (coefficient of determination), Adjusted $R^2$ and Standard error of the Estimate. The $R^2$ value indicates the

percent of variance in the criterion (dependent) variable that is accounted for by the linear combination of predictor (independent) variable.  Model 1 has an $R^2$ = 0.102 and model 2 has an $R^2$ = 0.181.  This indicates that the linear combination of **self confidence** (Tot_EQ3) and **emotional self control** (Tot_EQ4) accounts for 18.1% of the variance, for model 2, in TSO performance.

The $R^2$ value is adjusted for the degrees of freedom and thus referred to as the adjusted $R^2$. This is provided because the actual value of $R^2$ obtained with a given sample often overestimates the population value for $R^2$. The adjusted $R^2$, however, has been adjusted downwards to closely approximate the population value. For this reason the value to adjusted $R^2$ is normally smaller than the value of $R^2$ (Hatcher & Stepanski, 2001).

**Table 4.30:   The relationship between ECI and organisational performance: Model summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|------|----------|-------------------|----------------------------|
| 1 | .319(a) | .102 | .094 | .32757 |
| 2 | .426(b) | .181 | .167 | .31410 |

a  Predictors: (Constant), self-confidence(Tot_EQ3)

b  Predictors: (Constant), self-confidence(Tot_EQ3), emotional self-control(Tot_EQ4)

There is a significance test associated with the $R^2$ which tests the hypothesis that $R^2$ =0 in the population. To test this null hypothesis, (Analysis of Variance column in Table 4.31 below, section under the "F value") is viewed. In both cases, there is an F value of 12.892 for model 1 and 12.505 for model 2. Under the heading "Sig" is the *p-value* associated with this F value. The *p-value* gives the probability of obtaining an F value which is large or larger if the null hypothesis were true. In both cases, the p-value is very small (0.000), so the null hypothesis is rejected for both cases and it can be concluded that the obtained value for $R^2$ is statistically significant. In other words, the $R^2$ obtained is probably greater than zero in the population (Hatcher & Stepanski, 2001).

**Table 4.31: The relationship between ECI and organisational performance: ANOVA(c)**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 1.383 | 1 | 1.383 | 12.892 | .000(a) |
| | Residual | 12.233 | 114 | .107 | | |
| | Total | 13.616 | 115 | | | |
| 2 | Regression | 2.467 | 2 | 1.234 | 12.505 | .000(b) |
| | Residual | 11.148 | 113 | .099 | | |
| | Total | 13.616 | 115 | | | |

a  Predictors: (Constant), self confidence(Tot_EQ3)

b  Predictors: (Constant), self confidence(Tot_EQ3), emotional self control(Tot_EQ4)

c  Dependent Variable: TSO_PA_2005

Table 4.32 below provides information about the parameter estimates. These parameter estimates are the terms that constitute the multiple regression equation: Intercept and the non-standardised multiple regression coefficients for the predictor (independent) variables. Based on these parameters, the multiple regression equation for model 2 (the reason for the choice of model 2 will be explained below) maybe written as:

TSO performance (2005)     = constant + $B_1$( Tot_EQ3) + $B_2$(Tot_EQ4)

                                       = 3.168 + 0.359x (Tot_EQ3) -0.247x (Tot_EQ4)

where

Tot_EQ3 = self confidence

Tot_EQ4 = emotional self control

The multiple regression coefficient for a given predictor (independent) variable indicates the amount of change in the criterion (dependent) variable that is associated with one unit change in the predictor variable, while holding constant the remaining predictor variable. Non standardised coefficients represent the change that would be observed when the variables are in non-standardised,"raw scores" form (i.e. the different variables have different means and standard deviations). The non-standardised regression equation would be used to predict subject scores on TSO performance so that the resulting scores would be on the same scale of magnitude as was observed with raw data.

Researchers are often interested in determining whether regression coefficients for the various predictor variables are significantly different from zero. When given coefficients are statistically significant, this may be seen as evidence that the corresponding predictor variable is a relatively important predictor of the criterion variable.

For the predictor variable, the output provides a t-Test that tests the null hypothesis that, in the population, the regression coefficient is equal to zero. The obtained t-value may be found in the "t" column in Table 4.32, "T for HO: Parameter=0". The p-value corresponding to this value of "t" may be found in the next column, headed "sig" (Hatcher & Stepanski, 2001).

**Table 4.32:    The relationship between ECI and organisational performance: Coefficients(a)**

| Model | | Unstandardised Coefficients | | Standardised Coefficients | t | Sig. | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | | Tolerance | VIF |
| 1 | (Constant) | 2.766 | .258 | | 10.735 | .000 | | |
| | Tot_EQ3 | .242 | .067 | .319 | 3.590 | .000 | 1.000 | 1.000 |
| 2 | (Constant) | 3.168 | .275 | | 11.512 | .000 | | |
| | Tot_EQ3 | .359 | .074 | .472 | 4.873 | .000 | .772 | 1.296 |
| | Tot_EQ4 | -.247 | .075 | -.321 | -3.315 | .001 | .772 | 1.296 |

a  Dependent Variable: TSO_PA_2005

In any interpretation of the regression variate, the researcher must be aware of the impact of multicollinearity. Highly, collinear variables can distort the results substantially or make them quite unstable and thus not generalisable. Two measures are available for testing the impact of collinearity:

- Calculating the tolerance and variance inflation factor (VIF) values, and
- using the condition indices and decomposing the regression coefficient variance.

The tolerance value is one minus the proportion of the variables variance explained by the other independent variables. Thus a high tolerance value indicates little collinearity, and tolerance values approaching zero indicate that the variable is almost totally accounted for by the other variables. The VIF is the reciprocal of the tolerance value, thus we look for small VIF values as indicative of low intercorrelation among variables. In this case the tolerance

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values for model 2 exceed 0.722, for both models indicating a low level of collinearity. Likewise, the VIF values are quite close to 1. These results indicate that interpretation of the regression variate coefficient for model 2 should not be affected adversely by multicollinearity.

Condition index is a measure of tightness or dependency of one variable on the other. A high condition index is associated with variance inflation in the standard error of the parameter estimate for a variable. When its standard error becomes very large, the parameter estimate is highly uncertain. Each root (dimension) accounts for some proportion of the variance of each parameter estimate. A collinearity problem occurs when a root with high condition index contributes strongly (has high variance proportions) to the variance of two or more variables. Criteria for multicollinearity suggested by Belsey, Kuh and Welsch (1980) are conditioning index <30 for a given dimension coupled with as least two variance proportions for an individual variable >0.50 (Tabachnick & Fidell, 2007: 91). Based on the above explanation the model 2 is acceptable as it has a condition index of 20.705 (Table 4.33) which is < than 30.  Thus, multicollinearity is not a problem in model 2.

**Table 4.33:**   **The relationship between ECI and organisational performance: Collinearity diagnostics (a)**

| Model | Dimension | Eigenvalue | Condition Index | Variance Proportions | | |
|---|---|---|---|---|---|---|
| | | | | (Constant) | Tot_EQ3 | Tot_EQ4 |
| 1 | 1 | 1.993 | 1.000 | .00 | .00 | |
| | 2 | .007 | 16.888 | 1.00 | 1.00 | |
| 2 | 1 | 2.984 | 1.000 | .00 | .00 | .00 |
| | 2 | .009 | 18.567 | .32 | .12 | .98 |
| | 3 | .007 | 20.705 | .68 | .87 | .02 |

a  Dependent Variable: TSO_PA_2005

**4.7.2.7  Interpreting the multiple regression between organisational culture and TSO performance**
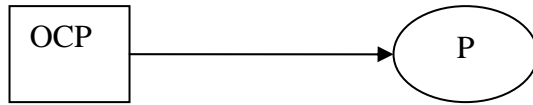


**Figure 4.13:  The relationship between organisational culture and organisational performance**

Table 4.34 below shows the two independent OCP variables entered into the model namely, **competitiveness** (Tot_C6) and **emphasis on rewards** (Tot_C4). The dependent variable is the TSO's performance appraisal score for 2005 used as a measured of organisational performance.

**Table 4.34:  The relationship between OCP and organisational performance: Variables Entered/Removed(a)**

| Model | Variables Entered | Variables Removed | Method |
|-------|-------------------|-------------------|--------|
| 1 | Tot_C6 | . | Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove ≥ .100). |
| 2 | Tot_C4 | . | Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove ≥ .100). |

a  Dependent Variable: TSO_PA_2005

Table 4.35 shows the model summary for the R , $R^2$, adjusted $R^2$ and Standard error of the Estimate. The $R^2$ value indicates the percent of variance in the criterion (dependent) variable that is accounted for by the linear combination of predictor (independent) variable.  Model 1 has an $R^2$ = 0.165 and model 2 has an $R^2$ = 0.194.  This indicates that **emphasis on rewards** (Tot_C4) accounts for 16.5% of the variance, for model 1, in TSO performance.

**Table 4.35: The relationship between OCP and organisational performance: Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|------|----------|-------------------|----------------------------|
| 1 | .406(a) | .165 | .157 | .31586 |
| 2 | .440(b) | .194 | .179 | .31171 |

a  Predictors: (Constant), competitiveness(Tot_C6)

b  Predictors: (Constant), competitiveness(Tot_C6), emphasis on rewards(Tot_C4)

There is a significance test associated with the $R^2$ which tests the hypothesis that $R^2 = 0$ in the population. To test this null hypothesis, the (Analysis of Variance Table 4.36 below, section under the "F value") is viewed. In both cases, there is an F value of 22.472 for model 1 and 13.567 for model 2. Under the heading "Sig" is the *p-value* associated with this F value. The *p-value* gives the probability of obtaining an F value which is large or larger if the null hypothesis were true. In both cases, the p-value is very small (0.000), so the null hypothesis is rejected and the obtained value for $R^2$ is statistically significant. In other words, the $R^2$ obtained is probably greater than zero in the population (Hatcher & Stepanski, 2001).

**Table 4.36: The relationship between OCP and organisational performance: ANOVA(c)**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|-------|------------|----------------|-----|-------------|--------|---------|
| 1 | Regression | 2.242 | 1 | 2.242 | 22.472 | .000(a) |
|   | Residual | 11.374 | 114 | .100 | | |
|   | Total | 13.616 | 115 | | | |
| 2 | Regression | 2.636 | 2 | 1.318 | 13.567 | .000(b) |
|   | Residual | 10.979 | 113 | .097 | | |
|   | Total | 13.616 | 115 | | | |

a  Predictors: (Constant), competitiveness(Tot_C6)

b  Predictors: (Constant), competitiveness(Tot_C6), emphasis on rewards(Tot_C4)

c  Dependent Variable: TSO_PA_2005

The Table 4.37 provides information about the parameter estimates. These parameter estimates are the terms that constitute the multiple regression equation: Intercept and the non-standardised multiple regression coefficients for the predictor (independent) variables.

Based on these parameters, you may write the multiple regression equation for model 1 (the reason for the choice of model 1 will be explained below) as:

TSO Performance (2005)     = constant + $B_1$( Tot_C6)
                          = 2.700 + 0.414x (Tot_C6)

where

Tot_C6 = competitiveness

For the predictor variable, the output provides a t-Test that tests the null hypothesis that, in the population, the regression coefficient is equal to zero. The obtained t-value may be found in the "t" column in Table 4.37, "T for HO: Parameter=0". The p-value corresponding to this value of "t" may be found in the next column, headed "sig". Model 1 satisfies all the above criteria and is therefore used as the acceptable model (Hatcher & Stepanski, 2001).

**Table 4.37: The relationship between OCP and organisational performance: Coefficients(a)**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | | Tolerance | VIF |
| 1 | (Constant) | 2.700 | .210 | | 12.863 | .000 | | |
| | Tot_C6 | .281 | .059 | .406 | 4.740 | .000 | 1.000 | 1.000 |
| 2 | (Constant) | 2.906 | .231 | | 12.579 | .000 | | |
| | Tot_C6 | .414 | .088 | .598 | 4.695 | .000 | .440 | 2.271 |
| | Tot_C4 | -.202 | .100 | -.256 | -2.015 | .046 | .440 | 2.271 |

a  Dependent Variable: TSO_PA_2005

In any interpretation of the regression variate, the researcher must be aware of the impact of multicollinearity. Highly, collinear variables can distort the results substantially or make them quite unstable and thus not generaliseable. Two measures are available for testing the impact of collinearity:

- Calculating the tolerance and VIF values, and
- using the condition indices and decomposing the regression coefficient variance

Similar to the detailed explanations given in section 4.7.2.6 above, model 2 has low tolerance values with a VIF=2.271 on this basis we can ignore model 2 and conservatively choose model 1. These results indicate that the interpretation of the regression variate coefficient for model 1 should not be affected by multicollinearity.

Similarly to discussion in section 4.7.2.6 the first model is acceptable as it has a condition index of 14.245 (Table 4.38) which is < than 30. Thus, multicollinearity is not a problem in this model.

**Table 4.38:** **The relationship between OCP and organisational performance:**
**Collinearity diagnostics(a)**

| Model | Dimension | Eigenvalue | Condition Index | Variance Proportions | | |
|---|---|---|---|---|---|---|
| | | | | (Constant) | Tot_C6 | Tot_C4 |
| 1 | 1 | 1.990 | 1.000 | .00 | .00 | |
| | 2 | .010 | 14.245 | 1.00 | 1.00 | |
| 2 | 1 | 2.985 | 1.000 | .00 | .00 | .00 |
| | 2 | .011 | 16.679 | .96 | .20 | .07 |
| | 3 | .005 | 25.716 | .04 | .80 | .93 |

a  Dependent Variable: TSO_PA_2005

### 4.7.2.8  Interpreting the multiple stepwise regression between emotional competency and organisational culture on organisational performance
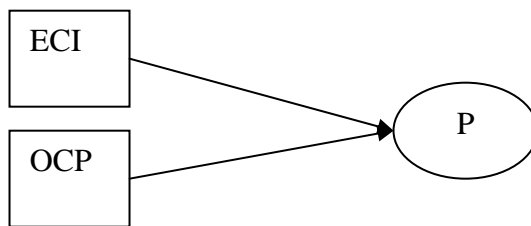


**Figure 4.14:** **The relationship between emotional competency and organisational culture on organisational performance**

In this part of the analysis, ECI (18) and OCP (7) are entered stepwise into the analysis as independent variables. Table 4.39 below shows the independent variables entered into the

model namely, **competitiveness** (Tot_C6), **emotional self-contro**l (Tot_EQ4) and **self-confidence** (Tot_EQ3). The dependent variable is TSO performance appraisal score for 2005. The dependent variable is the TSO's performance appraisal score for 2005 used as a measured of organisational performance

**Table 4.39:    The relationship between ECI and OCP on organisational performance: Variables Entered/Removed(a)**

| Model | Variables Entered | Variables Removed | Method |
|-------|-------------------|-------------------|--------|
| 1 | Tot_C6 | . | Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove ≥ .100). |
| 2 | Tot_EQ4 | . | Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove ≥ .100). |
| 3 | Tot_EQ3 | . | Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove ≥ .100). |

a  Dependent Variable: TSO_PA_2005

Table 4.40 shows the model summary for the R , $R^2$, Adjusted $R^2$ and Standard error of the Estimate. The $R^2$ value indicates the percent of variance in the criterion (dependent) variable that is accounted for by the linear combination of predictor (independent) variable.  Model 1 has an $R^2$ = 0.165, model 2 has an $R^2$ = 0.201 and model 3 has an R2 = 0.229.  This indicates that the linear combination of **competitiveness** (Tot_C6), **emotional self-awareness** (Tot_EQ4) accounts for 20.1 % of the variance, for model 2, in TSO performance.

**Table 4.40:** The relationship between ECI and OCP on organisational performance: Model summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|:---:|:---:|:---:|:---:|:---:|
| 1 | .406(a) | .165 | .157 | .31586 |
| 2 | .449(b) | .201 | .187 | .31021 |
| 3 | .478(c) | .229 | .208 | .30617 |

a  Predictors: (Constant), competitiveness(Tot_C6)

b  Predictors: (Constant), competitiveness(Tot_C6), emotional self control(Tot_EQ4)

c  Predictors: (Constant), competitiveness(Tot_C6), emotional self control(Tot_EQ4), self-confidence(Tot_EQ3)

There is a significance test associated with the $R^2$ which tests the hypothesis that $R^2 = 0$ in the population. To test this null hypothesis, the (Analysis of Variance Table 4.41 below, section under the "F value") is viewed. In the three cases, you see an F value of 22.472 for model 1, 14.249 for model 2 and 11.083 for model 3. Under the heading "Sig" is the *p-value* associated with this F value. The *p-value* gives us the probability that you would obtain an F value which is large or larger if the null hypothesis were true. In both cases, the p-value is very small (0.000), so you reject the null hypothesis for all cases, and conclude that the obtained value for $R^2$ is statistically significant. In other words, it can be concluded that $R^2$ is probably greater than zero in the population (Hatcher & Stepanski, 2001).

**Table 4.41:** The relationship between ECI and OCP on organisational performance: ANOVA(d)

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 2.242 | 1 | 2.242 | 22.472 | .000(a) |
| | Residual | 11.374 | 114 | .100 | | |
| | Total | 13.616 | 115 | | | |
| 2 | Regression | 2.742 | 2 | 1.371 | 14.249 | .000(b) |
| | Residual | 10.874 | 113 | .096 | | |
| | Total | 13.616 | 115 | | | |
| 3 | Regression | 3.117 | 3 | 1.039 | 11.083 | .000(c) |
| | Residual | 10.499 | 112 | .094 | | |
| | Total | 13.616 | 115 | | | |

a  Predictors: (Constant), competitiveness (Tot_C6)

b  Predictors: (Constant), competitiveness(Tot_C6), emotional self control(Tot_EQ4)

c  Predictors: (Constant), competitiveness(Tot_C6), emotional self control(Tot_EQ4), self confidence(Tot_EQ3)

d  Dependent Variable: TSO_PA_2005

Table 4.42 provides information about the parameter estimates. These parameter estimates are the terms that constitute the multiple regression equation: Intercept and the non-standardised multiple regression coefficients for the predictor (independent) variables. Based on these parameters, you may write the multiple regression equation for model 2 (the reason for the choice of model 2 will be explained below) as:

TSO performance (2005)　　= constant + $B_1$( Tot_C6) + $B_2$(Tot_EQ4)
　　　　　　　　　　　　 = 2.978 + 0.312(Tot_C6)-0.151(Tot_EQ4)

where

Tot_C6 = competitiveness

Tot_EQ4 = emotional self control

For the predictor variable, the output provides a t-test that test the null hypothesis that, in the population, the regression coefficient is equal to zero. The obtained t-value may be found in the t column in Table 4.42, "T for HO: Parameter=0". The p-value corresponding to this value

of t may be found in the next column, headed "sig". Model 2 satisfies all the above criteria and is therefore used as the acceptable model (Hatcher & Stepanski, 2001).

**Table 4.42:** **The relationship between ECI and OCP on organisational performance: Coefficients (a)**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | | Tolerance | VIF |
| 1 | (Constant) | 2.700 | .210 | | 12.863 | .000 | | |
| | Tot_C6 | .281 | .059 | .406 | 4.740 | .000 | 1.000 | 1.000 |
| 2 | (Constant) | 3.109 | .273 | | 11.375 | .000 | | |
| | Tot_C6 | .312 | .060 | .450 | 5.216 | .000 | .950 | 1.053 |
| | Tot_EQ4 | -.151 | .066 | -.197 | -2.280 | .024 | .950 | 1.053 |
| 3 | (Constant) | 2.976 | .278 | | 10.706 | .000 | | |
| | Tot_C6 | .208 | .079 | .299 | 2.632 | .010 | .532 | 1.878 |
| | Tot_EQ4 | -.218 | .074 | -.283 | -2.965 | .004 | .754 | 1.326 |
| | Tot_EQ3 | .191 | .096 | .252 | 1.999 | .048 | .433 | 2.311 |

a  Dependent Variable: TSO_PA_2005

In any interpretation of the regression variate, the researcher must be aware of the impact of multicollinearity. Highly, collinear variables can distort the results substantially or make them quite unstable and thus not generalisable. Two measures are available for testing the impact of collinearity:

- Calculating the tolerance and VIF values, and
- using the condition indices and decomposing the regression coefficient variance.

In this case the tolerance values for model 2 exceed 0.950, indicating a very low level of collinearity. Likewise, the VIF values are quite close to 1. These results indicate that interpretation of the regression variate coefficient for model 2 should not be affected adversely by multicollinearity.

Based on the above explanation the second model is acceptable as it has a condition index of 22.726 (Table 4.43) which is < than 30. Model 3 cannot be used as it exceeds the collinearity limit of <30.

**Table 4.43:** **The relationship between ECI and OCP on organisational performance: Collinearity diagnostics(a)**

| Model | Dimension | Eigen value | Condition index | Variance proportions | | | |
|---|---|---|---|---|---|---|---|
| | | | | Constant | Tot_C6 | Tot_EQ4 | Tot_EQ3 |
| 1 | 1 | 1.990 | 1.000 | .00 | .00 | | |
| 2 | 2 | .010 | 14.245 | 1.00 | 1.00 | | |
| | 1 | 2.978 | 1.000 | .00 | .00 | .00 | |
| | 2 | .014 | 14.501 | .01 | .74 | .48 | |
| 3 | 3 | .007 | 20.129 | .99 | .26 | .52 | |
| | 1 | 3.974 | 1.000 | .00 | .00 | .00 | .00 |
| | 2 | .015 | 16.523 | .02 | .34 | .40 | .01 |
| | 3 | .008 | 22.726 | .98 | .03 | .31 | .05 |
| | 4 | .004 | 30.758 | .00 | .63 | .28 | .93 |

a  Dependent Variable: TSO_PA_2005

### 4.7.2.9  Multiple regression conclusions

In this section the researcher looked at the relationship between EQ and organisational performance, organisational culture and organisational performance and EQ and organisational culture on organisational performance.  The results all assist in addressing the main research question: Is there a relationship between leader EQ variables and organisational culture variables on organisational performance? In formulating the response a researcher must consider two aspects: Prediction and explanation. In terms of prediction, the regression models all achieve significant but weak levels of predictive accuracy. In the relationship between ECI and organisational performance the amount of variance ($R^2$) explained exceeds 18%. In the relationship between OCP and organisational performance the amount of variance ($R^2$) explained exceeds 17%. In the relationship among ECI and OCP on organisational performance the amount of variance ($R^2$) explained exceeds 20% for model 2. In this type of research setting these levels, augmented by the results supporting model validity, provide the highest levels of assurance as to the quality and accuracy of the regression models as the basis for developing business strategies (Hair et al., 1998: 213).

In terms of explanation, the final model chosen conservatively, shows that it is perceived that TSO performance is linked to TSC competitiveness and the lack of emotional control (not keeping disruptive emotions and impulses in check) by the TSO. In other words, the TSC that is seen as competitive and has a TSO who speaks his mind on issues relating to TSC performance will improve TSC performance. With regard to the hypothesis, the null hypothesis can be rejected and the main hypothesis that there is a relationship between at least one linear combination of leader emotional competency and one linear combination of organisational culture dimensions on organisational performance can be accepted.

## 4.8    Summary of analysis

In chapter 4 the researcher performs the necessary analysis to answer the 5 empirical questions. The findings in respect to the above follows.

- **Empirical question 1**:    The data could be used for analysis purposes.
- **Empirical question 2**:    Factor analysis was possible and one construct was extracted for each of the instruments (ECI and OCP).
- **Empirical question 3**:    For the ECI instrument, it was found that of the six mandatory competencies required for a person in a leadership position, the leaders in this sample fell short in two critical areas namely: self confidence and empathy when compared to the HayGroup international norm. For the OCP instrument it was found that the culture in the TSCs were strong, proving Schein's (1985, 1992, 2004) assertions that leaders in the start-up/early growth phase of the organisational life cycle created strong cultures. Finally, regarding the performance data analysis, it was found that TSOs on average displayed good performance.
- **Empirical question 4**:    Of the six moderator variables which were finally used to test group differences, four namely, race of the leader, age of the leader, years of experience of the leader and number of employees reporting to the leader had a

statistically significant mean difference on some of the ECI dimensions, OCP dimensions and on organisational performance.

- **Empirical question 5**: A significant but weak relationship was reported between EQ and organisational performance and between organisational culture and organisational performance. A moderate/substantial relationship was shown between EQ and organisational culture.

In the next chapter the results obtained will be used to answer the research questions and discuss the theoretical and practical implications of the study.

## CHAPTER 5: DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

### 5.1    Introduction

The purpose of this research was to examine the dynamic relationships among a leader's emotional intelligence, organisation culture and organisational performance.   While there have been empirical examinations of a leader's emotional intelligence and organisational culture or with organisational performance, this is the first study to examine the linkages among all three constructs.   These linkages were conceptualized by drawing upon the seminal work of Schein (1983) in which he argued that leaders have to create a strong organisational culture in the early stages of an organisation in order for it to be successful (perform well).   Schein identified primary and secondary mechanisms through which a leader creates the organisation culture.   Building from this argument and the literature on emotional intelligence which suggests that a leader's emotional intelligence has a powerful effect on followers, it was hypothesized that a leader's emotional intelligence contributes to the creation of a strong culture.   Thus, a conceptual model was built and examined systematically through a variety of empirical and analytical methods.   The interest was in illuminating the dynamic relationships among these three important organisational constructs and hence a variety of statistical techniques were employed to provide a detailed understanding of the relationships.   One of the challenges was finding an appropriate sample to test the relationships.   The model was tested in 118 units of a large company.    These units were used as proxies of organisations in the early stages of their life cycle since all had only been existence since 1997 and the majority had retained the same leader since inception.

## 5.2    Empirical findings

### 5.2.1    Emotional intelligence

#### 5.2.1.1    Self-awareness cluster

There were interesting differences within the research sample compared to normative results reported by the Haygroup. The three competencies in the self-awareness cluster (**emotional awareness, accurate self assessment, self-confidence)** are mandatory and must all be present (HayGroup, 2005a: 4). Clearly, **self-confidence** (M=3.768) which is a sense of one's self worth and capabilities, rates lower than the norm (M=4) in this study. This was significant in that the people rating the TSOs perceive them to lack self confidence, whereas the TSOs rating themselves see themselves as oozing with self-confidence. TSOs rated themselves higher on all dimensions of the ECI than the 'total other' (which is the average of the FSAM, FSE and staff) and higher on 16 of the 18 ECI norm scores.   Reviewing Table G3 in Appendix G and the discussion on the effects of the moderator variable on the ECI below, highlights that there was also a statistically significant mean difference between the black and white race groups on the self-confidence dimension, with the white race group scoring higher than their black counterparts on this dimension. On further analysis, the white group actually meets the norm requirements for this competency and it is only the black group that are below this norm.

According to HayGroup (2005a) the positive impact of the self-confidence competence on organisational performance has been shown in a variety of studies. Among supervisors, managers and executives, a high degree of self confidence distinguishes the best from the average performers (Boyatzis, 1982). Among 112 entry-level accountants, those with the highest sense of self-efficacy, a form of self confidence, were rated by their supervisors ten years later as having superior performance. The level of self-confidence was in fact a stronger predictor of organisational performance than the level of skill or previous training (Saks, 1995). This maybe relevant to the findings that black TSOs in the study had lower performance appraisal scores than their white counterparts. However, further research is needed to examine these results. There is a large body of research that shows persistent race effects in job performance evaluations (Roth, Huffcutt & Bobko, 2003; Roberson & Block, 2001; Greenhaus, Parasuramen & Wormly, 1990). Although racial group differences

in job performance ratings might reflect racial prejudice, they might also be accurate, reflecting actual racial group differences in average performance. It must also be kept in mind that racial group differences in performance may be due to differential organisational experiences of blacks in South African organisations and the legacy of apartheid. Studies of black managers in South Africa suggest they face a number of obstacles and challenges (Luhabe, 2002).

### 5.2.1.2 Self-management cluster

Self-management refers to managing one's internal states, preferences, resources, and intuition (HayGroup, 2005a). Leaders seem to satisfy the requirements for the self-management cluster when compared to the norm. TSOs on average are perceived to manage their internal states, preferences, resources and intuition.

### 5.2.1.3 Social awareness cluster

The social awareness cluster is made up of 3 competencies (**empathy, organisational awareness and service orientation**). In this cluster, empathy is mandatory. The '**total other**' mean score for empathy (M=3.6314) is less than the norm (M=4). The TSOs are perceived to lack empathy. Empathy competence gives people an astute awareness of others' emotions, concerns and needs. The empathic individual can read emotional currents, picking up on nonverbal cues such as tone of voice or facial expressions. Empathy requires self awareness; our understanding of others' feelings and concerns flows from awareness of our own feeling. This sensitivity to others is critical for superior job performance whenever the focus is on interactions with people (Goleman, 2001). For instance, physicians who are better at recognising emotions in patients are more successful than their less sensitive colleagues at treating them (Friedman & DiMatteo, 1982). Organisational awareness and service orientation are alternate manifestations of each other, thus a person must have one or the other. Organisational awareness tends to be used in higher level management or executive positions where understanding and navigating the organisation is critical for success. Service orientation tends to be important in positions relating directly to customers external or internal (Jacobs, 2001). The study sample is taken from a service sector and

therefore making the service orientation competency more important. The '**total other**' mean score for service orientation (M=3.940) is only slightly less than the norm (M=4).

### 5.2.1.4   Relationship management cluster

Relationship management concerns the skill or adeptness at inducing desirable responses in others (HayGroup, 2005a). Leaders seem to satisfy the requirements of this cluster when compared to the norm. TSOs on average are perceived to have the necessary skills and adeptness at inducing desirable responses in their staff.

### 5.2.2   Moderator variables applied to ECI using t-Test

There was a statistically significant mean difference between 3 of the six moderator variables (Figure 4.3) namely
- Race of the TSO
- Years in the TSO position
- Age of the TSO

When racial differences (white and black) were tested using a t-Test, it was found that of the 18 ECI dimensions, there was a statistically significant mean difference between the black and white managers scores with the white managers scoring higher on 14 of the ECI dimensions. In other words, the white managers are perceived as scoring higher on 14 of the ECI dimensions than their black counterparts. The literature on demographic differences in EQ is scant. It is important for the reader to understand that the South African dispensation is new and only 12 years old. In an attempt to address the equity gaps between black and white race groups created by apartheid, affirmative action has been strategised and accepted as necessary to address the inequities of the past dispensation which systematic set out to deprive black people. However, in affirming the black people to the position of TSO, it has been assumed that there are no mean differences between the two race groups and this is clearly not the case.

When age of the TSO was applied using the t-Test, it was found that of the 18 ECI dimensions, there was a statistical significant mean difference between the age of the TSO <

41 years and age of the TSO ≥ 41 years, with age group <41 years scoring higher on 2 of the 18 ECI dimensions namely optimism and Change catalyst. When looking at the age of the TSOs, TSOs that are younger than 41 years of age are perceived to be more optimistic (persistence in pursuing goals despite obstacles and setbacks) and change catalysts (initiating or managing change). Also, TSOs with ≥6 years of experience are perceived as taking initiative (readiness to act on opportunities). The researcher independently met with the senior managers within the organisation, considered to be experts in the organisation and verified that these findings are very likely to be true.

Similarly, when applying the number of years that a TSO has served in the TSO position (< 6 years or ≥6 years), there was a statistically significant mean difference between the two groups with the group with ≥ 6 years work experience in the position of TSO scoring high on the initiative dimension of the ECI. The number of employees reporting to the TSO's; qualification of the TSO and the number of years the TSO works for the organisation have no group mean differences with the 18 dimensions of the ECI. On the dimension of qualifications this result has been support by the research of HayGroup (2005b) that beyond a certain threshold level (IQ) is less important than EQ.

### 5.2.3   What EQ dimensions distinguish effective leaders?

This section answers the secondary research question, **'What emotional intelligence dimensions distinguish effective leaders?'** The combination of literature and the analysis done in the ECI section above helps answer this question. There are six mandatory competencies necessary for effective leadership (HayGroup, 2005a) namely emotional self-awareness, accurate self-assessment, self-confidence, emotional self-control, empathy and influence. Of the six mandatory competencies the TSOs scored significantly lower than the norm on **self-confidence** and **empathy**.

## 5.3    Organisational culture

The OCP instrument is used to measure seven culture dimensions and is also used to measure the strength of the organisation culture. The criteria for the measurement of culture strength has been defined in chapter 3 and will be repeated here. **Cmean** represents the mean scores of the seven dimensions of the OCP instrument.

0<1 is indicative of a very weak culture,

1< **Cmean**<2 is indicative of weak culture,

2<**Cmean**<3 is indicative of substantial culture,

3<**Cmean**<4 is indicative of strong culture,

4<**Cmean**<5 is indicative of very strong culture.

Rearranging the results of Table 4.10 in rank order shows the following:

- Performance orientation (M=3.585)
- Competitiveness (M=3.5074)
- Supportiveness (M=3.4825)
- Social responsibility (M=3.4507)
- Stability (M=3.3801)
- Emphasis on rewards (M=3.3288)
- Innovation (M=3.1887)

Applying the criteria for the measurement of culture strength shows that the TSC units have a strong culture for all the dimensions of the OCP (3<**Cmean**<4).  The organisational culture means for each of the dimensions ranges from 3.1887 to 3.585.

This section answers the secondary research question, **'What are the perceptions of the leaders and their staff regarding the strength of the organisational culture as measured by the organisational culture profile (OCP) in their organisation?'** To answer the first question, the leaders are perceived to create on average a strong culture. This is seen in the mean values of each OCP dimension being in the range of (3<**Cmean**<4).  This also confirms Schein's (1985, 1992, 2004) assertion that leaders in the start-up early growth phase of their organisational life cycle, create strong cultures. While the mean is reported, it

should be noted that there was variation in the cultures among the units. In other words, it was not a case of corporate culture dictating culture at the lower levels.

## 5.3.1 Moderator variables applied to organisational culture using t-Test

There was a statistically significant mean difference between two of the six moderator variables (Figure 4.5 below) namely:

- Race of the TSO
- Years in the TSO position

When racial differences (white and black) were tested using a t-Test, it was found that of the seven OCP dimensions, there was a statistically significant mean difference between the TSC led by black and white managers with the white led managers scoring higher on 5 of the OCP dimensions listed in Figure 4.4. Applying the number of years that a leader (TSO) has served in the leadership (TSO position, < 6 years or ≥6 years), there was a statistically significant mean difference between the two groups with the group with ≥ 6 years work experience in the leadership position scoring high on the competitiveness dimension of the OCP. Similarly, applying the number of employees reporting to the TSO (<25 people, ≥25 people), there was a statistically significant mean difference between the two groups with the group < 25 people scoring high on the dimensions of stability and social responsibility of the OCP.

While it is perceived that TSC led by white managers are seen to be more performance oriented, socially responsible, supportive, competitive and innovative than the TSC led by their black counterparts. Also, TSC that are led by TSOs who have worked for more than 6 years in the position as TSOs are seen to be competitive. Similarly, TSCs with less than and equal to 25 staff are perceived to be more socially responsible and stable.

Age of the TSO, qualifications of the TSO and the number of years the TSO has been employed by the organisation have no group mean difference scores with the seven dimensions of OCP.

## 5.4    Organisational performance

Table E11, in Appendix E, reflects the descriptive statistics for the organisational performance variable. The TSO performance appraisal scores provided the best correlation scores to the 18 dimensions of ECI and the 7 dimensions of the OCP. The TSC competition scores were statistically significant but practically insignificant because the magnitude of the scores was negligible and was therefore ignored. The organisation in which the study was undertaken defined performance with the following criteria:

**PA score** <1 = Floor (indicates bad performance)

1<**PA score** <2 = Kick-in (indicates poor performance)

2<**PA score** <3 = Norm (indicates acceptable performance)

3< **PA score** < 4 = Stretch (indicates good performance)

4<**PA score** < 5 = Ceiling (excellent performance)

Applying the above criteria to the TSO performance appraisal mean score (M=3.6828), indicates that the average performance of 117 TSOs is perceived to be good.

## 5.4.1    Moderator variables on organisational performance

There was a statistically significant mean difference between three of the six moderator variables (Figure 4.7) namely

- Race of the TSO
- Years in the TSO position
- Age of the TSO

When racial differences (white and black) were tested using a t-Test on performance (TSO PA score), there was a statistically significant mean difference between the black and white managers. The white managers had higher performance scores than their black counterparts.

When age of the TSO was tested, there was a statistically significant mean difference between the age of the TSO < 41 years and age of the TSO≥ 41 years, with age group >41 years scoring higher on organisational performance.

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Similarly, when applying the number of years that a TSO has served in the TSO position (< 6 years or ≥6 years), there was a statistically significant mean difference between the two groups with the group with ≥ 6 years work experience in position scoring higher on the organisational performance.

White TSOs receive higher performance ratings than black TSOs; TSOs who are older than 41 years of age and those TSOs that have worked longer than 6 years in the position of TSO had higher performance scores. The researcher presents the results with serious reservations about the performance data used in the study. Two sets of performance data namely, the TSC competition scores, which measures 21 KPIs, and the TSO performance appraisal scores, which uses the same set of 21 KPIs to assess the TSO's performance. Correlation studies between the two performances KPIs were meant to provide a strong correlation between the two scores. The results showed that there was a correlation between the two performance scores, however it was practically insignificant (magnitude of the correlation values are small). This raises concerns that the 21 KPIs are not measuring the actual performance of the organisation and that the performance appraisal scores were inflated and do not measure performance as was intended by the balance score card principles. The researcher met with the senior organisational representatives and questioned the results. It was confirmed that management had been concerned with the TSC competition data and accepted that TSO performance scores could be inflated. There seemed to be a misalignment between the organisational goals, organisational KPIs and the measurement of individual performance scores. This has been a recognized fact by management within the organisation studied, and during the course of the study they initiated and project that was going to correct this misalignment.

## 5.5   EQ and organisational performance

The relationship between EQ and organisational performance was analysed using stepwise multiple regression (see section 4.7.2.6 for detailed analysis).   An adjusted $R^2$ of approximately 17% was therefore obtained, in other words 17% of the variation in the TSO's performance appraisal scores could be explained by the independent variables selected by the step-wise procedure. This was considered a weak relationship. The independent ECI variables entered into the model were **self-confidence** (Tot_EQ3) and **emotional self-**

**control** (Tot_EQ4). The puzzling result is that the beta coefficient for emotional self-control was negative. What these results mean is that leaders who are self-confident, who are honest about their feelings and who make their feeling known are likely to improve the performance of the TSC and therefore their own performance appraisal ratings. The researcher met with senior managers considered to be most knowledgeable experts in the area and discussed the results. These senior managers believed that the TSC environment is largely a task environment that requires instructions to be given. They also believed that self-confidence in this environment comes from the leader (TSO) having had sufficient experience in the environment to be able to give instructions to subordinates, knowing exactly what needs to be done and how it should be done and a leader who is able to 'walk his talk' by demonstrating what needs to be done. They also believed that these competencies were obtained with time and on the job training.

This section answers the secondary research questions, **'What competencies of emotional intelligence contribute to organisational performance?',** and, **'Is emotional intelligence of the leader a predictor or organisational performance?'** To answer the first question, the two competences namely self confidence and the emotional self-confidence are seen to contribute to organisational performance. The answer to the second question is that there is a significant but weak relationship between EQ and organisational performance. It has been argued above that this weak relationship may be due to the poor quality of the organisational performance data used in the study. Future studies will need to identify robust measures of organisational performance. The challenge of finding valid and reliable organisational performance measures in organisation studies research has been noted by other scholars, especially studies in leadership (Yukl, 2002).

## 5.6 Organisational culture and organisational performance

The relationship between organisational culture and organisational performance was analysed using stepwise multiple regression (see section 4.7.2.7 for detailed analysis). An adjusted $R^2$ of approximately 16% was therefore obtained, in other words 16% of the variation in the TSOs performance appraisal scores could be explained by the independent variables selected by the step-wise procedure. This was considered a weak relationship. The

independent OCP variable entering the model was **competitiveness** (Tot_C6).   The competitiveness dimension of the OCP was made up of the following properties:

- Achievement orientation
- An emphasis on quality
- Being distinctive – being different from others
- Being competitive

In other words, a culture of achievement orientation, an emphasis on quality, being distinctive and high on competitiveness would lead to improvement of TSC performance.

This section answers the secondary research question, **'What is the relationship between organisational culture and organisational performance?'** There is a significant but weak relationship between organisational culture and organisational performance and the organisational culture dimension, competitiveness is seen to contribute to organisational performance. Again, the researcher argues that this weak relationship could be the result of the quality of the organisational performance data used in the analysis.


## 5.7   EQ and organisational culture

The results of the canonical analysis can be reviewed in section 4.7.1.1. Only the first two canonical correlations were significant; therefore, no attempt was made to interpret the meaning of the others variates. The first and second variate canonical correlations are 0.832010 and 0.766363 (Table 4.18). This indicates that approximately 69% and 59% of the variation in the criterion factors was explained by the predictor factors – significant at the 0.01 level respectively.  This represents the optimal relationship between linear combinations of the two sets of variables.

The redundancy (Tables 4.21 and 4.22) measures between the two sets of variables gave a less inflated picture of the overall relationships between the variables, themselves. The redundancy of the criterion set, given the predictor set for the for the first and second canonical variates were 0.4366 and 0.1396 respectively; the redundancy of the predictor set, given the criterion set for the first and second canonical variates are 0.2310 and 0.1111 respectively. These redundancies show that a fair proportion of the variance in each set of the individual variables was explained by the other set's canonical variates.

The factor loadings suggested that the criterion factor was a function of (performance orientation, social responsibility, supportiveness, competitiveness and innovation) for the first canonical variate and a function of (emphasis on rewards and stability) for the second canonical variate.

The predictor factor loadings suggested that organisational culture was strongly related to (achievement orientation, self confidence, developing others, initiative, inspirational leadership, service orientation, adaptability, influence, conflict management, transparency emotional self awareness and change catalyst) for the first predictor canonical variate and a function of (empathy, teamwork and collaboration, emotional self control, optimism, accurate self assessment) for the second predictor canonical variate.  An attempt was made to label the two variate sets, however this proved to be difficult. The first variate set characterises the emotional competencies of a leader like Richard Branson (entrepreneurial, transformational and charismatic) and his organisation Virgin. The second variate set characterise the emotional competencies of your typical parastatal type leader who is concerned with maintaining stability and not upsetting the status quo.

This section answers the secondary research question, **'What is the relationship between emotional intelligence and organisational culture?'** There is a significant but substantial relationship between the ECI dimensions and the OCP dimensions.

## 5.8   EQ and organisational culture on organisational performance

The relationship between EQ and organisational culture on organisational performance was analysed using stepwise multiple regression (see section 4.7.2.8 for detailed analysis).  An adjusted $R^2$ of approximately 19% was therefore obtained, in other words 19% of the variation in the TSO's performance appraisal scores could be explained by the independent variables selected by the step-wise procedure. The independent OCP variable entering the model was **competitiveness** (Tot_C6) and the independent ECI variable entering the model was the lack of **emotional self-control** (Tot_EQ4).  The competitiveness dimension of the OCP was made up of the following properties:
- Achievement orientation
- An emphasis on quality

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- Being distinctive – being different from others
- Being competitive

In other words, in terms of Schein's (1992, 2004) work, these results suggested that a leader who embeds culture through emphasis on achievement, quality, being distinctive and competitiveness created a culture of competitiveness.

Emotional self-control competence manifested largely as the absence of distress and disruptive feelings. Signs of this competence include being unfazed in stressful situations or dealing with a hostile person without lashing out in return. Among small business owners and employees, those with a stronger sense of control over not only themselves but the events in their lives were less likely to become angry or depressed when faced with job stresses or to quit (Rahim & Psenicka, 1996).

This section answers the major research question; **'What is the relationship among leader emotional intelligence, organisational culture and organisational performance?'** The study has shown that there is a significant, but weak relationship among the three constructs.

## 5.9    Study contributions

The major contribution of this study is that it is the first empirical test of the relationships among EQ, organisational culture and organisational performance. While these relationships have been measured in a two-way relationship, there is no research that has attempted to establish these linkages especially in the context with Schein's (1983) seminal theory that organisational culture strength is relevant in the start-up/early growth phase of an organisation and this culture creation process is largely in the hands of the leader. While some work on the linkage between EQ and organisational performance was undertaken by Higgs and McGuire (2001), in an exploratory study, this study contributed to this body of knowledge. Race effects on the ECI instrument have been looked at by the HayGroup (2005a), however, it was done on college students and not in the work environment, where the instrument was intended to be used. On a practical level, the implications of the findings of this study suggest the development of a leader's EQ is important in establishing a strong organisational culture and therefore improved organisational performance which according to Schein (1985, 1992, 2004) is essential in the early start-up growth phase of its organisational

life cycle. Currently, in South Africa, 95% of the registered companies are in the start-up early growth phase of their organisational life cycles (Naude & Krugell, 2003). It is also recognised from literature that the growth of any economy is largely dependent on the survival and success of the start-up early growth companies.  The extent to which a leader is successful in building a strong culture will positively influence organisational performance and the ability of the organisation to progress and grow.

## 5.10  Study limitations

The organisation used in the study made use of the balanced scored card (BSC) developed by Kaplan and Norton (1992, 2004). The BSC system is made up of four perspectives and it is optimally used use when the customer, internal, innovation and learning and financial dimensions are relevantly cascaded through each layer of the organisation. The BSC creates an impetus for the employees' behaviour to align with the objectives at each layer and generate the necessary resources, skills actions, learning and feedback to successfully perform, ensuring that such a cumulative effort delivers organisational strategy. The relationship between EQ and organisational performance and between culture and organisational performance has been shown to be weak a relationship. The initial correlation between the TSC performance scores and the TSO performance showed a significant but very weak relationship. This was a clear indication that there was a misalignment between strategy and the measurement of performance within this organisation used in this study.

The second critical limitation of the study is the sample size. In this study only the minimum sample size was used to test the relationships. Future research needs to increase the sample size in order to make the results more generalisable. However, in support of the contribution of the present study the difference of finding an appropriate sample to meet the required data collection needs must be recognised. A test of Schein's (1992, 2004) theory requires that early start-up organisations have access to a leader and others who can complete a 360 degree instrument as well as performance data. The sample used in this study met this requirement.

The third limitation of the study was the use of a single company. The reason for choosing a single company was that when testing theory there was a need to limit the number of control

variables (Dermer & Hoch, 1999; Mitchell & Jolley, 2007). The choice of a single company kept vision, strategy, structure, systems, processes, HR practices, and performance constant. This allowed the researcher to test the empirical relationship between EQ, organisational culture and organisational performance. Hence, the research design strived for internal validity which did limit external validity. Future studies need to look more broadly across multiple industries before the results can be made more generalisable and the requirements of external validity can be met.

## 5.11  Recommendations for further research

It shall be understood that the following further research topics arise from the empirical findings of this research undertaken.  The topics are:

o   Selection criteria for leaders.
      Ideally any future study in this area should be strict in the choice of leader to be studied.
      The leaders chosen should be the founder/entrepreneur.

o   Replication of this study in multiple industries.
      This study needs to be done in multiple industries and also with a cross sectional sample
      from multiple industries before the results can be generalised.

o   Review of organisational performance measurement.
      In this study the performance data used in the analysis was sourced independently from
      the organisations human resources department. During the analysis it was realised that
      the quality of the performance data was questionable. It is therefore recommended that
      the performance data be collect as part of the study.

o   Racial differences in EQ.
      Racial studies in different countries and in different socio-economic backgrounds need to
      be undertaken.

o   EQ and national culture.
      Further studies on the effects of national culture on EQ need to be undertaken.

The researcher has highlighted topics for further research.

## 5.12 Conclusions

The study met the research objectives and addressed the problem statement. In chapter one, the investigations as well as the actuality of the study were discussed. The aim and method of the study came under investigation. The study argued the need for the empirical relationship of all three variables EQ, organisational culture and organisational performance to be investigated. This chapter highlights the components necessary to rejuvenate the performance of organisations in the early growth /start-up phases of the organisational life cycle. In South Africa, 95% of the companies are in the in the early start-up/growth phase of their organisational life cycle (Naude and Krugell, 2003). Therefore, the results of this study could be used to improve the performance and the ultimate survival of these organisations.

This study suggests there is a relationship between EQ, organisational culture and organisational performance. Leaders must have a high EQ in order to improve performance in the workplace. Leaders play a critical role in creation of a strong organisational culture which results improved organisational performance. However, this is a complex relationship that needs further validation.

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# APPENDIX A: THE TECHNICAL SERVICES OFFICER (TSO) QUESTIONNAIRE

This questionnaire is made up of three sections i.e. **General, Emotional Competency Inventory (ECI) and the Organisational Culture Profile (OCP).**

The General section is self explanatory and should be easy to fill in. This section will take you 5 minutes to complete.

- **Instructions to complete the Emotional Competency Profile**

The following statements reflect work-related behaviours and relationships. Think about the interactions you've had with your co-workers (particularly those that you nominated to rate you) over the last several months and use the scale below to indicate how frequently you've shown each behaviour listed below.

It should take you less than 20 minutes to complete this questionnaire. Each item in the questionnaire describes a work-related behaviour. Think about how you've behaved over the previous several months. Then, use the scale below to indicate how frequently you have exhibited each behaviour.

**An example survey item:**

| Item Number | Please carefully respond to each survey item below. You: | Never | Rarely | Sometimes | Often | Consistently | Don't know |
|---|---|---|---|---|---|---|---|
| 72 | Listen to others carefully when they are speaking | ○ | ○ | ○ | ○ | ○ | ○ |

In the above example, fill in the circle that best indicates how frequently you exhibited this behaviour. For example, if you never carefully listen to others when they are speaking then fill in, "Never." If you infrequently listen carefully to others, then fill in, "Rarely." If you listen carefully to others about half of the time, then fill in "Sometimes." If you listen carefully most of the time, then fill in "Often" and if you listen carefully very frequently (i.e., all the time or nearly all the time) and consistently, then fill in, "Consistently."

Please try to respond to all of the items. If for some reason an item does not apply to you or you have not had an opportunity to exhibit any particular behaviour then choose, "Don't know."

- **Instructions to complete the Organisational Culture Profile**

Indicate by filling in the circle that best indicates the extent to which you perceive each organisational culture item is characteristic of your organisation and its values. In filling each line item answer the question "**what extent is your TSC recognized for its…….?"** It should take you less than 20 minutes to complete this part of the questionnaire.

**An example survey item:**

| No. | Organisational culture items | Not at all | Small | Moderately | Large | Very Large |
|---|---|---|---|---|---|---|
| 1 | Stability | ○ | ○ | ○ | ○ | ○ |

In the above example, fill in the circle that best indicates to **what extent is your organisation recognised for its stability.** Please respond to all items.

**Thank you for your participation.**

**General section**

| Name of (TSO)? | |
|---|---|

| Name of (TSC)? | |
|---|---|

| Age of TSO | <25 | 26 to 30 yrs | 31 to 35 yrs | 36 to 40 yrs | 41 to 45 yrs | 46 to 50 yrs | 51 to 55 yrs | 56 to 60 yrs | >60 yrs |
|---|---|---|---|---|---|---|---|---|---|

| Male | | Female | |
|---|---|---|---|

| Race | Black | White | Coloured | Asian | Other |
|---|---|---|---|---|---|

| Educational qualifications of (TSO)? | |
|---|---|

| Number of years in (TSO) position? | Less than 1 yr | 1 to 2 yrs | 2 to 3 yrs | 3 to 4yrs | 4 to 5 yrs | Greater than 6 yrs |
|---|---|---|---|---|---|---|

| Number of years employed by the organisation? | Less than 1 yr | 1 to 2 yrs | 2 to 3 yrs | 3 to 4yrs | 4 to 5 yrs | Greater than 6 yrs |
|---|---|---|---|---|---|---|

| Number of employees in your TSC reporting to you? | Less than 10 people | 11 to 15 people | 16 to 20 people | 21 to 25 people | 26 to 30 people | >30 people |
|---|---|---|---|---|---|---|

| How long has your TSC being in existence (years) for? | Less than 1 yr | 1 to 2 yrs | 2 to 3 yrs | 3 to 4yrs | 4 to 5 yrs | Greater than 6 yrs |
|---|---|---|---|---|---|---|

## Emotional competency inventory (ECI)

| Item Number | Please carefully respond to each survey item below.  You: | Never | Rarely | Sometimes | Often | Consistently | Don't know |
|---|---|---|---|---|---|---|---|
| 1 | Recognizes the situations that arouse strong emotions in yourself | ○ | ○ | ○ | ○ | ○ | ○ |
| 2 | Has mainly positive expectations | ○ | ○ | ○ | ○ | ○ | ○ |
| 3 | Initiates actions to create possibilities | ○ | ○ | ○ | ○ | ○ | ○ |
| 4 | Anticipates obstacles to a goal | ○ | ○ | ○ | ○ | ○ | ○ |
| 5 | Is reluctant to change or make changes | ○ | ○ | ○ | ○ | ○ | ○ |
| 6 | Has sense of humour about oneself | ○ | ○ | ○ | ○ | ○ | ○ |
| 7 | In a group, encourages others' participation | ○ | ○ | ○ | ○ | ○ | ○ |
| 8 | Gives constructive feedback | ○ | ○ | ○ | ○ | ○ | ○ |
| 9 | Adapts ideas based on new information | ○ | ○ | ○ | ○ | ○ | ○ |
| 10 | Sets measurable and challenging goals | ○ | ○ | ○ | ○ | ○ | ○ |
| 11 | Solicits others' input | ○ | ○ | ○ | ○ | ○ | ○ |
| 12 | Takes calculated risks to reach a goal | ○ | ○ | ○ | ○ | ○ | ○ |
| 13 | Believes the future will be better than the past | ○ | ○ | ○ | ○ | ○ | ○ |
| 14 | Gives directions or demonstrations to develop someone | ○ | ○ | ○ | ○ | ○ | ○ |
| 15 | Looks for feedback, even if hard to hear | ○ | ○ | ○ | ○ | ○ | ○ |
| 16 | Reflects on underlying reasons for feelings | ○ | ○ | ○ | ○ | ○ | ○ |
| 17 | Makes self available to customers or clients | ○ | ○ | ○ | ○ | ○ | ○ |
| 18 | Publicly states everyone's position to those involved in a conflict | ○ | ○ | ○ | ○ | ○ | ○ |
| 19 | Relates well to people of diverse backgrounds | ○ | ○ | ○ | ○ | ○ | ○ |
| 20 | Makes work exciting | ○ | ○ | ○ | ○ | ○ | ○ |
| 21 | Is defensive when receiving feedback | ○ | ○ | ○ | ○ | ○ | ○ |
| 22 | Brings up ethical concerns | ○ | ○ | ○ | ○ | ○ | ○ |
| 23 | Listens attentively | ○ | ○ | ○ | ○ | ○ | ○ |
| 24 | Stays composed and positive, even in trying moments | ○ | ○ | ○ | ○ | ○ | ○ |
| 25 | Leads by example | ○ | ○ | ○ | ○ | ○ | ○ |
| 26 | Acts on own values even when there is a personal cost | ○ | ○ | ○ | ○ | ○ | ○ |
| 27 | Knows how their feelings effect their actions | ○ | ○ | ○ | ○ | ○ | ○ |
| 28 | Airs disagreements or conflicts | ○ | ○ | ○ | ○ | ○ | ○ |
| 29 | Inspires people | ○ | ○ | ○ | ○ | ○ | ○ |
| 30 | Applies standard procedures flexibly | ○ | ○ | ○ | ○ | ○ | ○ |
| 31 | Has "presence" | ○ | ○ | ○ | ○ | ○ | ○ |
| 32 | Monitors customer or client satisfaction | ○ | ○ | ○ | ○ | ○ | ○ |
| 33 | In a conflict, finds a position everyone can endorse | ○ | ○ | ○ | ○ | ○ | ○ |
| 34 | Engages an audience when presenting | ○ | ○ | ○ | ○ | ○ | ○ |
| 35 | States need for change | ○ | ○ | ○ | ○ | ○ | ○ |

| Item Number | Please carefully respond to each survey item below.  You: | Never | Rarely | Sometimes | Often | Consistently | Don't know |
|---|---|---|---|---|---|---|---|
| 36 | Advocates change despite opposition | ○ | ○ | ○ | ○ | ○ | ○ |
| 37 | Gets impatient or shows frustration | ○ | ○ | ○ | ○ | ○ | ○ |
| 38 | Recognizes specific strengths of others | ○ | ○ | ○ | ○ | ○ | ○ |
| 39 | Understands informal structure in the organisation | ○ | ○ | ○ | ○ | ○ | ○ |
| 40 | Behaves calmly in stressful situations | ○ | ○ | ○ | ○ | ○ | ○ |
| 41 | Personally leads change initiatives | ○ | ○ | ○ | ○ | ○ | ○ |
| 42 | Gets support from key people | ○ | ○ | ○ | ○ | ○ | ○ |
| 43 | Understands the organisation's unspoken rules | ○ | ○ | ○ | ○ | ○ | ○ |
| 44 | Keeps their promises | ○ | ○ | ○ | ○ | ○ | ○ |
| 45 | Understands historical reasons for organisational issues | ○ | ○ | ○ | ○ | ○ | ○ |
| 46 | Takes personal responsibility for meeting customer needs | ○ | ○ | ○ | ○ | ○ | ○ |
| 47 | Acknowledges mistakes | ○ | ○ | ○ | ○ | ○ | ○ |
| 48 | Presents self in an assured manner | ○ | ○ | ○ | ○ | ○ | ○ |
| 49 | Handles unexpected demands well | ○ | ○ | ○ | ○ | ○ | ○ |
| 50 | Articulates a compelling vision | ○ | ○ | ○ | ○ | ○ | ○ |
| 51 | Is not politically savvy at work | ○ | ○ | ○ | ○ | ○ | ○ |
| 52 | Seeks ways to improve performance | ○ | ○ | ○ | ○ | ○ | ○ |
| 53 | Acknowledges own strengths and weaknesses | ○ | ○ | ○ | ○ | ○ | ○ |
| 54 | Can see things from someone else's perspective | ○ | ○ | ○ | ○ | ○ | ○ |
| 55 | Believes oneself to be capable for a job | ○ | ○ | ○ | ○ | ○ | ○ |
| 56 | Cuts through red tape or bends rules when necessary | ○ | ○ | ○ | ○ | ○ | ○ |
| 57 | Stays positive despite setbacks | ○ | ○ | ○ | ○ | ○ | ○ |
| 58 | Develops behind-the-scenes support | ○ | ○ | ○ | ○ | ○ | ○ |
| 59 | Persuades by appealing to peoples' self interest | ○ | ○ | ○ | ○ | ○ | ○ |
| 60 | Acts impulsively | ○ | ○ | ○ | ○ | ○ | ○ |
| 61 | Does not cooperate with others | ○ | ○ | ○ | ○ | ○ | ○ |
| 62 | Doubts their own ability | ○ | ○ | ○ | ○ | ○ | ○ |
| 63 | Avoids conflicts | ○ | ○ | ○ | ○ | ○ | ○ |
| 64 | Matches customer or client needs to services or products | ○ | ○ | ○ | ○ | ○ | ○ |
| 65 | Establishes and maintains close relationships at work | ○ | ○ | ○ | ○ | ○ | ○ |
| 66 | Hesitates to act on opportunities | ○ | ○ | ○ | ○ | ○ | ○ |
| 67 | Provides on-going mentoring or coaching | ○ | ○ | ○ | ○ | ○ | ○ |
| 68 | Aware of own feelings | ○ | ○ | ○ | ○ | ○ | ○ |
| 69 | Changes overall strategy, goals, or projects to fit the situation | ○ | ○ | ○ | ○ | ○ | ○ |
| 70 | Seeks information in unusual ways | ○ | ○ | ○ | ○ | ○ | ○ |
| 71 | Is attentive to peoples' moods or nonverbal cues | ○ | ○ | ○ | ○ | ○ | ○ |
| 72 | Learns from setbacks | ○ | ○ | ○ | ○ | ○ | ○ |

## Organisational Culture Profile (OCP)
### Indicate by filling in the circle that best indicates the extent to which you perceive each organisational culture item is characteristic of your TSC and its values.

| No. | Organisational culture items | Not at all | Small | Moderately | Large | Very Large |
|---|---|---|---|---|---|---|
| | **To what extent is your TSC recognised for its…………………..…….?**. | | | | | |
| | | | | | | |
| 1 | Stability | ○ | ○ | ○ | ○ | ○ |
| 2 | Being people oriented | ○ | ○ | ○ | ○ | ○ |
| 3 | Being innovative | ○ | ○ | ○ | ○ | ○ |
| 4 | Fairness | ○ | ○ | ○ | ○ | ○ |
| | | | | | | |
| 5 | Being calm | ○ | ○ | ○ | ○ | ○ |
| 6 | Being reflective | ○ | ○ | ○ | ○ | ○ |
| 7 | Achievement orientation | ○ | ○ | ○ | ○ | ○ |
| 8 | Quick to take advantage of opportunities | ○ | ○ | ○ | ○ | ○ |
| | | | | | | |
| 9 | Having high expectations for performance | ○ | ○ | ○ | ○ | ○ |
| 10 | High pay for good performance | ○ | ○ | ○ | ○ | ○ |
| 11 | Security of employment | ○ | ○ | ○ | ○ | ○ |
| 12 | Enthusiasm for the job | ○ | ○ | ○ | ○ | ○ |
| | | | | | | |
| 13 | An emphasis on quality | ○ | ○ | ○ | ○ | ○ |
| 14 | Risk taking | ○ | ○ | ○ | ○ | ○ |
| 15 | Being distinctive-different from others | ○ | ○ | ○ | ○ | ○ |
| 16 | Having a good reputation | ○ | ○ | ○ | ○ | ○ |
| | | | | | | |
| 17 | Being team oriented | ○ | ○ | ○ | ○ | ○ |
| 18 | Being results oriented | ○ | ○ | ○ | ○ | ○ |
| 19 | Having a clear guiding philosophy | ○ | ○ | ○ | ○ | ○ |
| 20 | Being competitive | ○ | ○ | ○ | ○ | ○ |
| | | | | | | |
| 21 | Sharing information freely | ○ | ○ | ○ | ○ | ○ |
| 22 | Being highly organized | ○ | ○ | ○ | ○ | ○ |
| 23 | Being socially responsible | ○ | ○ | ○ | ○ | ○ |
| 24 | Low conflict | ○ | ○ | ○ | ○ | ○ |
| | | | | | | |
| 25 | Opportunities for professional growth | ○ | ○ | ○ | ○ | ○ |
| 26 | Collaboration | ○ | ○ | ○ | ○ | ○ |
| 27 | Praise for good performance | ○ | ○ | ○ | ○ | ○ |
| 28 | Taking individual responsibility | ○ | ○ | ○ | ○ | ○ |

# APPENDIX B: THE FSAM AND FSE QUESTIONNAIRE

This questionnaire is made up of three sections i.e. **General, Emotional Competency Inventory (ECI) and the Organisational Culture Profile (OCP).**

The General section is self explanatory and should be easy to fill in. This section will take you 5 minutes to complete.
- **Instructions to complete the Emotional Competency Profile**

The following statements reflect behaviours that you may or may not have observed in the **Technical Service Officer (TSO)** you are rating. You will be asked to report on your experiences with this person. Please respond to all items by filling in the circle that is closest to your observation and experience with this person.

It should take you less than 20 minutes to complete this questionnaire. Each item in the questionnaire describes a work-related behavior. Think about your experiences with this individual over the previous 12 months. Then, use the scale below to indicate how frequently you have observed each behaviour.

**An example survey item:**

| Item Number | Please carefully respond to each survey item below.  You: | Never | Rarely | Sometimes | Often | Consistently | Don't know |
|---|---|---|---|---|---|---|---|
| 72 | Listen to others carefully when they are speaking | ○ | ○ | ○ | ○ | ○ | ○ |

In the above example, fill in the circle that best indicates how frequently you have observed this behaviour in the individual you are rating. For example, if the person you are rating never carefully listens to you when you are speaking then fill in, "Never." If he or she infrequently listens carefully to you, then fill in, "Rarely." If this person listens carefully to you about half of the time, then fill in "Sometimes." If you observe this most of the time, then fill in "Often" and if the person listens carefully very frequently (i.e., all the time or nearly all the time) and consistently, then fill in, "Consistently."

Please try to respond to all of the items. If for some reason an item does not apply to this individual or you have not had an opportunity to observe any particular behaviour then choose, "Don't know."

- **Instructions to complete the Organisational culture Profile**

Indicate by filling in the circle that best indicates the extent to which you perceive each organisational culture item is characteristic of the TSC you are rating and its values. In filling each line item answer the question "**what extent is the TSC you are rating recognized for its…….?"** It should take you less than 20 minutes to complete this part of the questionnaire.

**An example survey item:**

| No. | Organisational culture items | Not at all | Small | Moderately | Large | Very Large |
|---|---|---|---|---|---|---|
| 1 | Stability | ○ | ○ | ○ | ○ | ○ |

In the above example, fill in the circle that best indicates to **what extent is your organisation recognised for its stability.** Please respond to all items.

**Thank you for your participation.**

**General (FSAM and FSE)**

| Name of Survey Participant? (optional) | |
|---|---|
| | |

| Name of TSO you are rating? | |
|---|---|
| | |

| Name of TSC you are rating? | |
|---|---|
| | |

| What is your current designation/position with the TSC? | FSE | FSAM |
|---|---|---|
| | | |

| For how long have you worked in your current designation/position (years)? | Less than 1 yr | 1 to 2 yrs | 2 to 3 yrs | 3 to 4yrs | 4 to 5 yrs | Greater than 6 yrs |
|---|---|---|---|---|---|---|

| How long have you work for the organisation (years)? | Less than 1 yr | 1 to 2 yrs | 2 to 3 yrs | 3 to 4yrs | 4 to 5 yrs | Greater than 6 yrs |
|---|---|---|---|---|---|---|

| How long have you been working with the current TSO (years)? | Less than 1 yr | 1 to 2 yrs | 2 to 3 yrs | 3 to 4yrs | 4 to 5 yrs | Greater than 6 yrs |
|---|---|---|---|---|---|---|

## Emotional competency inventory (ECI)

| Item Number | Please carefully respond to each survey item below. Your TSO (he/she): | Never | Rarely | Sometimes | Often | Consistently | Don't know |
|---|---|---|---|---|---|---|---|
| 1 | Recognizes the situations that arouse strong emotions in him/her | ○ | ○ | ○ | ○ | ○ | ○ |
| 2 | Has mainly positive expectations | ○ | ○ | ○ | ○ | ○ | ○ |
| 3 | Initiates actions to create possibilities | ○ | ○ | ○ | ○ | ○ | ○ |
| 4 | Anticipates obstacles to a goal | ○ | ○ | ○ | ○ | ○ | ○ |
| 5 | Is reluctant to change or make changes | ○ | ○ | ○ | ○ | ○ | ○ |
| 6 | Has sense of humour about oneself | ○ | ○ | ○ | ○ | ○ | ○ |
| 7 | In a group, encourages others' participation | ○ | ○ | ○ | ○ | ○ | ○ |
| 8 | Gives constructive feedback | ○ | ○ | ○ | ○ | ○ | ○ |
| 9 | Adapts ideas based on new information | ○ | ○ | ○ | ○ | ○ | ○ |
| 10 | Sets measurable and challenging goals | ○ | ○ | ○ | ○ | ○ | ○ |
| 11 | Solicits others' input | ○ | ○ | ○ | ○ | ○ | ○ |
| 12 | Takes calculated risks to reach a goal | ○ | ○ | ○ | ○ | ○ | ○ |
| 13 | Believes the future will be better than the past | ○ | ○ | ○ | ○ | ○ | ○ |
| 14 | Gives directions or demonstrations to develop someone | ○ | ○ | ○ | ○ | ○ | ○ |
| 15 | Looks for feedback, even if hard to hear | ○ | ○ | ○ | ○ | ○ | ○ |
| 16 | Reflects on underlying reasons for feelings | ○ | ○ | ○ | ○ | ○ | ○ |
| 17 | Makes self available to customers or clients | ○ | ○ | ○ | ○ | ○ | ○ |
| 18 | Publicly states everyone's position to those involved in a conflict | ○ | ○ | ○ | ○ | ○ | ○ |
| 19 | Relates well to people of diverse backgrounds | ○ | ○ | ○ | ○ | ○ | ○ |
| 20 | Makes work exciting | ○ | ○ | ○ | ○ | ○ | ○ |
| 21 | Is defensive when receiving feedback | ○ | ○ | ○ | ○ | ○ | ○ |
| 22 | Brings up ethical concerns | ○ | ○ | ○ | ○ | ○ | ○ |
| 23 | Listens attentively | ○ | ○ | ○ | ○ | ○ | ○ |
| 24 | Stays composed and positive, even in trying moments | ○ | ○ | ○ | ○ | ○ | ○ |
| 25 | Leads by example | ○ | ○ | ○ | ○ | ○ | ○ |
| 26 | Acts on own values even when there is a personal cost | ○ | ○ | ○ | ○ | ○ | ○ |
| 27 | Knows how their feelings effect their actions | ○ | ○ | ○ | ○ | ○ | ○ |
| 28 | Airs disagreements or conflicts | ○ | ○ | ○ | ○ | ○ | ○ |
| 29 | Inspires people | ○ | ○ | ○ | ○ | ○ | ○ |
| 30 | Applies standard procedures flexibly | ○ | ○ | ○ | ○ | ○ | ○ |
| 31 | Has "presence" | ○ | ○ | ○ | ○ | ○ | ○ |
| 32 | Monitors customer or client satisfaction | ○ | ○ | ○ | ○ | ○ | ○ |
| 33 | In a conflict, finds a position everyone can endorse | ○ | ○ | ○ | ○ | ○ | ○ |
| 34 | Engages an audience when presenting | ○ | ○ | ○ | ○ | ○ | ○ |
| 35 | States need for change | ○ | ○ | ○ | ○ | ○ | ○ |

| Item Number | Please carefully respond to each survey item below.  Your TSO (he/she): | Never | Rarely | Sometimes | Often | Consistently | Don't know |
|---|---|---|---|---|---|---|---|
| 36 | Advocates change despite opposition | ○ | ○ | ○ | ○ | ○ | ○ |
| 37 | Gets impatient or shows frustration | ○ | ○ | ○ | ○ | ○ | ○ |
| 38 | Recognizes specific strengths of others | ○ | ○ | ○ | ○ | ○ | ○ |
| 39 | Understands informal structure in the organisation | ○ | ○ | ○ | ○ | ○ | ○ |
| 40 | Behaves calmly in stressful situations | ○ | ○ | ○ | ○ | ○ | ○ |
| 41 | Personally leads change initiatives | ○ | ○ | ○ | ○ | ○ | ○ |
| 42 | Gets support from key people | ○ | ○ | ○ | ○ | ○ | ○ |
| 43 | Understands the organisation's unspoken rules | ○ | ○ | ○ | ○ | ○ | ○ |
| 44 | Keeps their promises | ○ | ○ | ○ | ○ | ○ | ○ |
| 45 | Understands historical reasons for organisational issues | ○ | ○ | ○ | ○ | ○ | ○ |
| 46 | Takes personal responsibility for meeting customer needs | ○ | ○ | ○ | ○ | ○ | ○ |
| 47 | Acknowledges mistakes | ○ | ○ | ○ | ○ | ○ | ○ |
| 48 | Presents self in an assured manner | ○ | ○ | ○ | ○ | ○ | ○ |
| 49 | Handles unexpected demands well | ○ | ○ | ○ | ○ | ○ | ○ |
| 50 | Articulates a compelling vision | ○ | ○ | ○ | ○ | ○ | ○ |
| 51 | Is not politically savvy at work | ○ | ○ | ○ | ○ | ○ | ○ |
| 52 | Seeks ways to improve performance | ○ | ○ | ○ | ○ | ○ | ○ |
| 53 | Acknowledges own strengths and weaknesses | ○ | ○ | ○ | ○ | ○ | ○ |
| 54 | Can see things from someone else's perspective | ○ | ○ | ○ | ○ | ○ | ○ |
| 55 | Believes oneself to be capable for a job | ○ | ○ | ○ | ○ | ○ | ○ |
| 56 | Cuts through red tape or bends rules when necessary | ○ | ○ | ○ | ○ | ○ | ○ |
| 57 | Stays positive despite setbacks | ○ | ○ | ○ | ○ | ○ | ○ |
| 58 | Develops behind-the-scenes support | ○ | ○ | ○ | ○ | ○ | ○ |
| 59 | Persuades by appealing to peoples' self interest | ○ | ○ | ○ | ○ | ○ | ○ |
| 60 | Acts impulsively | ○ | ○ | ○ | ○ | ○ | ○ |
| 61 | Does not cooperate with others | ○ | ○ | ○ | ○ | ○ | ○ |
| 62 | Doubts their own ability | ○ | ○ | ○ | ○ | ○ | ○ |
| 63 | Avoids conflicts | ○ | ○ | ○ | ○ | ○ | ○ |
| 64 | Matches customer or client needs to services or products | ○ | ○ | ○ | ○ | ○ | ○ |
| 65 | Establishes and maintains close relationships at work | ○ | ○ | ○ | ○ | ○ | ○ |
| 66 | Hesitates to act on opportunities | ○ | ○ | ○ | ○ | ○ | ○ |
| 67 | Provides on-going mentoring or coaching | ○ | ○ | ○ | ○ | ○ | ○ |
| 68 | Aware of own feelings | ○ | ○ | ○ | ○ | ○ | ○ |
| 69 | Changes overall strategy, goals, or projects to fit the situation | ○ | ○ | ○ | ○ | ○ | ○ |
| 70 | Seeks information in unusual ways | ○ | ○ | ○ | ○ | ○ | ○ |
| 71 | Is attentive to peoples' moods or nonverbal cues | ○ | ○ | ○ | ○ | ○ | ○ |
| 72 | Learns from setbacks | ○ | ○ | ○ | ○ | ○ | ○ |

# Organisational Culture Profile (OCP)
## Indicate by filling in the circle that best indicates the extent to which you perceive each organisational culture item is characteristic of your TSC and its values.

| No. | Organisational culture items | Not at all | Small | Moderately | Large | Very Large |
|---|---|---|---|---|---|---|
| | **To what extent is your TSC recognised for its………………………….?**. | | | | | |
| | | | | | | |
| 1 | Stability | ○ | ○ | ○ | ○ | ○ |
| 2 | Being people oriented | ○ | ○ | ○ | ○ | ○ |
| 3 | Being innovative | ○ | ○ | ○ | ○ | ○ |
| 4 | Fairness | ○ | ○ | ○ | ○ | ○ |
| | | | | | | |
| 5 | Being calm | ○ | ○ | ○ | ○ | ○ |
| 6 | Being reflective | ○ | ○ | ○ | ○ | ○ |
| 7 | Achievement orientation | ○ | ○ | ○ | ○ | ○ |
| 8 | Quick to take advantage of opportunities | ○ | ○ | ○ | ○ | ○ |
| | | | | | | |
| 9 | Having high expectations for performance | ○ | ○ | ○ | ○ | ○ |
| 10 | High pay for good performance | ○ | ○ | ○ | ○ | ○ |
| 11 | Security of employment | ○ | ○ | ○ | ○ | ○ |
| 12 | Enthusiasm for the job | ○ | ○ | ○ | ○ | ○ |
| | | | | | | |
| 13 | An emphasis on quality | ○ | ○ | ○ | ○ | ○ |
| 14 | Risk taking | ○ | ○ | ○ | ○ | ○ |
| 15 | Being distinctive-different from others | ○ | ○ | ○ | ○ | ○ |
| 16 | Having a good reputation | ○ | ○ | ○ | ○ | ○ |
| | | | | | | |
| 17 | Being team oriented | ○ | ○ | ○ | ○ | ○ |
| 18 | Being results oriented | ○ | ○ | ○ | ○ | ○ |
| 19 | Having a clear guiding philosophy | ○ | ○ | ○ | ○ | ○ |
| 20 | Being competitive | ○ | ○ | ○ | ○ | ○ |
| | | | | | | |
| 21 | Sharing information freely | ○ | ○ | ○ | ○ | ○ |
| 22 | Being highly organized | ○ | ○ | ○ | ○ | ○ |
| 23 | Being socially responsible | ○ | ○ | ○ | ○ | ○ |
| 24 | Low conflict | ○ | ○ | ○ | ○ | ○ |
| | | | | | | |
| 25 | Opportunities for professional growth | ○ | ○ | ○ | ○ | ○ |
| 26 | Collaboration | ○ | ○ | ○ | ○ | ○ |
| 27 | Praise for good performance | ○ | ○ | ○ | ○ | ○ |
| 28 | Taking individual responsibility | ○ | ○ | ○ | ○ | ○ |

# APPENDIX C: THE TSC STAFF QUESTIONNAIRE

This questionnaire is made up of three sections i.e. **General, Emotional Competency Inventory (ECI) and the Organisational Culture Profile (OCP).**

The General section is self explanatory and should be easy to fill in. This section will take you 5 minutes to complete.

- **Instructions to complete the Emotional Competency Profile**

The following statements reflect behaviours that you may or may not have observed in your Technical Services Officer (TSO) you are rating. You will be asked to report on your experiences with this person. Please respond to all items by filling in the circle that is closest to your observation and experience with this person.

It should take you less than 20 minutes to complete this questionnaire. Each item in the questionnaire describes a work-related behaviour. Think about your experiences with this individual over the previous 12 months. Then, use the scale below to indicate how frequently you have observed each behaviour.

**An example survey item:**

| Item Number | Please carefully respond to each survey item below. You: | Never | Rarely | Sometimes | Often | Consistently | Don't know |
|---|---|---|---|---|---|---|---|
| 72 | Listen to others carefully when they are speaking | ○ | ○ | ○ | ○ | ○ | ○ |

In the above example, fill in the circle that best indicates how frequently you have observed this behaviour in the individual you are rating. For example, if the person you are rating never carefully listens to you when you are speaking then fill in, "Never." If he or she infrequently listens carefully to you, then fill in, "Rarely." If this person listens carefully to you about half of the time, then fill in "Sometimes." If you observe this most of the time, then fill in "Often" and if the person listens carefully very frequently (i.e., all the time or nearly all the time) and consistently, then fill in, "Consistently."

Please try to respond to all of the items. If for some reason an item does not apply to this individual or you have not had an opportunity to observe any particular behaviour then choose, "Don't know."

- **Instructions to complete the Organisational Culture Profile**

Indicate by filling in the circle that best indicates the extent to which you perceive each organisational culture item is characteristic of your Technical Service Center (TSC) and its values. In filling each line item answer the question "**what extent is your TSC recognised for its…….?"** It should take you less than 20 minutes to complete this part of the questionnaire.

**An example survey item:**

| No. | Organisational culture items | Not at all | Small | Moderately | Large | Very Large |
|---|---|---|---|---|---|---|
| 1 | Stability | ○ | ○ | ○ | ○ | ○ |

In the above example, fill in the circle that best indicates to **what extent is your organisation recognised for its stability.** Please respond to all items.

**Thank you for your participation.**

**General (TSC staff)**

| Name of Survey Participant? (optional) | |
|---|---|

| Name of TSC? | |
|---|---|

| What is your current designation/position in the TSC? | TO | STO | PTO | WC |
|---|---|---|---|---|

| For how long have you worked in your current designation/position (years)? | Less than 1 yr | 1 to 2 yrs | 2 to 3 yrs | 3 to 4yrs | 4 to 5 yrs | Greater than 6 yrs |
|---|---|---|---|---|---|---|

| How long have you work for the organisation (years)? | Less than 1 yr | 1 to 2 yrs | 2 to 3 yrs | 3 to 4yrs | 4 to 5 yrs | Greater than 6 yrs |
|---|---|---|---|---|---|---|

| How long have you been reporting to your current (TSO) (years)? | Less than 1 yr | 1 to 2 yrs | 2 to 3 yrs | 3 to 4yrs | 4 to 5 yrs | Greater than 6 yrs |
|---|---|---|---|---|---|---|

## Emotional competency inventory (ECI)

| Item Number | Please carefully respond to each survey item below. Your TSO (he/she): | Never | Rarely | Sometimes | Often | Consistently | Don't know |
|---|---|---|---|---|---|---|---|
| 1 | Recognizes the situations that arouse strong emotions in him/her | ○ | ○ | ○ | ○ | ○ | ○ |
| 2 | Has mainly positive expectations | ○ | ○ | ○ | ○ | ○ | ○ |
| 3 | Initiates actions to create possibilities | ○ | ○ | ○ | ○ | ○ | ○ |
| 4 | Anticipates obstacles to a goal | ○ | ○ | ○ | ○ | ○ | ○ |
| 5 | Is reluctant to change or make changes | ○ | ○ | ○ | ○ | ○ | ○ |
| 6 | Has sense of humour about oneself | ○ | ○ | ○ | ○ | ○ | ○ |
| 7 | In a group, encourages others' participation | ○ | ○ | ○ | ○ | ○ | ○ |
| 8 | Gives constructive feedback | ○ | ○ | ○ | ○ | ○ | ○ |
| 9 | Adapts ideas based on new information | ○ | ○ | ○ | ○ | ○ | ○ |
| 10 | Sets measurable and challenging goals | ○ | ○ | ○ | ○ | ○ | ○ |
| 11 | Solicits others' input | ○ | ○ | ○ | ○ | ○ | ○ |
| 12 | Takes calculated risks to reach a goal | ○ | ○ | ○ | ○ | ○ | ○ |
| 13 | Believes the future will be better than the past | ○ | ○ | ○ | ○ | ○ | ○ |
| 14 | Gives directions or demonstrations to develop someone | ○ | ○ | ○ | ○ | ○ | ○ |
| 15 | Looks for feedback, even if hard to hear | ○ | ○ | ○ | ○ | ○ | ○ |
| 16 | Reflects on underlying reasons for feelings | ○ | ○ | ○ | ○ | ○ | ○ |
| 17 | Makes self available to customers or clients | ○ | ○ | ○ | ○ | ○ | ○ |
| 18 | Publicly states everyone's position to those involved in a conflict | ○ | ○ | ○ | ○ | ○ | ○ |
| 19 | Relates well to people of diverse backgrounds | ○ | ○ | ○ | ○ | ○ | ○ |
| 20 | Makes work exciting | ○ | ○ | ○ | ○ | ○ | ○ |
| 21 | Is defensive when receiving feedback | ○ | ○ | ○ | ○ | ○ | ○ |
| 22 | Brings up ethical concerns | ○ | ○ | ○ | ○ | ○ | ○ |
| 23 | Listens attentively | ○ | ○ | ○ | ○ | ○ | ○ |
| 24 | Stays composed and positive, even in trying moments | ○ | ○ | ○ | ○ | ○ | ○ |
| 25 | Leads by example | ○ | ○ | ○ | ○ | ○ | ○ |
| 26 | Acts on own values even when there is a personal cost | ○ | ○ | ○ | ○ | ○ | ○ |
| 27 | Knows how their feelings effect their actions | ○ | ○ | ○ | ○ | ○ | ○ |
| 28 | Airs disagreements or conflicts | ○ | ○ | ○ | ○ | ○ | ○ |
| 29 | Inspires people | ○ | ○ | ○ | ○ | ○ | ○ |
| 30 | Applies standard procedures flexibly | ○ | ○ | ○ | ○ | ○ | ○ |
| 31 | Has "presence" | ○ | ○ | ○ | ○ | ○ | ○ |
| 32 | Monitors customer or client satisfaction | ○ | ○ | ○ | ○ | ○ | ○ |
| 33 | In a conflict, finds a position everyone can endorse | ○ | ○ | ○ | ○ | ○ | ○ |
| 34 | Engages an audience when presenting | ○ | ○ | ○ | ○ | ○ | ○ |
| 35 | States need for change | ○ | ○ | ○ | ○ | ○ | ○ |

| Item Number | Please carefully respond to each survey item below. Your TSO (he/she): | Never | Rarely | Sometimes | Often | Consistently | Don't know |
|---|---|---|---|---|---|---|---|
| 36 | Advocates change despite opposition | ○ | ○ | ○ | ○ | ○ | ○ |
| 37 | Gets impatient or shows frustration | ○ | ○ | ○ | ○ | ○ | ○ |
| 38 | Recognizes specific strengths of others | ○ | ○ | ○ | ○ | ○ | ○ |
| 39 | Understands informal structure in the organisation | ○ | ○ | ○ | ○ | ○ | ○ |
| 40 | Behaves calmly in stressful situations | ○ | ○ | ○ | ○ | ○ | ○ |
| 41 | Personally leads change initiatives | ○ | ○ | ○ | ○ | ○ | ○ |
| 42 | Gets support from key people | ○ | ○ | ○ | ○ | ○ | ○ |
| 43 | Understands the organisation's unspoken rules | ○ | ○ | ○ | ○ | ○ | ○ |
| 44 | Keeps their promises | ○ | ○ | ○ | ○ | ○ | ○ |
| 45 | Understands historical reasons for organisational issues | ○ | ○ | ○ | ○ | ○ | ○ |
| 46 | Takes personal responsibility for meeting customer needs | ○ | ○ | ○ | ○ | ○ | ○ |
| 47 | Acknowledges mistakes | ○ | ○ | ○ | ○ | ○ | ○ |
| 48 | Presents self in an assured manner | ○ | ○ | ○ | ○ | ○ | ○ |
| 49 | Handles unexpected demands well | ○ | ○ | ○ | ○ | ○ | ○ |
| 50 | Articulates a compelling vision | ○ | ○ | ○ | ○ | ○ | ○ |
| 51 | Is not politically savvy at work | ○ | ○ | ○ | ○ | ○ | ○ |
| 52 | Seeks ways to improve performance | ○ | ○ | ○ | ○ | ○ | ○ |
| 53 | Acknowledges own strengths and weaknesses | ○ | ○ | ○ | ○ | ○ | ○ |
| 54 | Can see things from someone else's perspective | ○ | ○ | ○ | ○ | ○ | ○ |
| 55 | Believes oneself to be capable for a job | ○ | ○ | ○ | ○ | ○ | ○ |
| 56 | Cuts through red tape or bends rules when necessary | ○ | ○ | ○ | ○ | ○ | ○ |
| 57 | Stays positive despite setbacks | ○ | ○ | ○ | ○ | ○ | ○ |
| 58 | Develops behind-the-scenes support | ○ | ○ | ○ | ○ | ○ | ○ |
| 59 | Persuades by appealing to peoples' self interest | ○ | ○ | ○ | ○ | ○ | ○ |
| 60 | Acts impulsively | ○ | ○ | ○ | ○ | ○ | ○ |
| 61 | Does not cooperate with others | ○ | ○ | ○ | ○ | ○ | ○ |
| 62 | Doubts their own ability | ○ | ○ | ○ | ○ | ○ | ○ |
| 63 | Avoids conflicts | ○ | ○ | ○ | ○ | ○ | ○ |
| 64 | Matches customer or client needs to services or products | ○ | ○ | ○ | ○ | ○ | ○ |
| 65 | Establishes and maintains close relationships at work | ○ | ○ | ○ | ○ | ○ | ○ |
| 66 | Hesitates to act on opportunities | ○ | ○ | ○ | ○ | ○ | ○ |
| 67 | Provides on-going mentoring or coaching | ○ | ○ | ○ | ○ | ○ | ○ |
| 68 | Aware of own feelings | ○ | ○ | ○ | ○ | ○ | ○ |
| 69 | Changes overall strategy, goals, or projects to fit the situation | ○ | ○ | ○ | ○ | ○ | ○ |
| 70 | Seeks information in unusual ways | ○ | ○ | ○ | ○ | ○ | ○ |
| 71 | Is attentive to peoples' moods or nonverbal cues | ○ | ○ | ○ | ○ | ○ | ○ |
| 72 | Learns from setbacks | ○ | ○ | ○ | ○ | ○ | ○ |

## Organisational Culture Profile (OCP)
### Indicate by filling in the circle that best indicates the extent to which you perceive each organisational culture item is characteristic of the TSC you are rating and its values.

| No. | Organisational culture items | Not at all | Small | Moderately | Large | Very Large |
|---|---|---|---|---|---|---|
| | To what extent is the TSC you are rating recognised for its…………..? | | | | | |
| | | | | | | |
| 1 | Stability | ○ | ○ | ○ | ○ | ○ |
| 2 | Being people oriented | ○ | ○ | ○ | ○ | ○ |
| 3 | Being innovative | ○ | ○ | ○ | ○ | ○ |
| 4 | Fairness | ○ | ○ | ○ | ○ | ○ |
| | | | | | | |
| 5 | Being calm | ○ | ○ | ○ | ○ | ○ |
| 6 | Being reflective | ○ | ○ | ○ | ○ | ○ |
| 7 | Achievement orientation | ○ | ○ | ○ | ○ | ○ |
| 8 | Quick to take advantage of opportunities | ○ | ○ | ○ | ○ | ○ |
| | | | | | | |
| 9 | Having high expectations for performance | ○ | ○ | ○ | ○ | ○ |
| 10 | High pay for good performance | ○ | ○ | ○ | ○ | ○ |
| 11 | Security of employment | ○ | ○ | ○ | ○ | ○ |
| 12 | Enthusiasm for the job | ○ | ○ | ○ | ○ | ○ |
| | | | | | | |
| 13 | An emphasis on quality | ○ | ○ | ○ | ○ | ○ |
| 14 | Risk taking | ○ | ○ | ○ | ○ | ○ |
| 15 | Being distinctive-different from others | ○ | ○ | ○ | ○ | ○ |
| 16 | Having a good reputation | ○ | ○ | ○ | ○ | ○ |
| | | | | | | |
| 17 | Being team oriented | ○ | ○ | ○ | ○ | ○ |
| 18 | Being results oriented | ○ | ○ | ○ | ○ | ○ |
| 19 | Having a clear guiding philosophy | ○ | ○ | ○ | ○ | ○ |
| 20 | Being competitive | ○ | ○ | ○ | ○ | ○ |
| | | | | | | |
| 21 | Sharing information freely | ○ | ○ | ○ | ○ | ○ |
| 22 | Being highly organized | ○ | ○ | ○ | ○ | ○ |
| 23 | Being socially responsible | ○ | ○ | ○ | ○ | ○ |
| 24 | Low conflict | ○ | ○ | ○ | ○ | ○ |
| | | | | | | |
| 25 | Opportunities for professional growth | ○ | ○ | ○ | ○ | ○ |
| 26 | Collaboration | ○ | ○ | ○ | ○ | ○ |
| 27 | Praise for good performance | ○ | ○ | ○ | ○ | ○ |
| 28 | Taking individual responsibility | ○ | ○ | ○ | ○ | ○ |

# APPENDIX D: LIST OF TECHNICAL SERVICES CENTRES

**Table D1: Total List of TSC's in the sample population**

| Technical Service Centre | Region | FSAM | FSE | TSO | TO | STO | PTO | WC |
|---|---|---|---|---|---|---|---|---|
| 1 | E | 1 | 1 | 1 | 1 | 0 | 1 | 1 |
| 2 | E | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 3 | E | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 4 | E | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | E | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| 6 | E | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 7 | E | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 8 | E | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 9 | E | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 10 | E | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 11 | E | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 12 | E | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 13 | E | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 14 | E | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | E | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 16 | E | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 17 | E | 1 | 0 | 1 | 0 | 1 | 1 | 0 |
| 18 | E | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| 19 | E | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| 20 | E | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 21 | E | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 22 | E | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 23 | E | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 24 | E | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 25 | E | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

| Technical Service Centre | Region | FSAM | FSE | TSO | TO | STO | PTO | WC |
|---|---|---|---|---|---|---|---|---|
| 26 | E | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| 27 | E | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 28 | E | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 29 | E | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 30 | E | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 31 | N | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 32 | N | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| 33 | N | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 34 | N | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 35 | N | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 36 | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 37 | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 38 | N | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 39 | N | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 40 | N | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 41 | N | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 42 | N | 0 | 0 | 1 | 1 | 1 | 1 | 1 |
| 43 | N | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 44 | N | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 45 | N | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 46 | N | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 47 | N | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 48 | n | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| 49 | N | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 50 | N | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 51 | N | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 52 | NE | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| 53 | NE | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

| Technical Service Centre | Region | FSAM | FSE | TSO | TO | STO | PTO | WC |
|---|---|---|---|---|---|---|---|---|
| 54 | NE | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| 55 | NE | 1 | 1 | 0 | 0 | 1 | 1 | 1 |
| 56 | NE | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 57 | NE | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| 58 | NE | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 59 | NE | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| 60 | NE | 1 | 1 | 1 | 0 | 1 | 1 | 0 |
| 61 | NE | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 62 | NE | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 63 | NE | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| 64 | NE | 0 | 0 | 1 | 1 | 0 | 0 | 0 |
| 65 | NE | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 66 | NE | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| 67 | NE | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 68 | NE | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| 69 | NE | 1 | 0 | 1 | 1 | 1 | 1 | 0 |
| 70 | NE | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 71 | NE | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 72 | NE | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 73 | NE | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 74 | NE | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 75 | NE | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 76 | NE | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| 77 | NE | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 78 | NE | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 79 | NE | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 80 | NE | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 81 | NW | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

| Technical Service Centre | Region | FSAM | FSE | TSO | TO | STO | PTO | WC |
|---|---|---|---|---|---|---|---|---|
| 82 | NW | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 83 | NW | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 84 | NW | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| 85 | NW | 0 | 0 | 1 | 1 | 1 | 1 | 1 |
| 86 | NW | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| 87 | NW | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 88 | NW | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 89 | NW | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 90 | NW | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 91 | NW | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 92 | NW | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 93 | NW | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 94 | NW | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 95 | NW | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 96 | NW | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 97 | NW | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| 98 | NW | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 99 | NW | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 100 | NW | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 101 | NW | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 102 | NW | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 103 | NW | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 104 | NW | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 104 | NW | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 105 | NW | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 106 | NW | 1 | 1 | 1 | 1 | 0 | 1 | 1 |
| 107 | NW | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 108 | S | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

| Technical Service Centre | Region | FSAM | FSE | TSO | TO | STO | PTO | WC |
|---|---|---|---|---|---|---|---|---|
| 109 | S | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 110 | S | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 111 | S | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 112 | S | 0 | 0 | 1 | 1 | 1 | 1 | 1 |
| 113 | S | 1 | 1 | 0 | 1 | 1 | 1 | 1 |
| 114 | S | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 115 | S | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 116 | S | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 117 | S | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 118 | S | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| 119 | S | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 120 | S | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 121 | S | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 122 | S | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 123 | S | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 124 | W | 0 | 0 | 1 | 1 | 1 | 1 | 1 |
| 125 | W | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 126 | W | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 127 | W | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 128 | W | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 129 | W | 1 | 1 | 0 | 0 | 1 | 1 | 1 |
| 130 | W | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 131 | W | 1 | 0 | 0 | 0 | 1 | 1 | 1 |
| 132 | W | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| 133 | W | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 134 | W | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 135 | W | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 136 | W | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Technical Service Centre | Region | FSAM | FSE | TSO | TO | STO | PTO | WC |
|---|---|---|---|---|---|---|---|---|
| 137 | W | 1 | 1 | 0 | 1 | 1 | 1 | 1 |
| 138 | W | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| 139 | W | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| 140 | W | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 141 | W | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| 142 | W | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 143 | W | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 144 | W | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 145 | W | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 146 | W | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 147 | W | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Total questionnaires filled in per category | | 114 | 104 | 115 | 110 | 117 | 119 | 115 |

- excluded from the sample

- included in the sample

# APPENDIX E: DESCRIPTIVE STATISTICS FOR THE ECI, OCP AND ORGANISATIONAL PERFORMANCE

**Table E1:** Descriptive Statistics for ECI Questionnaires filled in by the Technical Services Officer

| | N | Mean | | Std. Deviation | Variance | Skewness | | Kurtosis | |
|---|---|---|---|---|---|---|---|---|---|
| | Statistic | Statistic | Std. Error | Statistic | Statistic | Statistic | Std. Error | Statistic | Std. Error |
| (TSO) Emotional self awareness | 118 | 4.0784 | .04717 | .51235 | .262 | -.167 | .223 | -.111 | .442 |
| (TSO) Accurate self assessment | 118 | 4.1389 | .04099 | .44340 | .197 | -.018 | .224 | -.522 | .444 |
| (TSO) Self confidence | 118 | 4.3263 | .04427 | .48095 | .231 | -.781 | .223 | .924 | .442 |
| (TSO) Emotional Self Control | 118 | 3.7860 | .04928 | .53537 | .287 | -.111 | .223 | -.407 | .442 |
| (TSO) Transparency | 118 | 4.0890 | .04782 | .51942 | .270 | -.441 | .223 | .138 | .442 |
| (TSO) Adaptability | 118 | 4.0720 | .04454 | .48382 | .234 | -.273 | .223 | .038 | .442 |
| (TSO) Achievement orientation | 118 | 4.2669 | .04274 | .46424 | .216 | -.435 | .223 | -.019 | .442 |
| (TSO) Initiative | 118 | 3.5191 | .05169 | .56155 | .315 | .207 | .223 | -.692 | .442 |
| (TSO) Optimism | 118 | 4.2458 | .04613 | .50105 | .251 | -.618 | .223 | .059 | .442 |

| | N | Mean | | Std. Deviation | Variance | Skewness | | Kurtosis | |
|---|---|---|---|---|---|---|---|---|---|
| | Statistic | Statistic | Std. Error | Statistic | Statistic | Statistic | Std. Error | Statistic | Std. Error |
| (TSO) Empathy | 118 | 4.2288 | .04186 | .45477 | .207 | -.409 | .223 | .145 | .442 |
| (TSO) Organisational awareness | 118 | 3.8602 | .06200 | .67348 | .454 | -.243 | .223 | -.350 | .442 |
| (TSO) Service orientation | 118 | 4.4068 | .04650 | .50510 | .255 | -.679 | .223 | -.294 | .442 |
| (TSO) Developing others | 118 | 4.4153 | .04006 | .43513 | .189 | -.533 | .223 | .235 | .442 |
| (TSO) Inspirational leadership | 118 | 4.1992 | .04913 | .53365 | .285 | -.245 | .223 | -.701 | .442 |
| (TSO) Change catalyst | 118 | 3.9068 | .05547 | .60252 | .363 | -.222 | .223 | -.147 | .442 |
| (TSO) Influence. Having impact on others | 118 | 3.9195 | .05314 | .57724 | .333 | -.149 | .223 | -.299 | .442 |
| (TSO) Conflict Management | 118 | 3.5720 | .05920 | .64309 | .414 | -.341 | .223 | .142 | .442 |
| (TSO) Team work and collaboration | 118 | 4.4047 | .04360 | .47357 | .224 | -.663 | .223 | .140 | .442 |

**Table E2:    Descriptive Statistics for the ECI Questionnaire filled in by the Field Services Area Manager**

| | N | Mean | | Std. Deviation | Variance | Skewness | | Kurtosis | |
|---|---|---|---|---|---|---|---|---|---|
| | Statistic | Statistic | Std. Error | Statistic | Statistic | Statistic | Std. Error | Statistic | Std. Error |
| (FSAM) Emotional self assessment | 113 | 3.5221 | .04985 | .52986 | .281 | -.038 | .227 | -.386 | .451 |
| (FSAM) Accurate self assessment | 113 | 3.5199 | .05864 | .62334 | .389 | -.624 | .227 | .601 | .451 |
| (FSAM) Self confidence | 113 | 3.8872 | .06301 | .66981 | .449 | -.395 | .227 | -.228 | .451 |
| (FSAM) Emotional self control | 113 | 3.4358 | .06717 | .71400 | .510 | -.799 | .227 | .519 | .451 |
| (FSAM) Emotional self control | 113 | 3.6128 | .06600 | .70155 | .492 | -.433 | .227 | .677 | .451 |
| (FSAM) Adaptability | 113 | 3.5310 | .05675 | .60331 | .364 | -.202 | .227 | -.088 | .451 |
| (FSAM) Achievement orientation | 113 | 3.6438 | .07158 | .76094 | .579 | -.109 | .227 | -.858 | .451 |
| (FSAM) Initiative | 113 | 3.3356 | .05176 | .55025 | .303 | -.147 | .227 | -.113 | .451 |
| (FSAM) Optimism | 113 | 3.5885 | .06674 | .70941 | .503 | -.696 | .227 | .859 | .451 |
| (FSAM) Empathy | 113 | 3.6549 | .06296 | .66925 | .448 | -.672 | .227 | .451 | .451 |

| | N | Mean | | Std. Deviation | Variance | Skewness | | Kurtosis | |
|---|---|---|---|---|---|---|---|---|---|
| | Statistic | Statistic | Std. Error | Statistic | Statistic | Statistic | Std. Error | Statistic | Std. Error |
| (FSAM) Organisational awareness | 113 | 3.5973 | .06146 | .65332 | .427 | -.143 | .227 | -.616 | .451 |
| (FSAM) Service orientation | 113 | 4.0420 | .07180 | .76320 | .582 | -.712 | .227 | -.249 | .451 |
| (FSAM) Developing Others | 113 | 3.6925 | .07317 | .77777 | .605 | -.461 | .227 | -.292 | .451 |
| (FSAM) Inspirational leadership | 113 | 3.5929 | .07008 | .74492 | .555 | -.480 | .227 | -.047 | .451 |
| (FSAM) Change catalyst | 113 | 3.2522 | .07327 | .77883 | .607 | -.423 | .227 | .836 | .451 |
| (FSAM) Influence | 113 | 3.5310 | .05614 | .59680 | .356 | -.229 | .227 | -.066 | .451 |
| (FSAM) Conflict management | 113 | 3.2765 | .05891 | .62622 | .392 | -.119 | .227 | -.041 | .451 |
| (FSAM) Teamwork and collaboration | 113 | 3.5819 | .05900 | .62718 | .393 | -.421 | .227 | .011 | .451 |

**Table E 3:    Descriptive Statistics for ECI Questionnaire filled in by the Field Services Engineer**

| | N | Mean | | Std. Deviation | Variance | Skewness | | Kurtosis | |
|---|---|---|---|---|---|---|---|---|---|
| | Statistic | Statistic | Std. Error | Statistic | Statistic | Statistic | Std. Error | Statistic | Std. Error |
| (FSE) Emotional self awareness | 107 | 3.4743 | .05393 | .55789 | .311 | .334 | .234 | -.355 | .463 |
| (FSE) Accurate self assessment | 107 | 3.4393 | .06120 | .63305 | .401 | -.314 | .234 | .867 | .463 |
| (FSE) Self confidence | 107 | 3.6565 | .06527 | .67513 | .456 | -.135 | .234 | -.402 | .463 |
| (FSE) Emotional self control | 107 | 3.3388 | .05577 | .57693 | .333 | -.092 | .234 | .037 | .463 |
| (FSE) Transparency | 107 | 3.4790 | .05995 | .62014 | .385 | .034 | .234 | -.180 | .463 |
| (FSE) Adaptability | 107 | 3.3645 | .06741 | .69727 | .486 | -.073 | .234 | .045 | .463 |
| (FSE) Achievement orientation | 107 | 3.4533 | .06641 | .68692 | .472 | -.477 | .234 | .020 | .463 |
| (FSE) Initiative | 107 | 3.1051 | .06067 | .62762 | .394 | .105 | .234 | .613 | .463 |
| (FSE) Optimism | 107 | 3.4766 | .06364 | .65834 | .433 | .119 | .234 | -.610 | .463 |
| (FSE) Empathy | 107 | 3.5070 | .05980 | .61856 | .383 | .066 | .234 | -.361 | .463 |
| (FSE) Organisational awareness | 107 | 3.2734 | .05610 | .58027 | .337 | .046 | .234 | -.865 | .463 |

| | N | Mean | | Std. Deviation | Variance | Skewness | | Kurtosis | |
|---|---|---|---|---|---|---|---|---|---|
| | Statistic | Statistic | Std. Error | Statistic | Statistic | Statistic | Std. Error | Statistic | Std. Error |
| (FSE) Service orientation | 107 | 3.8178 | .08237 | .85200 | .726 | -.522 | .234 | -.005 | .463 |
| (FSE) Developing others | 107 | 3.4813 | .06452 | .66738 | .445 | -.261 | .234 | .270 | .463 |
| (FSE) Inspirational leadership | 107 | 3.3832 | .07291 | .75417 | .569 | -.294 | .234 | -.013 | .463 |
| FSE) Change catalyst | 107 | 3.2453 | .06471 | .66940 | .448 | .038 | .234 | .469 | .463 |
| (FSE) Influence | 107 | 3.3458 | .06374 | .65934 | .435 | -.530 | .234 | 1.184 | .463 |
| (FSE) Conflict management | 107 | 3.2290 | .05732 | .59292 | .352 | -.490 | .234 | .955 | .463 |
| (FSE) Teamwork and collaboration | 107 | 3.5888 | .06567 | .67925 | .461 | -.579 | .234 | .879 | .463 |

**Table E4: Descriptive Statistics for ECI Questionnaire filled in by the Staff**

| | N | Mean | | Std. Deviation | Variance | Skewness | | Kurtosis | |
|---|---|---|---|---|---|---|---|---|---|
| | Statistic | Statistic | Std. Error | Statistic | Statistic | Statistic | Std. Error | Statistic | Std. Error |
| (Staff) Emotional self awareness | 118 | 3.6014 | .03785 | .41111 | .169 | -.017 | .223 | .195 | .442 |
| (Staff) Accurate self assessment | 118 | 3.6787 | .03772 | .40975 | .168 | -.459 | .223 | .034 | .442 |
| (Staff) Self confidence | 118 | 3.9327 | .04386 | .47649 | .227 | -.336 | .223 | -.468 | .442 |
| (Staff) Emotional self control | 118 | 3.5534 | .04482 | .48683 | .237 | -.431 | .223 | -.372 | .442 |
| (Staff) Transparency | 118 | 3.6542 | .04360 | .47361 | .224 | -.627 | .223 | .512 | .442 |
| (Staff) Adaptability | 118 | 3.8273 | .04073 | .44248 | .196 | -.183 | .223 | -.150 | .442 |
| (Staff) Achievement orientation | 118 | 3.8597 | .04107 | .44618 | .199 | -.470 | .223 | .209 | .442 |
| (Staff) Initiative | 118 | 3.3096 | .03076 | .33418 | .112 | .034 | .223 | .166 | .442 |
| (Staff) Optimism | 118 | 3.8873 | .04367 | .47440 | .225 | -.548 | .223 | -.105 | .442 |
| (Staff) Empathy | 118 | 3.8023 | .04547 | .49398 | .244 | -.611 | .223 | .003 | .442 |
| (Staff) Organisational awareness | 118 | 3.8577 | .04050 | .43996 | .194 | -.219 | .223 | .135 | .442 |
| (Staff) Service orientation | 118 | 4.0549 | .04820 | .52360 | .274 | -.272 | .223 | -.694 | .442 |

| | N | Mean | | Std. Deviation | Variance | Skewness | | Kurtosis | |
|---|---|---|---|---|---|---|---|---|---|
| | Statistic | Statistic | Std. Error | Statistic | Statistic | Statistic | Std. Error | Statistic | Std. Error |
| (Staff) Developing others | 118 | 3.9151 | .05145 | .55888 | .312 | -.828 | .223 | .166 | .442 |
| (Staff) Inspirational leadership | 118 | 3.7687 | .05235 | .56866 | .323 | -.719 | .223 | .022 | .442 |
| (Staff) Change catalyst | 118 | 3.5165 | .03682 | .39994 | .160 | -.286 | .223 | .185 | .442 |
| (Staff) Influence | 118 | 3.7687 | .04192 | .45534 | .207 | -.202 | .223 | -.365 | .442 |
| (Staff) Conflict management | 118 | 3.2866 | .03699 | .40185 | .161 | -.489 | .223 | 1.754 | .442 |
| (Staff) Teamwork and collaboration | 118 | 3.9103 | .04316 | .46880 | .220 | -.415 | .223 | -.183 | .442 |

**Table E5:**   Descriptive Statistics for ECI Questionnaire filled in by the "Total Other"

(average of FSAM, FSE, Staff)

| | N | Mean | | Std. Deviation | Variance | Skewness | | Kurtosis | |
|---|---|---|---|---|---|---|---|---|---|
| | Statistic | Statistic | Std. Error | Statistic | Statistic | Statistic | Std. Error | Statistic | Std. Error |
| (Tot) Emotional Self awareness | 116 | 3.5055 | .03359 | .36174 | .131 | -.546 | .225 | .971 | .446 |
| (Tot) Accurate self assessment | 116 | 3.5202 | .03820 | .41147 | .169 | -.866 | .225 | 1.496 | .446 |
| (Tot) Self confidence | 116 | 3.7968 | .04208 | .45319 | .205 | -.479 | .225 | .139 | .446 |
| (Tot) Emotional Self control | 116 | 3.4130 | .04152 | .44717 | .200 | -.458 | .225 | -.188 | .446 |
| (Tot) Transparency | 116 | 3.5566 | .04069 | .43825 | .192 | -.705 | .225 | .678 | .446 |
| (Tot) Adaptability | 116 | 3.5545 | .03762 | .40521 | .164 | -.405 | .225 | .449 | .446 |
| (Tot) Achievement orientation | 116 | 3.6301 | .04376 | .47130 | .222 | -.509 | .225 | .094 | .446 |
| (Tot) Initiative | 116 | 3.2271 | .03700 | .39853 | .159 | -.347 | .225 | .497 | .446 |
| (Tot) Optimism | 116 | 3.6298 | .04282 | .46119 | .213 | -.485 | .225 | -.170 | .446 |
| (Tot) Empathy | 116 | 3.6314 | .04169 | .44902 | .202 | -.619 | .225 | .442 | .446 |

| | N | Mean | | Std. Deviation | Variance | Skewness | | Kurtosis | |
|---|---|---|---|---|---|---|---|---|---|
| | Statistic | Statistic | Std. Error | Statistic | Statistic | Statistic | Std. Error | Statistic | Std. Error |
| (Tot) An organisational awareness | 116 | 3.5596 | .03751 | .40403 | .163 | -.482 | .225 | .240 | .446 |
| (Tot) Service orientation | 116 | 3.9459 | .04532 | .48806 | .238 | -.410 | .225 | -.079 | .446 |
| (Tot) Developing others | 116 | 3.6775 | .04749 | .51144 | .262 | -.512 | .225 | .495 | .446 |
| (Tot) Inspirational leadership | 116 | 3.5629 | .04717 | .50803 | .258 | -.542 | .225 | .755 | .446 |
| (Tot) Change catalyst | 116 | 3.3186 | .04064 | .43766 | .192 | -.480 | .225 | .093 | .446 |
| (Tot) Influence | 116 | 3.5289 | .03921 | .42229 | .178 | -.655 | .225 | 1.097 | .446 |
| (Tot) Conflict management | 116 | 3.2358 | .03309 | .35637 | .127 | -.394 | .225 | .676 | .446 |
| (Tot) Teamwork and collaboration | 116 | 3.6658 | .04133 | .44512 | .198 | -.743 | .225 | 1.409 | .446 |

**Table E6:** **Descriptive Statistics for OCP Questionnaires filled in by the Technical Service Officer**

| | N | Mean | | Std. Deviation | Variance | Skewness | | Kurtosis | |
|---|---|---|---|---|---|---|---|---|---|
| | Statistic | Statistic | Std. Error | Statistic | Statistic | Statistic | Std. Error | Statistic | Std. Error |
| (TSO) Performance orientation | 118 | 3.8623 | .06060 | .65828 | .433 | -.352 | .223 | -.357 | .442 |
| (TSO) Social responsibility | 118 | 3.7013 | .06035 | .65556 | .430 | -.357 | .223 | .169 | .442 |
| (TSO) Supportiveness | 118 | 3.8284 | .05793 | .62932 | .396 | -.215 | .223 | -.523 | .442 |
| (TSO) Emphasis on rewards | 118 | 3.5869 | .06250 | .67888 | .461 | -.013 | .223 | -.130 | .442 |
| (TSO) Stability | 118 | 3.6780 | .05492 | .59656 | .356 | -.527 | .223 | .616 | .442 |
| (TSO) Competitiveness | 118 | 3.8284 | .06409 | .69622 | .485 | -.550 | .223 | .184 | .442 |
| (TSO) Innovation | 118 | 3.3962 | .06050 | .65725 | .432 | -.005 | .223 | .512 | .442 |

**Table E7:** Descriptive Statistics for OCP Questionnaire filled in by the Field Services Area Manager

| | N | Mean | | Std. Deviation | Variance | Skewness | | Kurtosis | |
|---|---|---|---|---|---|---|---|---|---|
| | Statistic | Statistic | Std. Error | Statistic | Statistic | Statistic | Std. Error | Statistic | Std. Error |
| (FSAM) Performance orientation | 113 | 3.5177 | .07534 | .80089 | .641 | -.261 | .227 | .238 | .451 |
| (FSAM) Social responsibility | 113 | 3.3982 | .06368 | .67698 | .458 | .063 | .227 | .219 | .451 |
| (FSAM) Supportiveness | 113 | 3.4137 | .06197 | .65871 | .434 | -.353 | .227 | .151 | .451 |
| (FSAM) Emphasis on rewards | 113 | 3.3341 | .05809 | .61746 | .381 | .238 | .227 | 1.189 | .451 |
| (FSAM) Stability | 113 | 3.3938 | .06553 | .69662 | .485 | -.254 | .227 | .336 | .451 |
| (FSAM) Competitiveness | 113 | 3.4248 | .07282 | .77408 | .599 | -.130 | .227 | -.162 | .451 |
| (FSAM) Innovation | 113 | 3.1814 | .06389 | .67913 | .461 | -.115 | .227 | -.466 | .451 |

**Table E8:    Descriptive Statistics for OCP Questionnaire filled in by the Field Services Engineer**

| | N | Mean | | Std. Deviation | Variance | Skewness | | Kurtosis | |
|---|---|---|---|---|---|---|---|---|---|
| | Statistic | Statistic | Std. Error | Statistic | Statistic | Statistic | Std. Error | Statistic | Std. Error |
| (FSE) Performance orientation | 106 | 3.3797 | .07702 | .79300 | .629 | -.190 | .235 | -.132 | .465 |
| (FSE) Social responsibility | 106 | 3.2665 | .06663 | .68597 | .471 | -.282 | .235 | .435 | .465 |
| (FSE) Supportiveness | 106 | 3.2901 | .06678 | .68759 | .473 | -.126 | .235 | -.075 | .465 |
| (FSE) Emphasis on rewards | 106 | 3.2783 | .06646 | .68428 | .468 | .084 | .235 | .043 | .465 |
| (FSE) Stability | 106 | 3.2193 | .06478 | .66700 | .445 | .005 | .235 | -.778 | .465 |
| (FSE) Competitiveness | 106 | 3.3373 | .07561 | .77846 | .606 | -.047 | .235 | -.111 | .465 |
| (FSE) Innovation | 106 | 3.0330 | .06368 | .65563 | .430 | -.056 | .235 | .480 | .465 |

**Table E9: Descriptive Statistics for OCP Questionnaire filled in by the Staff**

| | N | Mean | | Std. Deviation | Variance | Skewness | | Kurtosis | |
|---|---|---|---|---|---|---|---|---|---|
| | Statistic | Statistic | Std. Error | Statistic | Statistic | Statistic | Std. Error | Statistic | Std. Error |
| (Staff) Performance orientation | 118 | 3.7123 | .05314 | .57726 | .333 | -.679 | .223 | .937 | .442 |
| (Staff) Social responsibility | 118 | 3.5725 | .05067 | .55042 | .303 | -.355 | .223 | -.058 | .442 |
| (Staff) Supportiveness | 118 | 3.5344 | .05289 | .57457 | .330 | -.357 | .223 | -.095 | .442 |
| (Staff) Emphasis on rewards | 118 | 3.2633 | .05111 | .55515 | .308 | -.183 | .223 | -.576 | .442 |
| (Staff) Stability | 118 | 3.3686 | .04716 | .51228 | .262 | -.340 | .223 | -.041 | .442 |
| (Staff) Competitiveness | 118 | 3.5684 | .04717 | .51239 | .263 | -.103 | .223 | -.421 | .442 |
| (Staff) Innovation | 118 | 3.2424 | .04321 | .46935 | .220 | -.070 | .223 | -.247 | .442 |

**Table E10:**   **Descriptive Statistics for OCP Questionnaire filled in by Total (FSAM, FSE, TSO, Staff)**

| | N | Mean | | Std. Deviation | Variance | Skewness | | Kurtosis | |
|---|---|---|---|---|---|---|---|---|---|
| | Statistic | Statistic | Std. Error | Statistic | Statistic | Statistic | Std. Error | Statistic | Std. Error |
| (Tot) Performance orientation | 116 | 3.5796 | .04620 | .49757 | .248 | -.108 | .225 | -.383 | .446 |
| (Tot) Social responsibility | 116 | 3.4442 | .04390 | .47278 | .224 | -.150 | .225 | -.476 | .446 |
| (Tot) Supportiveness | 116 | 3.4755 | .04066 | .43792 | .192 | -.331 | .225 | -.308 | .446 |
| (Tot) Emphasis on rewards | 116 | 3.3219 | .04051 | .43629 | .190 | -.107 | .225 | -.339 | .446 |
| (Tot) Stability | 116 | 3.3748 | .04043 | .43540 | .190 | -.432 | .225 | .016 | .446 |
| (Tot) Competitiveness | 116 | 3.5015 | .04607 | .49620 | .246 | .051 | .225 | -.498 | .446 |
| (Tot) Innovation | 116 | 3.1828 | .03949 | .42537 | .181 | -.312 | .225 | -.185 | .446 |

**Table E11: Descriptive Statistics for TSO's Performance appraisal**

| | N | Mean | | Std. Deviation | Variance | Skewness | | Kurtosis | |
|---|---|---|---|---|---|---|---|---|---|
| | Statistic | Statistic | Std. Error | Statistic | Statistic | Statistic | Std. Error | Statistic | Std. Error |
| TSO's performance evaluation for 2005 | 117 | 3.6828 | .03177 | .34369 | .118 | -.125 | .224 | .078 | .444 |

## Section F1: Descriptive statistics for the moderator variables

After reviewing the Technical Service Centre data list, it was found that the sample population was reduced to 148 TSCs as the Central region did not participate in the TSC competition and therefore had to be excluded from the study sample. Of the 148 TSCs, 125 TSCs were visited and 118 TSCs had provided adequate data to be included in the analysis. Table F1 shows the age profile of the TSOs sampled, the frequency per age category, and the percentage contribution per age category and the cumulative percentages per age category. Of the 118 TSOs, 105 or 87.29% of the TSOs fall in the age categories 31 to 50 years old. This is an indication that the TSOs are fairly mature.

**Table F1: Age of TSO**

|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 26 to 30 yrs | 4 | 3.4 | 3.4 | 3.4 |
|  | 31 to 35 yrs | 15 | 12.7 | 12.7 | 16.1 |
|  | 36 to 40 yrs | 29 | 24.6 | 24.6 | 40.7 |
|  | 41 to 45 yrs | 34 | 28.8 | 28.8 | 69.5 |
|  | 46 to 50 yrs | 25 | 21.2 | 21.2 | 90.7 |
|  | 51 to 55 yrs | 10 | 8.5 | 8.5 | 99.2 |
|  | 56 to 60 yrs | 1 | .8 | .8 | 100.0 |
|  | Total | 118 | 100.0 | 100.0 |  |

Table F2 below shows the gender profile of the TSOs. Of the 118 TSOs employed 116 are male and only 2 females are employed.

**Table F2: TSO Gender**

|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Male | 116 | 98.3 | 98.3 | 98.3 |
|  | Female | 2 | 1.7 | 1.7 | 100.0 |
|  | Total | 118 | 100.0 | 100.0 |  |

Table F3 below shows the racial breakdown of the TSOs. Of the 118 TSOs employed, 47 or 39.8% are Black and 56 or 47.5% are White, 10 or 8.5% are Coloured, 4 or 3.4% are Asian while 1 or 0.8% represent other.

**Table F3: TSO race**

|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Black | 47 | 39.8 | 39.8 | 39.8 |
|  | White | 56 | 47.5 | 47.5 | 87.3 |
|  | Coloured | 10 | 8.5 | 8.5 | 95.8 |
|  | Asian | 4 | 3.4 | 3.4 | 99.2 |
|  | Other | 1 | .8 | .8 | 100.0 |
|  | Total | 118 | 100.0 | 100.0 |  |

Table F4 below elucidates the technical qualifications of the TSOs. Of the 118 TSOs sampled 114 or 96.4% have an N3 or higher qualification.

**Table F4: TSO Qualifications**

|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | N2 | 4 | 3.4 | 3.4 | 3.4 |
|  | N3 | 55 | 46.6 | 46.6 | 50.0 |
|  | N4 | 26 | 22.0 | 22.0 | 72.0 |
|  | N5 | 18 | 15.3 | 15.3 | 87.3 |
|  | N6 | 7 | 5.9 | 5.9 | 93.2 |
|  | BTECH | 6 | 5.1 | 5.1 | 98.3 |
|  | Other | 2 | 1.7 | 1.7 | 100.0 |
|  | Total | 118 | 100.0 | 100.0 |  |

Table F5 elucidates the number of years the TSO have been appointed in the position as TSO. More than 75% of the total sample has been in the TSO position for more than 3 years and more the 54.2% have been in the position for more than 6 years.

**Table F5: Years in TSO position**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Less than 1 yr | 5 | 4.2 | 4.2 | 4.2 |
| | 1 to 2 yrs | 10 | 8.5 | 8.5 | 12.7 |
| | 2 to 3 yrs | 12 | 10.2 | 10.2 | 22.9 |
| | 3 to 4 yrs | 13 | 11.0 | 11.0 | 33.9 |
| | 4 to 5 yrs | 14 | 11.9 | 11.9 | 45.8 |
| | Greater than 6 yrs | 64 | 54.2 | 54.2 | 100.0 |
| | Total | 118 | 100.0 | 100.0 | |

Table F6 elucidates the number of years the TSOs have worked for the organisation. It is clear that 105 or 89% of the TSOs have been working in the organisation for more than 6 years and it can be assumed that they have been socialised in the organisational way.

**Table F6: Number of years employed by the organisation**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Less than 1 yr | 1 | .8 | .8 | .8 |
| | 3 to 4 yrs | 1 | .8 | .8 | 1.7 |
| | 4 to 5 yrs | 4 | 3.4 | 3.4 | 5.1 |
| | 5 to 6 yrs | 7 | 5.9 | 5.9 | 11.0 |
| | Greater than 6 yrs | 105 | 89.0 | 89.0 | 100.0 |
| | Total | 118 | 100.0 | 100.0 | |

Table F7 and Figure F7 show the numbers of employees that report to the TSO directly. Of the 118 TSCs sampled more than 90% of them have more than 16 employees reporting to them.

**Table F7: Number of employees**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 11 to 15 people | 10 | 8.5 | 8.5 | 8.5 |
| | 16 to 20 people | 26 | 22.0 | 22.0 | 30.5 |
| | 21 to 25 people | 25 | 21.2 | 21.2 | 51.7 |
| | 26 to 30 people | 22 | 18.6 | 18.6 | 70.3 |
| | Greater than 30 people | 35 | 29.7 | 29.7 | 100.0 |
| | Total | 118 | 100.0 | 100.0 | |

Table F8 shows the number of year the TSCs have been in existence for. Of the 118 TSCs, 115 have existed for more than 6 years.

**Table F8: Number of year that the TSC has been in existence**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 3 to 4 yrs | 1 | .8 | .8 | .8 |
| | 4 to 5 yrs | 2 | 1.7 | 1.7 | 2.5 |
| | Greater than 6 yrs | 115 | 97.5 | 97.5 | 100.0 |
| | Total | 118 | 100.0 | 100.0 | |

## Section F2: Excluded moderator variables

Table F9, TSO gender and Table F10, number of years the TSO has been employed by the organisation have both being excluded from the analysis due to the uneven distribution of male and female respondents. TSOs have work for the organisation for more than 6 years.

**Table F9: TSO Gender**

| | | Frequency | Percent | Valid Percent |
|---|---|---|---|---|
| Valid | Male | 114 | 96.6 | 98.3 |
| | Female | 2 | 1.7 | 1.7 |
| | Total | 116 | 98.3 | 100.0 |
| Missing | 0 | 1 | .8 | |
| | 5 | 1 | .8 | |
| | Total | 2 | 1.7 | |
| Total | | 118 | 100.0 | |

**Table F10: Number of years employed by the organisation**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Less than 1 yr | 1 | .8 | .9 | .9 |
| | 3 to 4 yrs | 1 | .8 | .9 | 1.7 |
| | 4 to 5 yrs | 4 | 3.4 | 3.4 | 5.1 |
| | 5 to 6 yrs | 6 | 5.1 | 5.1 | 10.3 |
| | Greater than 6 yrs | 105 | 89.0 | 89.7 | 100.0 |
| | Total | 117 | 99.2 | 100.0 | |
| Missing | .00 | 1 | .8 | | |
| Total | | 118 | 100.0 | | |

## Section F3: Moderator variables Recategorised

One common situation faced by researchers is the presence of nonmetric independent variables. There are two forms of dummy variable coding, the most common being indicator coding, in which the category is represented by either 0 or 1. The regression coefficient for the dummy variable represent differences between means for each group of respondents formed by a dummy variable from the reference category on the dependent variable.

The moderator variables presented above have been recategorised into dummy variables (0 and 1) so that they can be used in the t-Test and in the linear regression that follow below. Table F11 which represents the age of the TSOs is recoded into two groups with assumed equal variance i.e.

      0 = TSO less than 41 years

      1 = TSO greater than and equal to 41 years

**Table F11: (R) Age of TSO**

| | | Frequency | Percent | Valid Percent |
|---|---|---|---|---|
| Valid | Less than 41 yrs | 48 | 40.7 | 41.0 |
| | 41 yrs or greater | 69 | 58.5 | 59.0 |
| | Total | 117 | 99.2 | 100.0 |
| Missing | 0 | 1 | .8 | |
| Total | | 118 | 100.0 | |

TSO race had to be recoded into only two groups i.e.

      0 = Black

      1 = White

Note the other race groups (Asian=4, Coloured=10 and other=1) as in Table F12 have been removed from the analysis as there too few to be considered in the analysis.

**Table F12: (R) TSO race**

| | | Frequency | Percent | Valid Percent |
|---|---|---|---|---|
| Valid | Black | 45 | 38.1 | 44.6 |
| | White | 56 | 47.5 | 55.4 |
| | Total | 101 | 85.6 | 100.0 |
| Missing | 0 | 2 | 1.7 | |
| | Coloured | 10 | 8.5 | |
| | Asian | 4 | 3.4 | |
| | Other | 1 | .8 | |
| | Total | 17 | 14.4 | |
| Total | | 118 | 100.0 | |

TSO qualifications have been recoded into two groups (Table F13)

   0 = TSO with an N3 and less

   1 = TSO with an N4 or greater

**Table F13: (R) TSO qualifications**

| | | Frequency | Percent | Valid Percent |
|---|---|---|---|---|
| Valid | N3 or less | 58 | 49.2 | 50.4 |
| | N4 or more | 57 | 48.3 | 49.6 |
| | Total | 115 | 97.5 | 100.0 |
| Missing | 0 | 1 | .8 | |
| | Other | 2 | 1.7 | |
| | Total | 3 | 2.5 | |
| Total | | 118 | 100.0 | |

The number of years that the TSO has worked in this position is also recoded into a dichotomous variable with (Table F14)

   0 = TSO in the position for less than 5 years

   1 = TSO in the position greater than and equal to 5 years

**Table F14: (R) Years in TSO position**

|  |  | Frequency | Percent | Valid Percent |
|---|---|---|---|---|
| Valid | 1 to 5 years | 53 | 44.9 | 45.3 |
|  | Greater than 6 yrs | 64 | 54.2 | 54.7 |
|  | Total | 117 | 99.2 | 100.0 |
| Missing | 0 | 1 | 0.8 |  |
| Total | | 118 | 100.0 |  |

Table F15 shows the recoded dichotomous groups for the number of employees reporting to the TSO.

      0 = less than 25 employees

      1 = greater than and equal to 25 employees

**Table F15: (R) Nunber of employees**

|  |  | Frequency | Percent | Valid Percent |
|---|---|---|---|---|
| Valid | 25 people or less | 61 | 51.7 | 52.1 |
|  | Greater than 25 people | 56 | 47.5 | 47.9 |
|  | Total | 117 | 99.2 | 100.0 |
| Missing | 0 | 1 | 0.8 |  |
| Total | | 118 | 100.0 |  |

# APPENDIX G: MODERATOR VARIABLES APPLIED TO ECI, OCP AND ORGANISATIONAL PERFORMANCE USING T-TEST

## 1.1    Testing (t-Test): Moderator variable on ECI
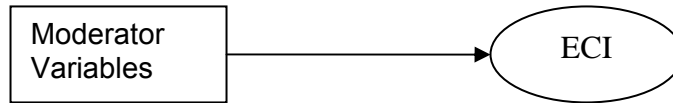


**Figure G1: Moderator variable effects on ECI**

A *t-Test* is appropriate when your analysis involves a single predictor variable that is measured on a nominal scale and assumes only two values, and a single criterion variable that is measured on an interval or ratio scale. This is usually viewed as a test of group differences.

### 1.1.1    (R) – Age of the TSO

You can state the null hypothesis in this section of the study as follows: "In this population, there is no difference between the TSO age group less than 41 years and the TSO age group greater than  and equal to 41 years with respect to their mean scores on the ECI variables". Symbolically, the null hypothesis can be represented in this way:

$$H0: M1=M2$$

M1 =    mean ECI score for the population of TSO's on the less than 41 year age group

M2 =     mean ECI score for the population of TSO's on the greater than and equal to 41 year age group

**1.1.1.1 Group statistics**

Table G1 summarises the descriptive statistics for the two age groups of the TSO with the 18 ECI dependent variables. For example, the mean emotional self awareness score for the TSO age group less than 41 years is 3.5425 with a standard deviation of 0.4104. The mean

score for the age group 41 years or greater is 3.4759 with the standard deviation of 0,0348. Next, the independent sample t-Test table G2 is reviewed below.

**Table G1: t-Test: Group Statistics for (R)- Age of the TSO and the ECI**

| | (R) Age of TSO | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| (Tot) Emotional self awareness | Less than 41 yrs | 47 | 3.5425 | .41039 | .05986 |
| | 41 yrs or greater | 68 | 3.4759 | .32557 | .03948 |
| (Tot) Accurate self assessment | Less than 41 yrs | 47 | 3.5570 | .44350 | .06469 |
| | 41 yrs or greater | 68 | 3.4943 | .39231 | .04757 |
| (Tot) Self confidence | Less than 41 yrs | 47 | 3.7844 | .48649 | .07096 |
| | 41 yrs or greater | 68 | 3.8065 | .43559 | .05282 |
| (Tot) Emotional self control | Less than 41 yrs | 47 | 3.4943 | .45744 | .06672 |
| | 41 yrs or greater | 68 | 3.3565 | .43780 | .05309 |
| (Tot) Transparency | Less than 41 yrs | 47 | 3.5754 | .46485 | .06780 |
| | 41 yrs or greater | 68 | 3.5387 | .42316 | .05132 |
| (Tot) Adaptability | Less than 41 yrs | 47 | 3.5773 | .43673 | .06370 |
| | 41 yrs or greater | 68 | 3.5354 | .38651 | .04687 |
| (Tot) Achievement orientation | Less than 41 yrs | 47 | 3.6388 | .47781 | .06970 |
| | 41 yrs or greater | 68 | 3.6219 | .47335 | .05740 |
| (Tot) Initiative | Less than 41 yrs | 47 | 3.2199 | .43784 | .06387 |
| | 41 yrs or greater | 68 | 3.2346 | .37482 | .04545 |
| (Tot) Optimism | Less than 41 yrs | 47 | 3.7589 | .47093 | .06869 |
| | 41 yrs or greater | 68 | 3.5360 | .43676 | .05296 |
| (Tot) Empathy | Less than 41 yrs | 47 | 3.7006 | .47617 | .06946 |
| | 41 yrs or greater | 68 | 3.5790 | .42758 | .05185 |
| (Tot) Organisational awareness | Less than 41 yrs | 47 | 3.5612 | .43122 | .06290 |
| | 41 yrs or greater | 68 | 3.5544 | .38911 | .04719 |
| (Tot) Service orientation | Less than 41 yrs | 47 | 3.9079 | .50970 | .07435 |
| | 41 yrs or greater | 68 | 3.9731 | .47820 | .05799 |

|  | (R) Age of TSO | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| (Tot) Developing others | Less than 41 yrs | 47 | 3.7079 | .53552 | .07811 |
|  | 41 yrs or greater | 68 | 3.6526 | .49975 | .06060 |
| (Tot) Inspirational leadership | Less than 41 yrs | 47 | 3.6107 | .55965 | .08163 |
|  | 41 yrs or greater | 68 | 3.5287 | .47442 | .05753 |
| (Tot) Change catalyst | Less than 41 yrs | 47 | 3.4344 | .43360 | .06325 |
|  | 41 yrs or greater | 68 | 3.2322 | .42419 | .05144 |
| (Tot) Influence | Less than 41 yrs | 47 | 3.5483 | .45669 | .06661 |
|  | 41 yrs or greater | 68 | 3.5085 | .39862 | .04834 |
| (Tot) Conflict management | Less than 41 yrs | 47 | 3.2210 | .40780 | .05948 |
|  | 41 yrs or greater | 68 | 3.2422 | .32027 | .03884 |
| (Tot) Teamwork and collaboration | Less than 41 yrs | 47 | 3.7066 | .44727 | .06524 |
|  | 41 yrs or greater | 68 | 3.6318 | .44504 | .05397 |

**1.1.1.2 Independent Samples Test (Equal variance assumed)**

The output for the independent group t-Test in SPSS is somewhat confusing because there are two versions of the independent samples t-Test. The one you should use depends on whether the estimated variance for the two groups of scores are significantly different or not. Reading the columns under the heading "Levene's test of equality of variance" in Table G2 , if the probability value is statistically significant (p<0.05), then your variances are unequal. Otherwise they are equal. Levene's test of equality of variance in this case tells us that the variances between the two TSO age group are not all equal (p>0.05). Reviewing the 2-tailed significance for the TSO optimism (p=0.010) and change catalyst (p=0.014) you are able to reject the null hypothesis of no population difference for the above two dimensions of ECI. For the remaining ECI dimensions we accept the null hypothesis of equal variance.

**Table G2: Independent Samples Test for Age of the TSO and ECI**

| | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
| | | | | | | | | 95% Confidence Interval of the Difference | |
| | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | Lower | Upper |
|---|---|---|---|---|---|---|---|---|---|
| (Tot) Emotional self awareness. | 1.654 | .201 | .969 | 113 | .335 | .06664 | .06876 | -.06960 | .20287 |
| (Tot) Accurate self assessment. | .942 | .334 | .799 | 113 | .426 | .06270 | .07852 | -.09285 | .21826 |
| (Tot) Self confidence. | .388 | .535 | -.255 | 113 | .799 | -.02211 | .08669 | -.19385 | .14963 |
| (Tot) Emotional self control. | .019 | .890 | 1.629 | 113 | .106 | .13782 | .08458 | -.02975 | .30539 |
| (Tot) Transparency. | .763 | .384 | .439 | 113 | .662 | .03668 | .08358 | -.12891 | .20226 |
| (Tot) Adaptability. | .449 | .504 | .541 | 113 | .589 | .04186 | .07734 | -.11135 | .19508 |
| (Tot) Achievement orientation | .618 | .433 | .187 | 113 | .852 | .01685 | .09014 | -.16173 | .19542 |
| (Tot) Initiative. | .411 | .523 | -.192 | 113 | .848 | -.01463 | .07619 | -.16558 | .13632 |
| (Tot) Optimism. | .473 | .493 | 2.605 | 113 | .010 | .22287 | .08555 | .05339 | .39235 |
| (Tot) | .322 | .572 | 1.432 | 113 | .155 | .12165 | .08498 | - | .29001 |

| | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | F | Sig. | t | df | | | | Lower | Upper |
| Empathy. | | | | | | | | .04671 | |
| (Tot) Organisational awareness. | .009 | .923 | .089 | 113 | .930 | .00683 | .07716 | -.14604 | .15970 |
| (Tot) Service orientation. | 1.167 | .282 | -.700 | 113 | .485 | -.06523 | .09319 | -.24986 | .11939 |
| (Tot) Developing others. | .067 | .796 | .566 | 113 | .572 | .05528 | .09762 | -.13812 | .24868 |
| (Tot) Inspirational leadership. | 2.152 | .145 | .846 | 113 | .399 | .08202 | .09690 | -.10996 | .27399 |
| (Tot) Change Catalyst. | .003 | .954 | 2.490 | 113 | .014 | .20219 | .08120 | .04133 | .36306 |
| (Tot) Influence. | .671 | .414 | .496 | 113 | .621 | .03980 | .08028 | -.11925 | .19885 |
| (Tot) Conflict management. | 2.142 | .146 | -.312 | 113 | .755 | -.02123 | .06800 | -.15596 | .11349 |
| (Tot) Teamwork and collaboration. | .241 | .625 | .885 | 113 | .378 | .07488 | .08459 | -.09271 | .24248 |

## 1.1.2  (R) – Race of TSO

You can state the null hypothesis in this section of the study as follows: "In this population of, there is no difference between the TSO race group White and the TSO race group Blacks with respect to their mean scores on the ECI variables". Symbolically, the null hypothesis can be represented in this way:

$$H0: M1=M2$$

M1 =   mean ECI score for the population of White TSOs

M2 =    mean ECI score for the population of Black TSOs

### 1.1.2.1 Group statistics

Table G3 summarises the descriptive statistics for the two major races of the TSOs on the 18 ECI dependent variables. For example, the mean emotional self awareness score for the White TSO race group is 3.5845 with a standard deviation of 0.3150.  Similarly, the mean emotional self awareness score for the Black TSO race group is 3.4025 with a standard deviation of 0.3979. Next, the independent sample t-Test Table G4 is reviewed below.

**Table G3: t-Test: Group Statistics for Race of the TSO and the ECI**

|  | (REG) TSO race | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| (Tot) Emotional self awareness. | White | 56 | 3.5845 | .31502 | .04210 |
|  | Black | 43 | 3.4025 | .39792 | .06068 |
| (Tot) Accurate self assessment. | White | 56 | 3.6264 | .34260 | .04578 |
|  | Black | 43 | 3.4016 | .49230 | .07507 |
| (Tot) Self confidence. | White | 56 | 4.0089 | .35097 | .04690 |
|  | Black | 43 | 3.5617 | .45100 | .06878 |

| | (REG) TSO race | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| (Tot) Emotional self control. | White | 56 | 3.4591 | .42839 | .05725 |
| | Black | 43 | 3.3761 | .49389 | .07532 |
| (Tot) Transparency. | White | 56 | 3.7336 | .29913 | .03997 |
| | Black | 43 | 3.3582 | .48955 | .07466 |
| (Tot) Adaptability. | White | 56 | 3.6923 | .33029 | .04414 |
| | Black | 43 | 3.3961 | .42004 | .06406 |
| (Tot) Achievement orientation. | White | 56 | 3.8211 | .35609 | .04758 |
| | Black | 43 | 3.3766 | .47243 | .07205 |
| (Tot) Initiative. | White | 56 | 3.3711 | .31562 | .04218 |
| | Black | 43 | 3.0471 | .38435 | .05861 |
| (Tot) Optimism. | White | 56 | 3.6818 | .44526 | .05950 |
| | Black | 43 | 3.5462 | .48862 | .07451 |
| (Tot) Empathy. | White | 56 | 3.6829 | .41419 | .05535 |
| | Black | 43 | 3.5302 | .49495 | .07548 |
| (Tot) Organisational | White | 56 | 3.6538 | .35425 | .04734 |

| | (REG) TSO race | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| awareness. | Black | 43 | 3.4418 | .44194 | .06740 |
| (Tot) Service orientation. | White | 56 | 4.1725 | .37355 | .04992 |
| | Black | 43 | 3.6809 | .50944 | .07769 |
| (Tot) Developing others. | White | 56 | 3.8391 | .44735 | .05978 |
| | Black | 43 | 3.4577 | .51839 | .07905 |
| (Tot) Inspirational leadership. | White | 56 | 3.7279 | .41629 | .05563 |
| | Black | 43 | 3.3626 | .54030 | .08239 |
| (Tot) Change Catalyst. | White | 56 | 3.3479 | .43081 | .05757 |
| | Black | 43 | 3.2420 | .45592 | .06953 |
| (Tot) Influence. | White | 56 | 3.6584 | .33348 | .04456 |
| | Black | 43 | 3.3482 | .45822 | .06988 |
| (Tot) Conflict management. | White | 56 | 3.3263 | .30147 | .04029 |
| | Black | 43 | 3.0920 | .38818 | .05920 |
| (Tot) Teamwork and collaboration. | White | 56 | 3.7914 | .35614 | .04759 |
| | Black | 43 | 3.5147 | .52012 | .07932 |

**1.1.2.2 Independent Samples Test**

Reading the columns under the heading "Levene's test of equality of variance" in Table G4, if the probability value is statistically significant (p<0.05), then your variances are unequal. Otherwise they are equal. Levene's test of equality of variance in this case tells us that the variances between the two race groups are not all equal (p>0.05). Of the 18 ECI dimensions measured, on fourteen dimensions which are Emotional self-awareness (p=0.013), Accurate self-assessment (p=0.009), Self-confidence (p=0.000), Transparency (p=0.000); Adaptability (p=0.000), Achievement orientation (p=0.000), Initiative (p=0.000), Organisational awareness (p=0.009), Service orientation (p=0.000), Developing others (p=0.000), Inspirational Leadership (p=0.000), Influence (p=0.000), Conflict management (p=0.001) and Teamwork and collaboration (p=0.002) have p-values for the 2-tailed significance that are highly significant and therefore the variances are unequal. Remember, that, anytime you obtain a p-value less than 0.05, one rejects the null hypothesis, because ones obtained p-value is so small, one is able to reject the null hypothesis of no population difference in the above ECI dimensions (Hatcher & Stepanski, 2001). You may therefore conclude that there is a difference in ECI scores between the Black and White race groups for the dimensions mentioned above.

**Table G4: Independent Samples Test for Race of the TSO and ECI**

| | | Levene's Test for Equality of Variances | | t-Test for Equality of Means | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | F | Sig. | T | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| (Tot) Emotional self awareness. | Equal variances assumed | 1.739 | .190 | 2.540 | 97 | .013 | .18194 | .07164 | .03976 | .32413 |
| | Equal variances not | | | 2.464 | 78.303 | .016 | .18194 | .07385 | .03492 | .32897 |

| | | Levene's Test for Equality of Variances | | t-Test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig. | T | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| | assumed | | | | | | | | | |
| (Tot) Accurate self assessment. | Equal variances assumed | 4.328 | .040 | 2.678 | 97 | .009 | .22486 | .08397 | .05821 | .39151 |
| | Equal variances not assumed | | | 2.557 | 71.496 | .013 | .22486 | .08793 | .04955 | .40017 |
| (Tot) Self confidence. | Equal variances assumed | 1.238 | .269 | 5.550 | 97 | .000 | .44718 | .08057 | .28727 | .60710 |
| | Equal variances not assumed | | | 5.372 | 77.367 | .000 | .44718 | .08325 | .28143 | .61294 |
| (Tot) Emotional self control. | Equal variances assumed | .853 | .358 | .894 | 97 | .373 | .08302 | .09285 | -.10125 | .26729 |
| | Equal variances not assumed | | | .878 | 83.311 | .383 | .08302 | .09460 | -.10513 | .27117 |
| (Tot) Transparency. | Equal variances assumed | 11.507 | .001 | 4.710 | 97 | .000 | .37539 | .07970 | .21721 | .53358 |

| | | Levene's Test for Equality of Variances | | t-Test for Equality of Means | | | | | | |
| | | F | Sig. | T | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
|---|---|---|---|---|---|---|---|---|---|---|
| | Equal variances not assumed | | | 4.433 | 65.427 | .000 | .37539 | .08468 | .20629 | .54450 |
| (Tot) Adaptability. | Equal variances assumed | 1.844 | .178 | 3.929 | 97 | .000 | .29620 | .07539 | .14657 | .44583 |
| | Equal variances not assumed | | | 3.808 | 77.934 | .000 | .29620 | .07779 | .14133 | .45107 |
| (Tot) Achievement Orientation. | Equal variances assumed | 2.659 | .106 | 5.340 | 97 | .000 | .44452 | .08324 | .27931 | .60973 |
| | Equal variances not assumed | | | 5.148 | 75.643 | .000 | .44452 | .08634 | .27254 | .61650 |
| (Tot) Initiative. | Equal variances assumed | .181 | .671 | 4.603 | 97 | .000 | .32394 | .07037 | .18427 | .46360 |
| | Equal variances not assumed | | | 4.486 | 80.312 | .000 | .32394 | .07221 | .18024 | .46763 |

| | | Levene's Test for Equality of Variances | | t-Test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | **F** | **Sig.** | **T** | **df** | **Sig. (2-tailed)** | **Mean Difference** | **Std. Error Difference** | **95% Confidence Interval of the Difference** | |
| | | | | | | | | | **Lower** | **Upper** |
| **(Tot) Optimism.** | **Equal variances assumed** | .451 | .504 | 1.439 | 97 | .153 | .13555 | .09419 | -.05140 | .32249 |
| | **Equal variances not assumed** | | | 1.421 | 85.951 | .159 | .13555 | .09536 | -.05402 | .32511 |
| **(Tot) Empathy.** | **Equal variances assumed** | 1.046 | .309 | 1.669 | 97 | .098 | .15264 | .09143 | -.02883 | .33411 |
| | **Equal variances not assumed** | | | 1.631 | 81.351 | .107 | .15264 | .09360 | -.03357 | .33886 |
| **(Tot) Organisational awareness** | **Equal variances assumed** | .735 | .393 | 2.649 | 97 | <u>.009</u> | .21193 | .08001 | .05312 | .37073 |
| | **Equal variances not assumed** | | | 2.573 | 78.985 | .012 | .21193 | .08236 | .04800 | .37586 |
| **(Tot) Service orientation.** | **Equal variances assumed** | 4.924 | .029 | 5.540 | 97 | <u>.000</u> | .49159 | .08873 | .31549 | .66769 |
| | **Equal variances** | | | 5.323 | 74.182 | .000 | .49159 | .09234 | .30760 | .67558 |

| | | Levene's Test for Equality of Variances | | t-Test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig. | T | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| | not assumed | | | | | | | | | |
| (Tot) Developing others. | Equal variances assumed | .254 | .615 | 3.923 | 97 | <u>.000</u> | .38137 | .09721 | .18845 | .57430 |
| | Equal variances not assumed | | | 3.848 | 83.034 | .000 | .38137 | .09911 | .18425 | .57850 |
| (Tot) Inspirational leadership. | Equal variances assumed | 2.029 | .158 | 3.800 | 97 | <u>.000</u> | .36524 | .09611 | .17450 | .55598 |
| | Equal variances not assumed | | | 3.674 | 76.826 | .000 | .36524 | .09942 | .16727 | .56321 |
| (Tot) Change Catalyst. | Equal variances assumed | 1.286 | .260 | 1.181 | 97 | .240 | .10584 | .08959 | -.07197 | .28366 |
| | Equal variances not assumed | | | 1.173 | 87.812 | .244 | .10584 | .09027 | -.07355 | .28523 |
| (Tot) Influence. | Equal variances assumed | 3.270 | .074 | 3.899 | 97 | <u>.000</u> | .31021 | .07956 | .15230 | .46812 |

| | | Levene's Test for Equality of Variances | | t-Test for Equality of Means | | | | | 95% Confidence Interval of the Difference | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig. | T | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | Lower | Upper |
| | Equal variances not assumed | | | 3.743 | 73.789 | .000 | .31021 | .08288 | .14507 | .47536 |
| (Tot) Conflict management. | Equal variances assumed | 1.312 | .255 | 3.381 | 97 | .001 | .23425 | .06929 | .09673 | .37177 |
| | Equal variances not assumed | | | 3.271 | 77.256 | .002 | .23425 | .07160 | .09168 | .37683 |
| (Tot) Teamwork and collaboration. | Equal variances assumed | 3.094 | .082 | 3.139 | 97 | .002 | .27672 | .08816 | .10174 | .45169 |
| | Equal variances not assumed | | | 2.992 | 70.688 | .004 | .27672 | .09250 | .09227 | .46117 |

### 1.1.3 (R) TSO Qualifications

You can state the null hypothesis in this section of the study as follows: "In this population of, there is no difference between the TSO educational qualification group with less than N3 and the TSO qualification with greater than and equal to an N3 with respect to their mean scores on the ECI variables". Symbolically, the null hypothesis can be represented in this way:

$$H0: M1=M2$$

M1 =   mean ECI score for the population of TSOs with educational qualifications less than and N3

M2 =   mean ECI score for the population of TSOs with educational qualifications greater than and equal to N3

### 1.1.3.1 Group statistics

Table G5 summarises the descriptive statistics for the two major TSO educational qualification groups on the 18 ECI dependent variables. For example, the mean emotional self awareness score for the TSO educational group less than an N3 is 3.4619 with a standard deviation of 0.04971.  Similarly, the mean emotional self awareness score for the TSO educational group greater than and equal to N3 is 3.5407 with a standard deviation of 0.34834. Next, we review the independent sample t-Test Table G6 below.

**Table G5: t-Test: Group Statistics for Qualification of the TSO and the ECI**

|  | (R) TSO qualifications | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| (Tot) Emotional self awareness. | N3 or less | 58 | 3.4619 | .37858 | .04971 |
|  | N4 or more | 55 | 3.5407 | .34834 | .04697 |
| (Tot) Accurate self assessment. | N3 or less | 58 | 3.5279 | .42887 | .05631 |
|  | N4 or more | 55 | 3.5010 | .40256 | .05428 |

| | (R) TSO qualifications | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| (Tot) Self confidence. | N3 or less | 58 | 3.7636 | .45212 | .05937 |
| | N4 or more | 55 | 3.8212 | .46278 | .06240 |
| (Tot) Emotional self control. | N3 or less | 58 | 3.4097 | .42933 | .05637 |
| | N4 or more | 55 | 3.3960 | .46818 | .06313 |
| (Tot) Transparency. | N3 or less | 58 | 3.5593 | .40968 | .05379 |
| | N4 or more | 55 | 3.5375 | .47554 | .06412 |
| (Tot) Adaptability. | N3 or less | 58 | 3.5360 | .42659 | .05601 |
| | N4 or more | 55 | 3.5628 | .38828 | .05236 |
| (Tot) Achievement orientation. | N3 or less | 58 | 3.6045 | .45770 | .06010 |
| | N4 or more | 55 | 3.6497 | .49799 | .06715 |
| (Tot) Initiative. | N3 or less | 58 | 3.2100 | .40342 | .05297 |
| | N4 or more | 55 | 3.2550 | .40197 | .05420 |
| (Tot) Optimism. | N3 or less | 58 | 3.6409 | .46545 | .06112 |
| | N4 or more | 55 | 3.6109 | .46460 | .06265 |
| (Tot) Empathy. | N3 or less | 58 | 3.6036 | .44755 | .05877 |

| | (R) TSO qualifications | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| | N4 or more | 55 | 3.6445 | .45118 | .06084 |
| (Tot) An organisational awareness. | N3 or less | 58 | 3.5414 | .39698 | .05213 |
| | N4 or more | 55 | 3.5540 | .40983 | .05526 |
| (Tot) Service orientation. | N3 or less | 58 | 3.9328 | .47697 | .06263 |
| | N4 or more | 55 | 3.9505 | .51358 | .06925 |
| (Tot) Developing others. | N3 or less | 58 | 3.6590 | .54177 | .07114 |
| | N4 or more | 55 | 3.6775 | .48924 | .06597 |
| (Tot) Inspirational leadership. | N3 or less | 58 | 3.5409 | .53133 | .06977 |
| | N4 or more | 55 | 3.5755 | .49771 | .06711 |
| (Tot) Change catalyst. | N3 or less | 58 | 3.3347 | .43567 | .05721 |
| | N4 or more | 55 | 3.2890 | .44701 | .06027 |
| (Tot) Influence. | N3 or less | 58 | 3.4753 | .42023 | .05518 |
| | N4 or more | 55 | 3.5575 | .41497 | .05595 |
| (Tot) Conflict management. | N3 or less | 58 | 3.1950 | .33639 | .04417 |
| | N4 or more | 55 | 3.2712 | .38135 | .05142 |

| | (R) TSO qualifications | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| (Tot) Teamwork and collaboration. | N3 or less | 58 | 3.6529 | .47928 | .06293 |
| | N4 or more | 55 | 3.6559 | .40952 | .05522 |

### 1.1.3.2. Independent Samples Test

Reading the columns under the heading "Levene's test of equality of variance" in Table G6 below, if the probability value is statistically significant (p<0.05), then your variances are unequal. Otherwise they are equal. Levene's test of equality of variance in this case tells us that the variances between the two TSO educational qualifications group are all equal (p>0.05).  We accept the null hypothesis of equal variance.

**Table G6: Independent Samples Test for Qualification of the TSO and ECI**

| | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | 95%    Confidence Interval    of    the Difference | |
|---|---|---|---|---|---|---|---|---|---|
| | F | Sig. | T | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | Lower | Upper |
| (Tot) Emotional self awareness. | .855 | .357 | -1.150 | 111 | .253 | -.07880 | .06854 | -.21462 | .05702 |
| (Tot) Accurate self assessment. | .000 | .990 | .343 | 111 | .732 | .02689 | .07835 | -.12837 | .18214 |
| (Tot) Self confidence. | .265 | .608 | -.669 | 111 | .505 | -.05756 | .08608 | -.22813 | .11300 |
| (Tot) Emotional self control. | 1.211 | .274 | .161 | 111 | .872 | .01362 | .08444 | -.15370 | .18095 |

| | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | 95% Confidence Interval of the Difference | |
|---|---|---|---|---|---|---|---|---|---|---|
| | F | Sig. | T | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | | Lower | Upper |
| (Tot) Transparency. | 1.757 | .188 | .262 | 111 | .794 | .02183 | .08337 | | -.14337 | .18702 |
| (Tot) Adaptability. | .361 | .549 | -.348 | 111 | .728 | -.02675 | .07687 | | -.17907 | .12556 |
| (Tot) Achievement orientation. | .725 | .396 | -.503 | 111 | .616 | -.04518 | .08991 | | -.22335 | .13298 |
| (Tot) Initiative. | .548 | .461 | -.594 | 111 | .554 | -.04503 | .07579 | | -.19522 | .10516 |
| (Tot) Optimism. | .674 | .413 | .343 | 111 | .733 | .02998 | .08752 | | -.14345 | .20342 |
| (Tot) Empathy. | .000 | .994 | -.484 | 111 | .630 | -.04091 | .08457 | | -.20848 | .12667 |
| (Tot) Organisational awareness. | .133 | .716 | -.166 | 111 | .869 | -.01259 | .07590 | | -.16299 | .13781 |
| (Tot) Service orientation. | .493 | .484 | -.191 | 111 | .849 | -.01777 | .09319 | | -.20243 | .16688 |
| (Tot) Developing others. | .680 | .411 | -.191 | 111 | .849 | -.01853 | .09728 | | -.21131 | .17424 |
| (Tot) Inspirational leadership. | .146 | .703 | -.357 | 111 | .722 | -.03464 | .09698 | | -.22680 | .15753 |
| (Tot) Change catalyst. | .181 | .671 | .549 | 111 | .584 | .04562 | .08304 | | -.11893 | .21018 |
| (Tot) Influence. | .005 | .946 | -1.045 | 111 | .298 | -.08214 | .07861 | | -.23791 | .07363 |
| (Tot) Conflict management. | .033 | .855 | -1.128 | 111 | .262 | -.07620 | .06756 | | -.21007 | .05768 |
| (Tot) Teamwork and collaboration. | .490 | .485 | -.035 | 111 | .972 | -.00293 | .08408 | | -.16953 | .16367 |

### 1.1.4 (R) – Years in TSO position

You can state the null hypothesis in this section of the study as follows: "In this population of TSOs, there is no difference between the years in the TSO position group less than 5 years and the years in the TSO position group greater than and equal to an 5 years with respect to their mean scores on the ECI variables". Symbolically, the null hypothesis can be represented in this way:

$$H0: M1=M2$$

M1 =    mean ECI score for the population of years in the TSO position group less than 5 years

M2 =    mean ECI score for the population of years in the TSO position greater than and equal to 5 years

### 1.1.4.1 Group Statistics

Table G7 summarises the descriptive statistics for the years in the TSO position on the 18 ECI dependent variables. For example, the mean emotional self awareness score for less than 5 years group is 3.4331 with a standard deviation of 0.5415.  Similarly, the mean emotional self awareness score for the greater than and equal to 5 year group is 3.5609 with a standard deviation of 0.04151. Next, we review the independent sample t-Test Table G7 below.

**Table G7: t-Test: Group Statistics for Years in TSO position and the ECI**

|  | (R) Yrs in TSO position | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| (Tot) Emotional self awareness. | 1 to 5 years | 52 | 3.4331 | .39045 | .05415 |
|  | Greater than 6 yrs | 63 | 3.5609 | .32951 | .04151 |
| (Tot) Accurate self assessment. | 1 to 5 years | 52 | 3.4869 | .47013 | .06520 |
|  | Greater than 6 yrs | 63 | 3.5471 | .36130 | .04552 |

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| | (R) Yrs in TSO position | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| (Tot) Self confidence. | 1 to 5 years | 52 | 3.7167 | .48532 | .06730 |
| | Greater than 6 yrs | 63 | 3.8640 | .42087 | .05302 |
| (Tot) Emotional self control. | 1 to 5 years | 52 | 3.4175 | .47066 | .06527 |
| | Greater than 6 yrs | 63 | 3.4089 | .43433 | .05472 |
| (Tot) Transparency. | 1 to 5 years | 52 | 3.5023 | .43597 | .06046 |
| | Greater than 6 yrs | 63 | 3.5961 | .44050 | .05550 |
| (Tot) Adaptability. | 1 to 5 yrs | 52 | 3.4831 | .45881 | .06363 |
| | Greater than 6 yrs | 63 | 3.6099 | .35098 | .04422 |
| (Tot) Achievement orientation. | 1 to 5 yrs | 52 | 3.5667 | .50836 | .07050 |
| | Greater than 6 yrs | 63 | 3.6800 | .43950 | .05537 |
| (Tot) Initiative. | 1 to 5 yrs | 52 | <u>3.1402</u> | .41914 | .05812 |
| | Greater than 6 yrs | 63 | <u>3.3015</u> | .37105 | .04675 |
| (Tot) Optimism. | 1 to 5 yrs | 52 | 3.6427 | .47671 | .06611 |
| | Greater than 6 yrs | 63 | 3.6143 | .45348 | .05713 |
| (Tot) Empathy. | 1 to 5 yrs | 52 | 3.6063 | .47471 | .06583 |

| | (R) Yrs in TSO position | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| | Greater than 6 yrs | 63 | 3.6471 | .43162 | .05438 |
| (Tot) Organisational awareness. | 1 to 5 yrs | 52 | 3.4883 | .39972 | .05543 |
| | Greater than 6 yrs | 63 | 3.6141 | .40360 | .05085 |
| (Tot) Service orientation. | 1 to 5 yrs | 52 | 3.8675 | .51377 | .07125 |
| | Greater than 6 yrs | 63 | 4.0116 | .46380 | .05843 |
| (Tot) Developing others. | 1 to 5 yrs | 52 | 3.5896 | .57121 | .07921 |
| | Greater than 6 yrs | 63 | 3.7459 | .45214 | .05696 |
| (Tot) Inspirational leadership. | 1 to 5 yrs | 52 | 3.4756 | .55837 | .07743 |
| | Greater than 6 yrs | 63 | 3.6337 | .45899 | .05783 |
| (Tot) Change catalyst. | 1 to 5 yrs | 52 | 3.3273 | .45021 | .06243 |
| | Greater than 6 yrs | 63 | 3.3046 | .43047 | .05423 |
| (Tot) Influence. | 1 to 5 yrs | 52 | 3.4558 | .46427 | .06438 |
| | Greater than 6 yrs | 63 | 3.5818 | .37757 | .04757 |
| (Tot) Conflict management. | 1 to 5 yrs | 52 | 3.1713 | .38295 | .05311 |
| | Greater than 6 yrs | 63 | 3.2849 | .32845 | .04138 |

| | (R) Yrs in TSO position | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| (Tot) Teamwork and collaboration. | 1 to 5 yrs | 52 | 3.6477 | .50705 | .07031 |
| | Greater than 6 yrs | 63 | 3.6745 | .39136 | .04931 |

## 1.1.4.2 Independent Samples Test

Reading the columns under the heading "Levene's test of equality of variance" in Table G8 if the probability value is statistically significant (p<0.05), then your variances are unequal. Otherwise they are equal. Levene's test of equality of variance in this case tells us that the variances between the two years in the TSO position group are not all equal (p>0.05). Reviewing the 2-tailed significance for the years in the TSO position initiative (p=0.031) you are able to reject the null hypothesis of no population difference for the above two dimensions of ECI. For the remaining ECI dimensions we accept the null hypothesis of equal variance.

**Table G8: Independent Samples Test for Years in TSO position and ECI**

| | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | 95% Confidence Interval of the Difference | |
|---|---|---|---|---|---|---|---|---|---|
| | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | Lower | Upper |
| (Tot) Emotional self-awareness | .764 | .384 | -1.904 | 113 | .059 | -.12785 | .06713 | -.26085 | .00515 |
| (Tot) Accurate self-assessment | 2.318 | .131 | -.776 | 113 | .439 | -.06018 | .07756 | -.21385 | .09349 |
| (Tot) Self-confidence | .415 | .521 | -1.743 | 113 | .084 | -.14732 | .08452 | -.31476 | .02013 |

| | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | F | Sig. | t | df | | | | Lower | Upper |
| (Tot) Emotional self-control | .374 | .542 | .102 | 113 | .919 | .00858 | .08452 | -.15886 | .17603 |
| (Tot) Transparency | .236 | .628 | -1.141 | 113 | .256 | -.09375 | .08215 | -.25651 | .06900 |
| (Tot) Adaptability | 3.924 | .050 | -1.679 | 113 | .096 | -.12682 | .07555 | -.27649 | .02286 |
| (Tot) Achievement orientation | .547 | .461 | -1.282 | 113 | .203 | -.11330 | .08840 | -.28844 | .06184 |
| (Tot) Initiative | .567 | .453 | -2.188 | 113 | .031 | -.16134 | .07372 | -.30740 | -.01528 |
| (Tot) Optimism | .003 | .955 | .327 | 113 | .744 | .02843 | .08695 | -.14384 | .20071 |
| (Tot) Empathy | .028 | .866 | -.482 | 113 | .631 | -.04078 | .08461 | -.20841 | .12684 |
| (Tot) Organisational awareness | .832 | .364 | -1.671 | 113 | .097 | -.12583 | .07529 | -.27500 | .02333 |
| (Tot) Service orientation | .548 | .461 | -1.579 | 113 | .117 | -.14407 | .09124 | -.32484 | .03669 |
| (Tot) Developing others | 1.744 | .189 | -1.638 | 113 | .104 | -.15630 | .09543 | -.34536 | .03276 |
| (Tot) Inspirational leadership | 1.464 | .229 | -1.667 | 113 | .098 | -.15811 | .09485 | -.34604 | .02981 |
| (Tot) Change catalyst | .044 | .833 | .276 | 113 | .783 | .02276 | .08234 | -.14038 | .18589 |
| (Tot) Influence | 1.361 | .246 | -1.605 | 113 | .111 | -.12600 | .07849 | -.28151 | .02950 |

| | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | F | Sig. | t | df | | | | Lower | Upper |
| (Tot) Conflict management | 1.236 | .269 | -1.711 | 113 | .090 | -.11351 | .06634 | -.24494 | .01793 |
| (Tot) Teamwork and collaboration | 3.156 | .078 | -.320 | 113 | .750 | -.02679 | .08380 | -.19282 | .13924 |

### 1.1.5 (R) – Number of employees reporting to the TSO

You can state the null hypothesis in this section of the study as follows: "In this population, there is no difference between the number of employees reporting to the TSO group less than 25 and number employees of reporting to the TSO group greater than and equal to 25 with respect to their mean scores on the ECI variables". Symbolically, the null hypothesis can be represented in this way:

$$H0: M1=M2$$

M1 = mean ECI score for the population of the number of people reporting to the TSO group less than 25

M2 = mean ECI score for the population of the number of people reporting to the TSO group greater than and equal to 25

### 1.1.5.1 Group Statistics

Table G9 summarises the descriptive statistics for the years in the TSO position on the 18 ECI dependent variables. For example, the mean emotional self awareness score for less than 25 employee group is 3.5451 with a standard deviation of 0.33592. Similarly, the mean emotional self awareness score for the greater than and equal to 5 year group is 3.4589 with

a standard deviation of 0.38647. Next, we review the independent sample t-Test Table G9 below.

**Table G9:** **t-Test: Group Statistics for number of people reporting to the TSO and the ECI**

| | (R) No. of employees | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| (Tot) Emotional self awareness. | 25 people or less | 59 | 3.5451 | .33592 | .04373 |
| | Greater than 25 people | 56 | 3.4589 | .38647 | .05164 |
| (Tot) Accurate self assessment. | 25 people or less | 59 | 3.5696 | .39633 | .05160 |
| | Greater than 25 people | 56 | 3.4675 | .42765 | .05715 |
| (Tot) Self confidence. | 25 people or less | 59 | 3.8267 | .42561 | .05541 |
| | Greater than 25 people | 56 | 3.7666 | .48623 | .06497 |
| (Tot) Emotional self control. | 25 people or less | 59 | 3.4553 | .45206 | .05885 |
| | Greater than 25 people | 56 | 3.3680 | .44566 | .05955 |
| (Tot) Transparency. | 25 people or less | 59 | 3.6205 | .46131 | .06006 |
| | Greater than 25 people | 56 | 3.4832 | .40654 | .05433 |
| (Tot) Adaptability. | 25 people or less | 59 | 3.6075 | .39459 | .05137 |
| | Greater than 25 people | 56 | 3.4946 | .41417 | .05535 |
| (Tot) Achievement Orientation. | 25 people or less | 59 | 3.6712 | .42906 | .05586 |
| | Greater than 25 people | 56 | 3.5841 | .51569 | .06891 |
| (Tot) Initiative. | 25 people or less | 59 | 3.2410 | .36384 | .04737 |
| | Greater than 25 people | 56 | 3.2155 | .43777 | .05850 |
| (Tot) Optimism. | 25 people or less | 59 | 3.6827 | .44890 | .05844 |
| | Greater than 25 people | 56 | 3.5686 | .47292 | .06320 |
| (Tot) Empathy. | 25 people or less | 59 | 3.6710 | .46928 | .06110 |
| | Greater than 25 people | 56 | 3.5841 | .42854 | .05727 |
| (Tot) An organisational awareness. | 25 people or less | 59 | 3.5742 | .41277 | .05374 |
| | Greater than 25 people | 56 | 3.5393 | .39959 | .05340 |
| (Tot) Service | 25 people or less | 59 | 3.9771 | .47317 | .06160 |

| | (R) No. of employees | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| orientation. | Greater than 25 people | 56 | 3.9141 | .50974 | .06812 |
| (Tot) Developing others. | 25 people or less | 59 | 3.7270 | .46138 | .06007 |
| | Greater than 25 people | 56 | 3.6207 | .56148 | .07503 |
| (Tot) Inspirational leadership. | 25 people or less | 59 | 3.6409 | .49939 | .06501 |
| | Greater than 25 people | 56 | 3.4793 | .51274 | .06852 |
| (Tot) Change catalyst. | 25 people or less | 59 | 3.3511 | .40174 | .05230 |
| | Greater than 25 people | 56 | 3.2766 | .47329 | .06325 |
| (Tot) Influence. | 25 people or less | 59 | 3.5685 | .39869 | .05191 |
| | Greater than 25 people | 56 | 3.4788 | .44381 | .05931 |
| (Tot) Conflict management. | 25 people or less | 59 | 3.2465 | .38962 | .05072 |
| | Greater than 25 people | 56 | 3.2198 | .32220 | .04306 |
| (Tot) Teamwork and collaboration. | 25 people or less | 59 | 3.7202 | .44339 | .05772 |
| | Greater than 25 people | 56 | 3.6014 | .44355 | .05927 |

## 1.1.5.2 Independent Samples Test

Reading the columns under the heading "Levene's test of equality of variance" in table G10 below, if the probability value is statistically significant ($p < 0.05$), then your variances are unequal. Otherwise they are equal. Levene's test of equality of variance in this case tells us that the variances between the two TSO educational qualifications group are all equal ($p > 0.05$). We accept the null hypothesis of equal variance.

**Table G10:   Independent Samples Test for number of employees reporting to the TSO and ECI**

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig. | t | df | Sig. (2-tailed ) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | | |
| | | | | | | | | | Lower | Upper | |
| (Tot) Emotional self awareness . | Equal variances assumed | 3.814 | .053 | 1.277 | 113 | .204 | .08613 | .06743 | -.04745 | .21971 | |
| | Equal variances not assumed | | | 1.273 | 109.007 | .206 | .08613 | .06767 | -.04800 | .22025 | |
| (Tot) Accurate self assessme nt. | Equal variances assumed | .041 | .841 | 1.329 | 113 | .187 | .10212 | .07684 | -.05012 | .25435 | |
| | Equal variances not assumed | | | 1.326 | 111.168 | .187 | .10212 | .07699 | -.05045 | .25469 | |
| (Tot) Self confidence . | Equal variances assumed | 1.014 | .316 | .706 | 113 | .482 | .06009 | .08510 | -.10850 | .22868 | |
| | Equal variances not | | | .704 | 109.279 | .483 | .06009 | .08539 | -.10915 | .22933 | |

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| | assumed | | | | | | | | | |
| (Tot) Emotional self control. | Equal variances assumed | .025 | .876 | 1.042 | 113 | .300 | .08725 | .08376 | -.07870 | .25319 |
| | Equal variances not assumed | | | 1.042 | 112.834 | .300 | .08725 | .08373 | -.07864 | .25313 |
| (Tot) Transparency. | Equal variances assumed | .244 | .623 | 1.690 | 113 | .094 | .13732 | .08125 | -.02365 | .29830 |
| | Equal variances not assumed | | | 1.696 | 112.394 | .093 | .13732 | .08098 | -.02313 | .29777 |
| (Tot) Adaptability. | Equal variances assumed | .015 | .902 | 1.497 | 113 | .137 | .11287 | .07542 | -.03654 | .26229 |
| | Equal variances not assumed | | | 1.495 | 111.859 | .138 | .11287 | .07551 | -.03675 | .26249 |
| (Tot) Achievem | Equal variances | 1.946 | .166 | .987 | 113 | .326 | .08711 | .08828 | -.08780 | .26201 |

|  |  | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | | |
|  |  | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
|  |  |  |  |  |  |  |  |  | Lower | Upper |
| ent Orientation. | assumed |  |  |  |  |  |  |  |  |  |
|  | Equal variances not assumed |  |  | .982 | 107.153 | .328 | .08711 | .08871 | -.08874 | .26296 |
| (Tot) Initiative. | Equal variances assumed | 2.270 | .135 | .339 | 113 | .735 | .02542 | .07491 | -.12299 | .17384 |
|  | Equal variances not assumed |  |  | .338 | 107.105 | .736 | .02542 | .07527 | -.12379 | .17464 |
| (Tot) Optimism. | Equal variances assumed | .402 | .527 | 1.328 | 113 | .187 | .11411 | .08596 | -.05619 | .28441 |
|  | Equal variances not assumed |  |  | 1.326 | 111.776 | .188 | .11411 | .08608 | -.05644 | .28467 |
| (Tot) Empathy. | Equal variances assumed | .092 | .762 | 1.035 | 113 | .303 | .08690 | .08394 | -.07940 | .25319 |
|  | Equal variances |  |  | 1.038 | 112.836 | .302 | .08690 | .08374 | -.07901 | .25280 |

|  |  | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
|  |  | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
|  |  |  |  |  |  |  |  |  | Lower | Upper |
|  | not assumed |  |  |  |  |  |  |  |  |  |
| (Tot) Organisational awareness. | Equal variances assumed | .169 | .682 | .461 | 113 | .646 | .03492 | .07582 | -.11529 | .18514 |
|  | Equal variances not assumed |  |  | .461 | 112.954 | .646 | .03492 | .07576 | -.11516 | .18501 |
| (Tot) Service orientation. | Equal variances assumed | .415 | .521 | .687 | 113 | .493 | .06300 | .09166 | -.11860 | .24459 |
|  | Equal variances not assumed |  |  | .686 | 111.212 | .494 | .06300 | .09184 | -.11899 | .24498 |
| (Tot) Developing others. | Equal variances assumed | 2.395 | .125 | 1.111 | 113 | .269 | .10628 | .09562 | -.08317 | .29573 |
|  | Equal variances not assumed |  |  | 1.106 | 106.578 | .271 | .10628 | .09611 | -.08426 | .29682 |

|  |  | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
|  |  | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |  |
|  |  |  |  |  |  |  |  |  | Lower | Upper | |
| (Tot) Inspirational leadership. | Equal variances assumed | .001 | .979 | 1.712 | 113 | .090 | .16160 | .09439 | -.02540 | .34861 | |
|  | Equal variances not assumed |  |  | 1.711 | 112.299 | .090 | .16160 | .09445 | -.02554 | .34875 | |
| (Tot) Change catalyst. | Equal variances assumed | 1.070 | .303 | .912 | 113 | .364 | .07452 | .08172 | -.08738 | .23643 | |
|  | Equal variances not assumed |  |  | .908 | 108.035 | .366 | .07452 | .08207 | -.08815 | .23720 | |
| (Tot) Influence. | Equal variances assumed | 1.914 | .169 | 1.142 | 113 | .256 | .08975 | .07859 | -.06595 | .24546 | |
|  | Equal variances not assumed |  |  | 1.139 | 110.210 | .257 | .08975 | .07881 | -.06643 | .24594 | |
| (Tot) Conflict managem | Equal variances assumed | .895 | .346 | .400 | 113 | .690 | .02672 | .06686 | -.10575 | .15919 | |

| | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | Lower | Upper |
| ent. | | | | | | | | | |
| Equal variances not assumed | | | .402 | 110.949 | .689 | .02672 | .06653 | -.10512 | .15856 |
| (Tot) Teamwork and collabration. — Equal variances assumed | .000 | .984 | 1.436 | 113 | .154 | .11878 | .08274 | -.04513 | .28270 |
| Equal variances not assumed | | | 1.436 | 112.684 | .154 | .11878 | .08274 | -.04514 | .28270 |

**1.2    Testing (t-Test) Control Variables and Organisational Culture**

**1.2.1   (R) – Age of TSO**

You can state the null hypothesis in this section of the study as follows: "In this population, there is no difference between the TSO age group less than 41 years and the TSO age group greater than  and equal to 41 years with respect to their mean scores on the OCP variables". Symbolically, the null hypothesis can be represented in this way:

$$H0: M1=M2$$

M1 =   mean OCP score for the population of TSO's on the less than 41 year age group

M2 =   mean OCP score for the population of TSO's on the greater than and equal to 41 year age group

**1.2.1.1 Group Statistics**

Table G11 summarises the descriptive statistics for the two age groups of the TSO with the 7 OCP dependent variables. For example, the mean performance orientation score for the TSO age group less than 41 years is 3.5837 with a standard deviation of 0.50644 the mean score for the age group 41 years or greater is 3,5765 with the standard deviation  of 0,49882. Next, we review the independent sample t-Test Table G11.

**Table G11: t-Test: Group Statistics for Age of the TSO and OCP**

|  | (R) Age of TSO | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| (Tot) Performance orientation | Less than 41 yrs | 47 | 3.5837 | .50644 | .07387 |
|  | 41 yrs or greater | 68 | 3.5765 | .49882 | .06049 |
| (Tot) Social responsibility | Less than 41 yrs | 47 | 3.4612 | .50719 | .07398 |
|  | 41 yrs or greater | 68 | 3.4307 | .45437 | .05510 |
| (Tot) Supportiveness | Less than 41 yrs | 47 | 3.5123 | .46832 | .06831 |

| | (R) Age of TSO | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| | 41 yrs or greater | 68 | 3.4475 | .41999 | .05093 |
| (Tot) Emphasis on rewards | Less than 41 yrs | 47 | 3.3197 | .48220 | .07034 |
| | 41 yrs or greater | 68 | 3.3256 | .40832 | .04952 |
| (Tot) Stability | Less than 41 yrs | 47 | 3.3784 | .44080 | .06430 |
| | 41 yrs or greater | 68 | 3.3668 | .43568 | .05283 |
| (Tot) Competitiveness | Less than 41 yrs | 47 | 3.4928 | .50961 | .07433 |
| | 41 yrs or greater | 68 | 3.5053 | .49387 | .05989 |
| (Tot) Innovation | Less than 41 yrs | 47 | 3.2285 | .42719 | .06231 |
| | 41 yrs or greater | 68 | 3.1497 | .42724 | .05181 |

## 1.2.1.2 Independent Samples Test

Reading the columns under the heading "Levene's test of equality of variance" in table G12 below, if the probability value is statistically significant ($p<0.05$), then your variances are unequal. Otherwise they are equal. Levene's test of equality of variance in this case tells us that the variances between the two TSO age groups are all equal ($p>0.05$). We accept the null hypothesis of equal variance for all OCP dimensions.

**Table G12: Independent Samples Test for Age of TSO and OCP**

| | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | Lower | Upper |
| (Tot) Performance orientation | .551 | .460 | .076 | 113 | .940 | .00720 | .09521 | -.18143 | .19583 |
| (Tot) Social responsibility | 2.294 | .133 | .337 | 113 | .737 | .03049 | .09040 | -.14861 | .20959 |
| (Tot) Supportiveness | .942 | .334 | .776 | 113 | .440 | .06477 | .08352 | -.10070 | .23025 |
| (Tot) Emphasis on rewards | 2.132 | .147 | -.070 | 113 | .944 | -.00588 | .08344 | -.17120 | .15944 |
| (Tot) Stability | .309 | .579 | .140 | 113 | .889 | .01167 | .08304 | -.15285 | .17618 |
| (Tot) Competitiveness | .468 | .495 | -.132 | 113 | .895 | -.01251 | .09491 | -.20055 | .17552 |
| (Tot) Innovation | .012 | .914 | .972 | 113 | .333 | .07875 | .08104 | -.08180 | .23930 |

### 1.2.2 (R) – Race of TSO

You can state the null hypothesis in this section of the study as follows: "In this population, there is no difference between the White TSO race group White and the TSO race group Blacks with respect to their mean scores on the OCP variables". Symbolically, the null hypothesis can be represented in this way:

$$H0: M1=M2$$

M1 =   mean OCP score for the population of White TSOs

M2 =    mean OCP score for the population of Black TSOs

### 1.2.2.1 Group Statistics

Table G13 summarises the descriptive statistics for the two race groups of the TSO with the 7 OCP dependent variables. For example, the mean performance orientation score for the TSO White group is 3,7705 with a standard deviation of 0,41374 the mean score for the Black TSO group is 3,3682 with the standard deviation  of 0,48026.  Next, we review the independent sample t-Test Table G13.

**Table G13: t-Test: Group Statistics for Race of the TSO and OCP**

|  | (REG) TSO race | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| (Tot) Performance orientation | White | 56 | 3.7705 | .41374 | .05529 |
|  | Black | 43 | 3.3682 | .48026 | .07324 |
| (Tot) Social responsibility | White | 56 | 3.5596 | .40986 | .05477 |
|  | Black | 43 | 3.2946 | .48045 | .07327 |
| (Tot) Supportiveness | White | 56 | 3.5525 | .41789 | .05584 |

| | (REG) TSO race | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| | Black | 43 | <u>3.3553</u> | .44481 | .06783 |
| (Tot) Emphasis on rewards | White | 56 | 3.3895 | .38589 | .05157 |
| | Black | 43 | 3.2513 | .48130 | .07340 |
| (Tot) Stability | White | 56 | 3.4566 | .39731 | .05309 |
| | Black | 43 | 3.2936 | .44053 | .06718 |
| (Tot) Competitiveness | White | 56 | <u>3.6691</u> | .41821 | .05589 |
| | Black | 43 | <u>3.2926</u> | .46691 | .07120 |
| (Tot) Innovation | White | 56 | <u>3.3002</u> | .35990 | .04809 |
| | Black | 43 | <u>3.0388</u> | .44127 | .06729 |

**1.2.2.2 Independent Samples Test**

Reading the columns under the heading "Levene's test of equality of variance" in table G14, if the probability value is statistically significant (p<0.05), then your variances are unequal. Otherwise they are equal. Levene's test of equality of variance in this case tells us that the variances between the two Race groups are not all equal (p>0.05). Of the 7 OCP dimensions measured, on 5 dimensions i.e. performance orientation (p=0.000), Social responsibility (p=0.004), Supportiveness (p=0.026), Competitiveness (p=0.000) and Innovation (p=0.002) have p-values for the 2-tailed significance that are highly significant and therefore the variances are unequal. (Remember, that, anytime you obtain a p-value less than 0.05 for the two tailed significance, you reject the null hypothesis, and because your obtained p-value is so small, you are able to reject the null hypothesis of no population difference in the above

OCP dimensions). You may therefore conclude that there is a difference in OCP scores between the Black and White race groups for the dimensions mentioned above.

**Table G14: Independent Samples Test for Race of TSO and OCP**

| | | Levene's Test for Equality of Variances | | t-Test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| (Tot) Performance orientation | Equal variances assumed | 2.800 | .097 | 4.471 | 97 | .000 | .40234 | .08998 | .22375 | .58092 |
| | Equal variances not assumed | | | 4.384 | 82.941 | .000 | .40234 | .09176 | .21982 | .58486 |
| (Tot) Social responsibility | Equal variances assumed | 1.926 | .168 | 2.959 | 97 | .004 | .26505 | .08958 | .08725 | .44285 |
| | Equal variances not assumed | | | 2.897 | 82.405 | .005 | .26505 | .09148 | .08309 | .44701 |
| (Tot) Supportiveness | Equal variances assumed | 1.928 | .168 | 2.263 | 97 | .026 | .19722 | .08714 | .02428 | .37017 |
| | Equal variances not assumed | | | 2.245 | 87.522 | .027 | .19722 | .08786 | .02260 | .37184 |

| | | Levene's Test for Equality of Variances | | t-Test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| (Tot) Emphasis on rewards | Equal variances assumed | 3.135 | .080 | 1.585 | 97 | .116 | .13816 | .08715 | -.03481 | .31112 |
| | Equal variances not assumed | | | 1.540 | 78.998 | .128 | .13816 | .08970 | -.04039 | .31670 |
| (Tot) Stability | Equal variances assumed | 1.454 | .231 | 1.929 | 97 | .057 | .16297 | .08447 | -.00467 | .33061 |
| | Equal variances not assumed | | | 1.903 | 85.406 | .060 | .16297 | .08563 | -.00726 | .33321 |
| (Tot) Competitiveness | Equal variances assumed | .692 | .408 | 4.221 | 97 | .000 | .37653 | .08921 | .19948 | .55358 |
| | Equal variances not assumed | | | 4.160 | 85.041 | .000 | .37653 | .09051 | .19657 | .55650 |
| (Tot) Innovation | Equal variances assumed | .943 | .334 | 3.246 | 97 | .002 | .26140 | .08053 | .10156 | .42124 |
| | Equal variances | | | 3.160 | 79.938 | .002 | .26140 | .08271 | .09680 | .42600 |

| | Levene's Test for Equality of Variances | | t-Test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | Lower | Upper |
| not assumed | | | | | | | | | |

## 1.2.3 (R) – TSO qualifications

You can state the null hypothesis in this section of the study as follows: "In this population of, there is no difference between the TSO educational qualification group with less than N3 and the TSO qualification with greater than and equal to an N3 with respect to their mean scores on the OCP variables". Symbolically, the null hypothesis can be represented in this way:

$$H0: M1=M2$$

M1 =  mean OCP score for the population of TSOs with educational qualifications less  than and N3

M2 =   mean OCP score for the population of TSOs with educational qualifications greater than and equal to N3

### 1.2.3.1 Group Statistics

Table G15 summarises the descriptive statistics for the two major TSO educational qualification groups on the 7 OCP dependent variables. For example, the mean performance orientation score for the TSO educational group less than an N3 is 3.5574 with a standard deviation of 0.51326.  Similarly, the mean performance orientation score for the TSO educational group greater than and equal to N3 is 3.6000 with a standard deviation of 0.49262. Next, we review the independent sample t-Test Table G15 below.

**Table G15: t-Test: Group Statistics for Qualification of the TSO and OCP**

| | (R) TSO qualifications | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| (Tot) Performance orientation | N3 or less | 58 | 3.5574 | .51326 | .06739 |
| | N4 or more | 55 | 3.6000 | .49262 | .06643 |
| (Tot) Social responsibility | N3 or less | 58 | 3.4274 | .47903 | .06290 |
| | N4 or more | 55 | 3.4503 | .47816 | .06447 |
| (Tot) Supportiveness | N3 or less | 58 | 3.4200 | .43968 | .05773 |
| | N4 or more | 55 | 3.5219 | .44246 | .05966 |
| (Tot) Emphasis on rewards | N3 or less | 58 | 3.3047 | .43346 | .05692 |
| | N4 or more | 55 | 3.3348 | .44130 | .05950 |
| (Tot) Stability | N3 or less | 58 | 3.3514 | .42678 | .05604 |
| | N4 or more | 55 | 3.3823 | .45101 | .06081 |
| (Tot) Competitiveness | N3 or less | 58 | 3.4812 | .49993 | .06564 |
| | N4 or more | 55 | 3.5153 | .50599 | .06823 |
| (Tot) Innovation | N3 or less | 58 | 3.1650 | .43207 | .05673 |
| | N4 or more | 55 | 3.1996 | .42689 | .05756 |

### 1.2.3.2 Independent Samples Test

Reading the columns under the heading "Levene's test of equality of variance" in table G16 below, if the probability value is statistically significant (p<0.05), then your variances are unequal. Otherwise they are equal. Levene's test of equality of variance in this case tells us that the variances between the two TSO educational qualifications group are all equal (p>0.05). We accept the null hypothesis of equal variance.

**Table G16: Independent Samples Test for Qualification of TSO and OCP**

| | Levene's Test for Equality of Variances | | t-Test for Equality of Means | | | | | | |
| | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | Lower | Upper |
| (Tot) Performance orientation | .005 | .944 | -.450 | 111 | .654 | -.04263 | .09473 | -.23035 | .14508 |
| (Tot) Social responsibility | .140 | .709 | -.254 | 111 | .800 | -.02290 | .09008 | -.20140 | .15559 |
| (Tot) Supportiveness | .113 | .737 | -1.228 | 111 | .222 | -.10194 | .08301 | -.26643 | .06254 |

| | Levene's Test for Equality of Variances | | t-Test for Equality of Means | | | | | 95% Confidence Interval of the Difference | |
|---|---|---|---|---|---|---|---|---|---|
| | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | | |
| | | | | | | | | Lower | Upper |
| (Tot) Emphasis on rewards | .004 | .951 | -.367 | 111 | .714 | -.03019 | .08230 | -.19327 | .13290 |
| (Tot) Stability | .537 | .465 | -.374 | 111 | .709 | -.03092 | .08257 | -.19454 | .13271 |
| (Tot) Competitiveness | .015 | .903 | -.360 | 111 | .720 | -.03408 | .09465 | -.22163 | .15347 |
| (Tot) Innovation | .237 | .627 | -.428 | 111 | .670 | -.03459 | .08085 | -.19479 | .12561 |

### 1.2.4 (R) – Years in TSO position

You can state the null hypothesis in this section of the study as follows: "In this population, there is no difference between the years in the TSO position group less than 5 years and the years in the TSO position group greater than and equal to an 5 years with respect to their mean scores on the OCP variables". Symbolically, the null hypothesis can be represented in this way:

$$H0: M1=M2$$

M1 =   mean OCP score for the population of years in the TSO position group less than  5 years

M2 =    mean OCP score for the population of years in the TSO position greater than and equal to 5 years

**1.2.4.1 Group Statistics**

Table G17 summarises the descriptive statistics for the years in the TSO position on the 7 OCP dependent variables. For example, the mean performance orientation score for less than 5 years group is 3.4969 with a standard deviation of 0.48475.  Similarly, the mean performance orientation score for the greater than and equal to 5 year group is 3.6475 with a standard deviation of 0.50547. Next, we review the independent sample t-Test Table G17.

**Table G17: t-Test: Group Statistics for Years in TSO position and OCP**

|  | (R) Yrs in TSO position | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| (Tot) Performance orientation | 1 to 5 yrs | 52 | 3.4969 | .48475 | .06722 |
|  | Greater than 6 yrs | 63 | 3.6475 | .50547 | .06368 |
| (Tot) Social responsibility | 1 to 5 yrs | 52 | 3.3990 | .46273 | .06417 |
|  | Greater than 6 yrs | 63 | 3.4796 | .48504 | .06111 |
| (Tot) Supportiveness | 1 to 5 yrs | 52 | 3.4515 | .43066 | .05972 |
|  | Greater than 6 yrs | 63 | 3.4925 | .44932 | .05661 |
| (Tot) Emphasis on | 1 to 5 yrs | 52 | 3.2594 | .45340 | .06288 |

| | (R) Yrs in TSO position | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| rewards | Greater than 6 yrs | 63 | 3.3758 | .42116 | .05306 |
| (Tot) Stability | 1 to 5 yrs | 52 | 3.3285 | .44865 | .06222 |
| | Greater than 6 yrs | 63 | 3.4071 | .42535 | .05359 |
| (Tot) Competitiveness | 1 to 5 yrs | 52 | 3.3998 | .47688 | .06613 |
| | Greater than 6 yrs | 63 | 3.5830 | .50382 | .06348 |
| (Tot) Innovation | 1 to 5 yrs | 52 | 3.1348 | .43321 | .06008 |
| | Greater than 6 yrs | 63 | 3.2208 | .42150 | .05310 |

**1.2.4.2 Independent Samples Test**

Reading the columns under the heading "Levene's test of equality of variance" in table G18 below, if the probability value is statistically significant ($p < 0.05$), then your variances are unequal. Otherwise they are equal. Levene's test of equality of variance in this case tells us that the variances between the two years in the TSO position group are not all equal ($p > 0.05$). Reviewing the 2-tailed significance for the years in the TSO position competitiveness ($p = 0.049$) you are able to reject the null hypothesis of no population difference for the above two dimensions of OCP. For the remaining OCP dimensions we accept the null hypothesis of equal variance.

**Table G18: Independent Samples Test for Years in TSO position and OCP**

| | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | | | 95% Confidence Interval of the Difference | |
| | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | Lower | Upper |
| (Tot) Performance orientation | .001 | .977 | -1.620 | 113 | .108 | -.15058 | .09297 | -.33477 | .03362 |
| (Tot) Social responsibility | .003 | .955 | -.906 | 113 | .367 | -.08060 | .08901 | -.25696 | .09575 |
| (Tot) Supportiveness | .005 | .943 | -.496 | 113 | .621 | -.04095 | .08263 | -.20465 | .12274 |
| (Tot) Emphasis on rewards | .145 | .704 | -1.425 | 113 | .157 | -.11639 | .08169 | -.27823 | .04545 |
| (Tot) Stability | .382 | .538 | -.962 | 113 | .338 | -.07862 | .08169 | -.24047 | .08323 |
| (Tot) Competitiveness | .076 | .784 | -1.988 | 113 | .049 | -.18322 | .09215 | -.36579 | -.00065 |
| (Tot) Innovation | .058 | .811 | -1.075 | 113 | .285 | -.08595 | .07997 | -.24438 | .07249 |

**1.2.5    (R) Number of employees reporting to the TSO**

You can state the null hypothesis in this section of the study as follows: "In this population, there is no difference between the number of employees reporting to the TSO group less than 25 and number employees reporting to the TSO group greater than and equal to 25 with respect to their mean scores on the OCP variables". Symbolically, the null hypothesis can be represented in this way:

$$H0: M1=M2$$

M1 =   mean OCP score for the population of the number of people reporting to the TSO group less than 25

M2 =    mean OCP score for the population of the number of people reporting to the TSO group greater than and equal to 25

**1.2.5.1 Group Statistics**

Table G19 summarises the descriptive statistics for the number of employees reporting to the TSO on the 7 OCP dependent variables. For example, the mean performance orientation score for the less than 25 employee group is 3.6575 with a standard deviation of 0.43787. Similarly, the mean performance orientation score for the greater than and equal to 25 employee group is 3.4971 with a standard deviation of 0.54957. Next, we review the independent sample t-Test Table G19.

**Table G19: t-Test: Group Statistics for Years in TSO position and OCP**

|  | (R) No. of employees | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| (Tot) Performance orientation | 25 people or less | 59 | 3.6575 | .43787 | .05701 |
|  | Greater than 25 people | 56 | 3.4971 | .54957 | .07344 |
| (Tot) Social responsibility | 25 people or less | 59 | 3.5317 | .41170 | .05360 |
|  | Greater than 25 people | 56 | 3.3500 | .52070 | .06958 |
| (Tot) Supportiveness | 25 people or less | 59 | 3.5403 | .41643 | .05421 |
|  | Greater than 25 people | 56 | 3.4041 | .45593 | .06093 |
| (Tot) Emphasis on rewards | 25 people or less | 59 | 3.3962 | .42124 | .05484 |
|  | Greater than 25 people | 56 | 3.2463 | .44578 | .05957 |
| (Tot) Stability | 25 people or less | 59 | 3.4730 | .43790 | .05701 |
|  | Greater than 25 people | 56 | 3.2646 | .41099 | .05492 |
| (Tot) Competitiveness | 25 people or less | 59 | 3.5566 | .43365 | .05646 |
|  | Greater than 25 people | 56 | 3.4407 | .55595 | .07429 |
| (Tot) Innovation | 25 people or less | 59 | 3.2194 | .37452 | .04876 |
|  | Greater than 25 people | 56 | 3.1423 | .47655 | .06368 |

### 1.2.5.2 Independent Samples Test

Reading the columns under the heading "Levene's test of equality of variance" in Table G20 below, if the probability value is statistically significant (p<0.05), then your variances are unequal. Otherwise they are equal. Levene's test of equality of variance in this case tells us that the variances between the two years in the TSO position group are not all equal (p>0.05). Reviewing the 2-tailed significance for the number of employees reporting to the TSO, social responsibility (p=0.040) and stability (p=0.010) you are able to reject the null hypothesis of no population difference for the above two dimensions of OCP. For the remaining OCP dimensions we accept the null hypothesis of equal variance.

**Table G20:** Independent Samples Test for number of employees reporting to the TSO and OCP

| | | Levene's Test for Equality of Variances | | t-Test for Equality of Means | | | | | | |
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| (Tot) Performance orientation | Equal variances assumed | 4.363 | .039 | 1.735 | 113 | .085 | .16036 | .09242 | -.02275 | .34346 |
| | Equal variances not assumed | | | 1.725 | 105.074 | .087 | .16036 | .09297 | -.02398 | .34469 |
| (Tot) Social responsibility | Equal variances assumed | 3.625 | .059 | 2.081 | 113 | .040 | .18165 | .08730 | .00869 | .35461 |
| | Equal variances not assumed | | | 2.068 | 104.684 | .041 | .18165 | .08783 | .00749 | .35581 |
| (Tot) Supportiveness | Equal variances assumed | 1.029 | .313 | 1.674 | 113 | .097 | .13618 | .08136 | -.02501 | .29737 |
| | Equal variances | | | 1.670 | 110.742 | .098 | .13618 | .08156 | -.02543 | .29779 |

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| | | Levene's Test for Equality of Variances | | t-Test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | | Lower | Upper |
| | not assumed | | | | | | | | | |
| (Tot) Emphasis on rewards | Equal variances assumed | .325 | .570 | 1.855 | 113 | .066 | .14996 | .08085 | -.01022 | .31013 |
| | Equal variances not assumed | | | 1.852 | 111.671 | .067 | .14996 | .08097 | -.01048 | .31039 |
| (Tot) Stability | Equal variances assumed | .227 | .634 | 2.628 | 113 | .010 | .20834 | .07929 | .05125 | .36544 |
| | Equal variances not assumed | | | 2.632 | 112.987 | .010 | .20834 | .07916 | .05151 | .36518 |
| (Tot) Competitiveness | Equal variances assumed | 5.092 | .026 | 1.250 | 113 | .214 | .11591 | .09271 | -.06777 | .29959 |
| | Equal variances not assumed | | | 1.242 | 103.982 | .217 | .11591 | .09331 | -.06913 | .30094 |
| (Tot) Innovation | Equal variances assumed | 4.057 | .046 | .968 | 113 | .335 | .07713 | .07971 | -.08079 | .23504 |
| | Equal variances not assumed | | | .962 | 104.373 | .338 | .07713 | .08020 | -.08191 | .23617 |

### 1.3     Testing (T-Test) Moderator variable on performance variable

### 1.3.1   (R) – Age of the TSO

You can state the null hypothesis in this section of the study as follows: "In this population, there is no difference between the TSO age group less than 41 years and the TSO age group greater than  and equal to 41 years with respect to their mean scores on the TSO Performance variables". Symbolically, the null hypothesis can be represented in this way:

<div align="center">H0: M1=M2</div>

M1 = mean TSO Performance score for the population of TSOs on the less than 41 year age group

M2 = mean TSO Performance score for the population of TSOs on the greater than and equal to 41 year age group

**1.3.1.1 Group Statistics**

Table G21 summarises the descriptive statistics for the two age groups of the TSO with the TSO Performance dependent variables. For example, the mean performance orientation score for the TSO age group less than 41 years is 3.5983 with a standard deviation of 0.3235 the mean score for the age group 41 years or greater is 3.7334 with the standard deviation of 0.34308. Next, we review the independent sample t-Test Table G21.

**Table G21: t-Test: Group Statistics for Age of the TSO and TSO Performance**

| | (R) Age of TSO | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| TSO performance appraisal for 2k5 | Less than 41 yrs | 48 | 3.5983 | .32350 | .04669 |
| | 41 yrs or greater | 68 | 3.7334 | .34308 | .04160 |

**1.3.1.2 Independent Samples Test**

Reading the columns under the heading "Levene's test of equality of variance" in table G22 below, if the probability value is statistically significant ($p<0.05$), then your variances are unequal. Otherwise they are equal. Levene's test of equality of variance in this case tells us that the variances between the two TSO age group are not all equal ($p>0.05$). Reviewing the 2-tailed significance for the TSO Performance ($p=0.035$) you are able to reject the null hypothesis of no population difference for the above two dimensions on TSO Performance. We accept the null hypothesis of equal variance.

**Table G22: Independent Samples Test Age of the TSO and TSO Performance**

| | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | F | Sig. | t | df | Sig. (2-tailed) | Mean Differen ce | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | Lower | Upper |
| TSO performance appraisal for 2k5 | .310 | .579 | -2.137 | 114 | <u>.035</u> | -.13505 | .06318 | -.26021 | -.00989 |

### 1.3.2   (R) – TSO Race

You can state the null hypothesis in this section of the study as follows: "In this population, there is no difference between the White TSO race group White and the TSO race group Blacks with respect to their mean scores on the TSO Performance variable". Symbolically, the null hypothesis can be represented in this way:

$$H0: M1=M2$$

M1 =   mean TSO Performance score for the population of White TSOs
M2 =    mean TSO Performance score for the population of Black TSOs

### 1.3.2.1 Group Statistics

Table G23 summarises the descriptive statistics for the two race groups of the TSO with the TSO Performance dependent variable. For example, the mean performance orientation score for the TSO White group is 3.5389 with a standard deviation of 0.30152 the mean score for the Black group is 3.7713 with the standard deviation of 0.33392.  Next, we review the independent sample t-Test Table G23 below.

**Table G23: t-Test: Group Statistics for Race of TSO and TSO Performance**

|  | TSO race | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| TSO performance appraisal for 2k5 | Black | 44 | <u>3.5389</u> | .30152 | .04546 |
|  | White | 56 | <u>3.7713</u> | .33392 | .04462 |

**1.3.2.2 Independent Samples Test**

Reading the columns under the heading "Levene's test of equality of variance" in Table G24, if the probability value is statistically significant (p<0.05), then your variances are unequal. Otherwise they are equal. Levene's test of equality of variance in this case tells us that the variances between the two race groups are not all equal (p>0.05). TSO Performance (p=0.000) have p-values for the 2-tailed significance that are highly significant and therefore the variances are unequal. (Remember, that, anytime you obtain a p-value less than 0.05 for the two tailed significance, one rejects the null hypothesis, and because ones obtained p-value is so small, one is able to reject the null hypothesis of no population difference in the above TSO Performance dimensions). The researcher therefore concludes that there is a difference in OCP scores between the black and white race groups for the dimensions mentioned above. The null hypothesis is thus rejected.

**Table G24: Independent Samples Test for Race of the TSO and Performance**

| | Levene's Test for Equality of Variances | | t-Test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | **F** | **Sig.** | **t** | **df** | **Sig. (2-tailed)** | **Mean Difference** | **Std. Error Difference** | **95% Confidence Interval of the Difference** | |
| | | | | | | | | **Lower** | **Upper** |
| TSO performance appraisal for 2005 | 1.450 | .232 | -3.604 | 98 | .000 | -.23239 | .06449 | -.36036 | -.10441 |

### 1.3.3   (R) – TSO Qualifications

You can state the null hypothesis in this section of the study as follows: "In this population of, there is no difference between the TSO educational qualification group with less than N3 and the TSO qualification with greater than and equal to an N3 with respect to their mean scores on the TSO Performance variable". Symbolically, the null hypothesis can be represented in this way:

$$H0: M1=M2$$

M1 =   mean TSO Performance score for the population of TSOs with educational qualifications less than and N3

M2 =   mean TSO Performance score for the population of TSOs with educational qualifications greater than and equal to N3

### 1.3.3.1 Group Statistics

Table G25 summarises the descriptive statistics for the two major TSO educational qualification groups on the TSO Performance dependent variable. For example, the mean performance orientation score for the TSO educational group less than an N3 is 3.6600 with a standard deviation of 0.31721.  Similarly, the mean performance orientation score for the

TSO educational group greater than and equal to N3 is 3.7000 with a standard deviation of 0.36597. Next, we review the independent sample t-Test Table G25.

**Table G25: Group Statistics**

|  | (R) TSO qualifications | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| TSO performance appraisal for 2k5 | N3 or less | 58 | 3.6600 | .31721 | .04165 |
|  | N4 or more | 56 | 3.7000 | .36597 | .04890 |

**1.3.3.2 Independent Samples Test**

Reading the columns under the heading "Levene's test of equality of variance" in table G26 below, if the probability value is statistically significant (p<0.05), then your variances are unequal. Otherwise they are equal. Levene's test of equality of variance in this case tells us that the variances between the two TSO educational qualifications group are all equal (p>0.05). We accept the null hypothesis of equal variance.

**Table G26: Independent Samples Test** (Equal variances assumed)

|  | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
|  | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
|  |  |  |  |  |  |  |  | Lower | Upper |
| TSO performance appraisal for 2k5 | 1.248 | .266 | -.624 | 112 | .534 | -.04000 | .06408 | -.16696 | .08696 |

### 1.3.4 (R) – Years in TSO Position

You can state the null hypothesis in this section of the study as follows: "In this population, there is no difference between the years in the TSO position group less than 5 years and the years in the TSO position group greater than and equal to 5 years with respect to their mean scores on the TSO Performance variable". Symbolically, the null hypothesis can be represented in this way:

$$H0: M1=M2$$

M1 =   mean TSO Performance score for the population of years in the TSO position group less than 5 years

M2 =   mean TSO Performance score for the population of years in the TSO position greater than and equal to 5 years

### 1.3.4.1 Group Statistics

Table G27 summarises the descriptive statistics for the years in the TSO position on the TSO Performance dependent variable. For example, the mean TSO performance score for less than 5 years group is 3.6087 with a standard deviation of 0.33805.  Similarly, the mean TSO Performance score for the greater than and equal to 5 year group is 3.7334 with a standard deviation of 0.33436. Next, we review the independent sample t-Test Table G27.

**Table G27: Group Statistics**

|  | (R) Yrs in TSO position | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| TSO performance | 1 to 5 years | 52 | 3.6087 | .33805 | .04688 |
| appraisal for 2k5 | Greater than 6 yrs | 64 | 3.7334 | .33436 | .04180 |

### 1.3.4.2 Independent Sample Test

Reading the columns under the heading "Levene's test of equality of variance" in Table G28 below, if the probability value is statistically significant ($p<0.05$), then your variances are unequal. Otherwise they are equal. Levene's test of equality of variance in this case tells us that the variances between the two years in the TSO position group are not all equal ($p>0.05$). Reviewing the 2-tailed significance for the years in the TSO position TSO

Performance (p=0.049) you are able to reject the null hypothesis of no population difference for the above two dimensions of TSO Performance. We reject the null hypothesis

**Table G28: Independent Samples Test (**Equal variances assumed)

| | Levene's Test for Equality of Variances | | t-Test for Equality of Means | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | Lower | Upper |
| TSO performance appraisal for 2005 | .171 | .680 | -1.989 | 114 | .049 | -.12478 | .06273 | -.24906 | -.00051 |

### 1.3.5 (R) – Number of employees

You can state the null hypothesis in this section of the study as follows: "In this population, there is no difference between the number of employees reporting to the TSO group less than 25 and number employees reporting to the TSO group greater than and equal to an 25 with respect to their mean scores on the TSO Performance variable". Symbolically, the null hypothesis can be represented in this way:

H0: M1=M2

M1 = mean TSO performance score for the population of the number of people reporting to the TSO group less than 25

M2 = mean TSO Performance score for the population of the number of people reporting to the TSO group greater than and equal to 25

### 1.3.5.1 Group Statistics

Table G29 summarises the descriptive statistics for the years in the TSO position on the TSO Performance dependent variable. For example, the mean TSO performance score for less than 5 years group is 3.6557 with a standard deviation of 0.29368.  Similarly, the mean TSO performance score for the greater than and equal to 5 year group is 3.7009 with a standard deviation of 0.38543. Next, we review the independent sample t-Test Table G29.

**Table G29: Group Statistics**

|  | (R) No. of employees | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| TSO performance appraisal for 2005 | 25 people or less | 60 | 3.6557 | .29368 | .03791 |
|  | Greater than 25 people | 56 | 3.7009 | .38543 | .05150 |

### 1.3.5.2 Independent Samples Test

Reading the columns under the heading "Levene's test of equality of variance" in Table G30 below, if the probability value is statistically significant ($p<0.05$), then your variances are unequal. Otherwise they are equal. Levene's test of equality of variance in this case tells us that the variances between the two years in the number of employees reporting to the TSO group are not all equal ($p>0.05$). Reviewing the 2-tailed significance for the TSO performance ($p=0.477$) you are able to accept the null hypothesis of no population difference for the above two dimensions of TSO performance.

**Table G30: Independent Samples Test (**Equal variances assumed)

| | Levene's Test for Equality of Variances | | t-Test for Equality of Means | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
| | | | | | | | | Lower | Upper |
| TSO performance appraisal for 2005 | 3.579 | .061 | -.714 | 114 | .477 | -.04523 | .06337 | -.17076 | .08030 |

# APPENDIX H: CRITERIA FOR THE SIGNIFICANCE OF FACTOR LOADINGS

## Ensuring practical significance

Factor loadings greater than +/0.3 are considered to meet the minimal level; loadings of +/- 0.4 are considered more important; and if loadings are +/- 0.5 or greater, they are considered practically significant. Thus the larger the absolute size of the factor loadings, the more important the loadings in interpreting the factor matrix. Because loadings are the correlation of the variable and the factor, the squared loadings is the amount of the variable's total variance accounted for by the factor. Thus, a 0.3 loading translates to approximately 10% explanation, and 0.5 loading denotes that 25% of the variance is accounted for by the factor. The loadings must exceed 0.7 for the factor to account for 50 % of the variance. These guidelines are applicable when the sample size is 100 or larger (Hair et al., 1998).

## Assessing Statistical significance

**Table H1: Guidelines for identifying significant factor loadings based on sample size**

| Factor loadings | Sample size needed for significance |
|---|---|
| 0.3 | 350 |
| 0.35 | 250 |
| 0.4 | 200 |
| 0.45 | 150 |
| 0.50 | 120 |
| 0.55 | 100 |
| 0.6 | 85 |
| 0.65 | 70 |
| 0.7 | 60 |
| 0.75 | 50 |

A factor loading represents the correlation between an original variable and its factors. With the stated objective of obtaining a power level of 80 %, the use of a 0.5% significance level, and the proposed inflation of the standard errors of factor loadings, table H1 contains the sample sizes necessary for each factor loading value to be considered significant. For example, in a sample of 100 respondents, factor loadings of 0.55 and above are significant. However, in a sample of 50, a factor of 0.75 is required for significance. In comparison with the prior rule of thumb, which denoted all loadings of 0.3 as having practical significance, this approach would consider loadings of loadings of 0.3 significant only for a sample size of 350 or greater (Hair et al., 1998).

# APPENDIX I : APPROVALS FROM THE HAYGROUP FOR THE USE OF THE ECI 2.0

**From:**        <Ginny_Flynn@haygroup.com>
**To:**          <Bipathm@eskom.co.za>
**Date:**        Thu, Mar 17, 2005  9:30 PM
**Subject:**     Re: Minnesh Bipath Application to Use The ECI instrument for     Research
Purposes

Dear Minnesh,

Congratulations! You have been approved to do research using the Emotional Competence
Inventory (ECI).   Attached you will find four documents:

1.  ECI 2.0 360 Version.doc - This is a copy of the ECI 360 rating booklet. You may print or
copy this document as needed for your research.
2.  ECI 2.0 Self Version.doc - This is a copy of the ECI Self rating booklet.  You may print or
copy this document as needed for your research.
3.  ECI 2.0 Scoring Instructions.doc - This document contains the instructions necessary for
you to calculate the ECI 2.0 scores.  The scoring instructions document is a bit outdated, but
conceptually the scoring is the same.
4.  ECI 2.0 Scoring Key.doc - This contains the scoring key (list of items for each
competency and cluster) for the ECI.  Use this document to create variables in your statistical
program for each ECI competency and cluster scores.

We look forward to hearing about your results.  Please mail us a copy of your research paper
or publication when completed to the following address:

   Ginny Flynn
   Hay Group
   116 Huntington Ave.
   Boston MA 02116


Sincerely,
Ginny

>>> <Ginny_Flynn@haygroup.com> 03/17/05 4:26 PM >>>

Hi Minnesh,

The review committee has provided the following response regarding your research proposal.  Please respond to the concerns listed, and I will forward to the committee.

Regards,
Ginny Flynn
Director, Sales & Service
Hay Resources Direct


The Bipath proposal is a fantastic one. It would provide data on the organisational level of validation against both organisational climate/culture and performance. I was not clear on two issues:

1) The ECI-2 would be used as a 360 with the leader/founder;
2) How many organisations would be in the sample?

If the first was "yes," and the second was sufficient to run multivariate statistical analyses, then it is approved. But I would like to get confirmation of these two answers before approving it.

----- Forwarded by Ginny Flynn/BOSTON/US/HAYGROUP on 03/17/2005 09:20 AM

        Erin McGrath

## APPENDIX J: APPROVALS FROM PROF. SARROS FOR THE USE OF HIS MODIFIED OCP INSTRUMENT

**From:**   James Sarros <James.Sarros@Buseco.monash.edu.au>
**To:**     Minnesh Bipath <Minnesh.Bipath@eskom.co.za>
**Date:**   Tue, Jun 22, 2004  1:54 AM
**Subject:** Re: paper on leadership and its impact on organisational  culture

Hello Minnesh

You will be able to find a description of the instrument in the following article:

Sarros, James C., Judy Gray and Iain L. Densten. (2002). Leadership and its impact on organisational culture.  International Journal of Business Studies, 10(2), 1-26.

We also have an article in review presently which outlines in detail how the revised version of the OCP was developed as follows:

Sarros, James C., Judy Gray and Iain L. Densten. (2004). The organisational culture profile revisited and revised: an Australian perspective.  Australian Journal of Management (in review).

In the meantime, attached is the revised OCP and all the scoring information you require. Please cite the source as listed above.

James
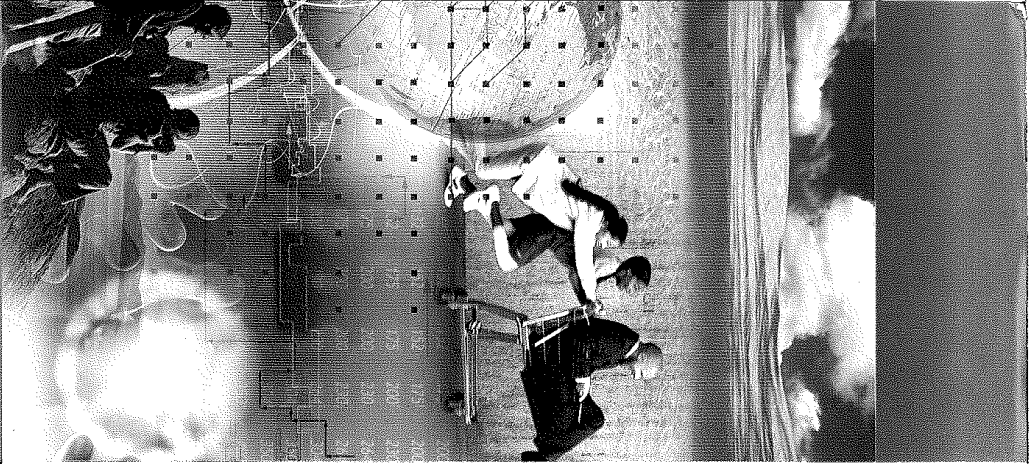
HayGroup

HayGroup® South Africa (Pty) Ltd

certifies that

Minnesh Bipath

has successfully completed training in

ECI Accreditation

MANAGING DIRECTOR: HAYGROUP SOUTH AFRICA
Reg No: 2003/025624/07

10 & 11 February 2005

DATE

AUTHORISED TRAINER