

Understanding Organisational Culture: Validating an Organisational Culture Assessment Tool

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A mini-thesis submitted in partial fulfilment of the
requirements of University of the Western Cape
for a Masters degree in Industrial Psychology in the
School of Economic and Management Sciences

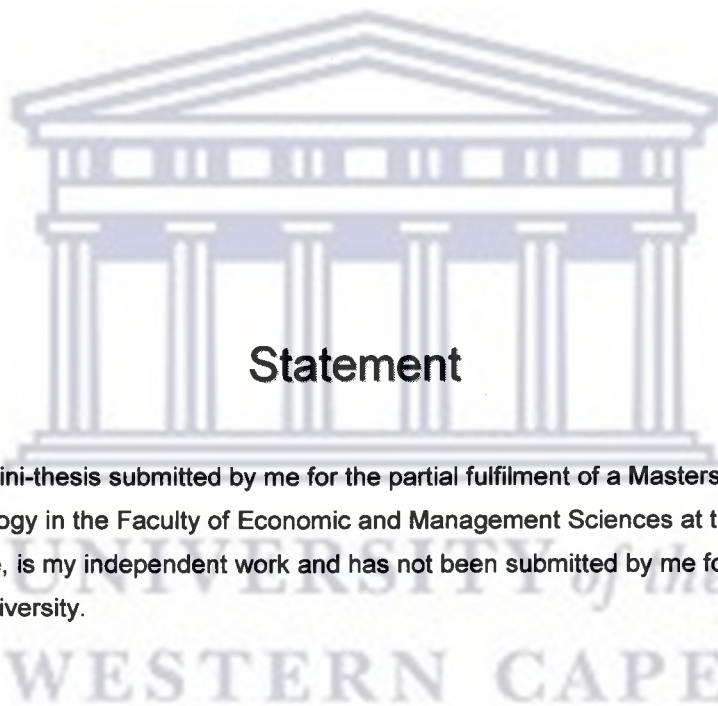
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2006

Acknowledgements

The author wishes to acknowledge the following:

- The Almighty for blessing me with the strength to complete this work at a time when it seemed almost impossible.
- My parents for providing me with the opportunity to further my studies and constantly encouraging me see it through.
- My extended family and friends for their continued support and encouragement – for bearing with me.
- My supervisor, Kobus Smit, for his patience, persistence and friendship. His inspirational feedback and ongoing academic criticism indeed helped reaped the reward. Not forgetting Karl Heslop for his meaningful input offered in Chapter Four.
- My employer and friend, Johan Ludik, for his unfailing support and encouragement through the years – constantly seeking research opportunities with me and providing me with time off to complete this “project”.
- Everyone at UWC who believed in my ability to complete the mini-thesis and saw it appropriate to allow me the opportunity.
- Professor Burger van Lill at the University of Cape Town, Section for Organisational Psychology, School of Management Studies, for supporting with the statistical analysis and interpretation.
- Mr Ronald Dearlove and Ms Louise Esterhuysen for affording me the opportunity to use their organisational data for this research project. For their absolute commitment to support students in their studies.



Statement

I certify that the mini-thesis submitted by me for the partial fulfilment of a Masters degree in Industrial Psychology in the Faculty of Economic and Management Sciences at the University of the Western Cape, is my independent work and has not been submitted by me for a degree at another faculty/university.

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December 2006

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Abstract

For decades, social science scholars have sought one, all-encompassing framework with which to describe and measure organisational culture. Recently, this search led one particular government institution to create its own organisational culture model, with its own assessment tool.

The aim of this research is to present scientific inquiry into the psychometric properties of this organisational culture assessment tool, which has been dubbed the X Model of Organisational Culture Assessment Tool (Smit, Ludik, & Forster, 2006).

To understand Smit et al.'s (2006) Organisational Culture Assessment Tool, it is important that one understands the concept of organisational culture. This thesis thus explores some of the organisational culture definitions, models and perspectives that exist within literature today. The cultural elements proposed within Smit et al.'s (2006) X Model of Organisational Culture may not necessarily be unique, but their empirical relationship has yet to be established. The research reported in this thesis therefore endeavoured to empirically illustrate that organisational culture can indeed be characterised by inter-related concepts such as Leadership, Strategy, Adaptability, Coordination, Relationships, and Climate.

Using the responses from a pilot study, this project used a quantitative research methodology to evaluate whether Smit et al.'s (2006) Organisational Culture Assessment Tool demonstrates:

- a high measure of reliability, and
- statistical validity.

It was found that the items, which were assumed to denote Leadership, Strategy, Adaptability, Coordination, Relationship and Climate significantly, represented those respective constructs and/or elements (as revealed by the item analysis which clearly positioned the organisational culture assessment tool as being scientifically reliable). In addition, the factor analysis also revealed that respondents were seeing things in a particular pattern. Here, these results showed the emergence of eight distinct clusters, namely; a general factor (assumed to denote Culture), Leadership, Relationships, Strategy, Adaptability and Climate thus demonstrating interim support for the questionnaire's underlying theoretical structure (that is, that there are positive signs of validity).

Several recommendations are made, the most prominent being that further statistical analysis be conducted using structural equation modelling which would allow for the improvement of this study's' current validity statistics. A further recommendation would include the conducting of covariance structure analysis on a bigger sample group, which would help to lift out the relationships between such elements as Leadership, Strategy, Adaptability, Coordination, Relationships, Climate, Business Performance Indicators, and Forces.



Chapter 1: Introduction

1.1 Introduction

Most organisations make a concerted effort to improve their performance and ensure success. They constantly seek to achieve this in a variety of ways, one of these being organisational development. More specifically there currently seems to be an interest in the relation between business success and organisational culture. A study of the relevant organisational culture literature provides evidence that there is indeed a relationship between an organisations' culture and its success (Deal & Kennedy, 1982; Denison, 1990; 1995; 1996; Peters & Waterman, 1982). Here, companies such as General Electric, Hewlett-Packard, Southwest Airlines, Disney, Starbucks and Coca-Cola are in agreement that the primary source of their success has become less about its leadership, technology, and/or superior strategies, but more about its culture (Du Toit, 2002). Thus academics and practitioners alike have sought to gain a deeper understanding of exactly what constitutes a high performance culture in order that they could accurately assess why some companies excel and others do not.

From this, scientific diagnostic tools necessary to assess organisational cultures were developed. Although several of these tools are available in South Africa, the majority of them seem to lack proof of reliability and validity (Du Toit, 2002). It is with this gap in mind that this research study was borne.

This chapter serves as a contextual framework for this research. It provides insight into the background behind this study, the research questions and hypothesis that were formulated, aims and objectives that were stated, and an overview of the research design and method.

1.2 Background and Contextualisation

Attempts to describe organisational culture have adopted a number of different approaches. To date, there is little scientific evidence to suggest that there is one, all-encompassing theory of organisational culture (Gordon & DiTomaso, 1992). There is even debate as to whether one can

use a single set of characteristics with which to define, measure and compare organisational cultures (Denison & Mishra, 1995).

According to a recently developed organisational culture assessment tool, organisational culture can be characterised by such inter-related concepts as leadership, strategy, adaptability, coordination, relationships, climate, organisational performance and hidden forces (Smit et al., 2006). Although these cultural elements are in themselves not unique, together they form what has been dubbed the X Model of Organisational Culture (Smit et al., 2006).

The research described in this proposal is set in the public service sector. It was borne out of a particular government institution's need to describe and assess its organisational culture. Even though a number of validated organisational culture tools exist, the decision was taken to develop an organisational culture tool that was specific to that institution's organisational context. This led to the creation of the X Model of Organisational Culture (Smit et al., 2006) upon which an organisational culture assessment tool was based.

To ensure that a credible organisational culture assessment tool was developed, a scientific process had to be followed. This process began with a comprehensive exploration of the various definitions, perspectives and models of organisational culture prevalent within academic literature. Using these academic theories, a preliminary model was proposed and further developed by using a selection of grounded theory techniques. From this process, it emerged that certain elements of the preliminary model formed an X-like structure. The resultant X Model of Organisational Culture (Smit et al., 2006) was then used as the basis for the development of an organisational culture questionnaire. Given that this is a newly developed questionnaire, and the first to be developed specifically for the South African public service context, it needs to be scientifically validated and refined. It is this validation exercise that is the focus of this research study.

Thus the aim of this research is to investigate the psychometric properties of the X Model of Organisational Culture's Assessment Tool (Smit et al., 2006), within a specific South African government institution.

By developing an empirically sound assessment tool, it is the intent of this government institution that members of the target organisation could use the instrument as a baseline measurement tool with which to conduct culture assessments, manage organisational climate and performance, and make informed decisions regarding the investment in such areas as Leadership, Strategy, Adaptability, Coordination, Relationship and Climate development.

This research was conducted within a particular South African government institution. The sample used closely represented the population and its inherent characteristics with respect to age, gender, level of education, salary level, department and function. For the purpose of this research respondents from several different categories were randomly chosen from the twelve various departments within the target population. To expedite the research process and potentially reduce misunderstanding and error rates among the sample population, the institution's internal communication infrastructure was used as the primary medium with which to disseminate and collect the research information (that is, the survey questionnaires).

The focus of this research was to analyse people's responses to the survey questionnaires in order to evaluate whether:

- The items contained within the assessment tool endorse the construct it is intended to, and whether
- The items contained within the assessment tool cluster around specific constructs and/or factors

The above research aims will be explained in further detail in the aims and objectives section. However, to do this, the reader would need to understand some of the core theoretical definitions used in this study.

1.3 Definition of concepts

1.3.1 Organisational Culture

The most commonly accepted definition of culture is the one offered by Edgar Schein who describes culture as *"the pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration, that has 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 those problems"* (Schein, 1992, p.12).

As reported by Smit et al. (2006), and in the context of this research, organisational culture will be defined as *"the way we do things around here"* (Deal & Kennedy, 1988) or *"the way we think about things around here"* (Maull, Brown, & Cliffe, 2001).

The underlying elements that make up organisational culture will be discussed in further detail in Chapter 2.

1.3.2 Assessment Tools

According to a definition sourced from the NSW Food Industry Training Council (www.nswfitc.com), the term assessment tool refers to any method for the gathering of data and/or evidence for assessment. Such methods could include a questionnaire, a test, a checklist of stages in solving a problem, or a criterion-referenced rating scale.

From this, it can be inferred that Smit et al.' (2006) Organisational Culture Assessment Tool could in fact be a questionnaire designed to gather data pertaining to an organisations culture. A detailed explanation of this particular assessment tool will be offered in Chapter 2.

1.3.3 Reliability

According to Anastasi and Urbina (1997), the term reliability (as used in psychometrics) refers to the consistency of a given test and/or assessment tool. In other words, test reliability is the consistency of scores obtained by the same persons when retested with the same test or an equivalent form of the test.

It should be noted that before an assessment tool can be released for general use within the public domain, a thorough, objective check of its reliability should be carried out. It is for this reason that this research was borne (that is, to explore the reliability of Smit et al.'s (2006) Organisational Culture Assessment Tool). Testing for reliability forms part of the statistical validation of any newly developed assessment tool.

A further explanation of this concept will be presented in Chapter 3.

1.3.4 Validity

Anastasi and Urbina (1997) agree that validity is perhaps the most important question to be asked about any assessment tool. Validity provides a direct check on how well the test fulfils its function – that is, does the test actually measure that which it purports to measure.

Therefore, for the purposes of this research, validity of Smit et al.'s (2006) Organisational Culture Assessment Tool would refer to the degree to which the assessment tool is able to measure the construct of organisational culture. Testing for validity forms part of the statistical validation of any newly developed psychometric tool. An explanation of how this concept was tested will be presented in Chapter 3.

1.4 Aims and Objectives

The overall aim of this study is to present scientific inquiry into the psychometric properties of Smit et al.'s (2006) X Model of Organisational Culture's Assessment Tool that was recently developed for use within a particular government institution in the Western Cape. The focus of the research will be to evaluate whether the organisational culture assessment tool demonstrates:

- A high measure of reliability (that is, the ability of the organisational culture assessment tool to repeatedly produce the same results when repeated under similar condition), and
- Statistical validity (that is, the degree to which the organisational culture assessment tool is able to measure the construct of organisational culture).

By exploring these psychometric properties, the research study will:

- Determine whether the organisational culture assessment tool presents as an appropriate means with which to describe and diagnose organisational culture, and

In order to address these research objectives and provide answers to the above questions, this research will focus on:

- Providing a comprehensive review of the literature related to organisational culture (that is, theories, models and perspectives of organisational culture),
- Conducting a validation study within a the target organisation and reporting on the statistical results,
- Exploring the item and factor analysis results of the above validation study, and

- Suggestions for future research.

By exploring the above research premises, this study could ultimately serve to contribute to both the target population (where the research is being conducted) as well as the organisational culture research community. The contributions of the research will be explained below.

1.5 Contributions of the Research

If proven to be scientifically valid, Smit et al.'s (2006) organisational culture assessment tool would provide organisations (particularly in the public sector) with reliable information with which to develop its organisational culture. From the findings, it would be possible to focus attention of those cultural dimensions as leadership, strategy, adaptability, coordination, and relationships that would require development. These dimensions and/or developmental areas would have a direct impact on the manner in which the organisation would invest in the development of its people, work processes, organisational design, strategic initiatives, leadership and its responsiveness to its external environment. With a credible survey tool, organisations would thus be in a position to roll out with planned change initiatives that would be geared toward enhancing that organisation's level of service delivery, and in so doing, cultivate a culture of high performance.

If found to be psychometrically sound, organisations would be able to use the assessment tool to explore further underlying relationships, such as the connection between leadership, culture, climate and organisational performance.

If the relationship between leadership and culture were found to be statistically significant, then the data collected from the assessment would help to identify those elements of leadership, which have the most impact on organisational culture. By leveraging its leadership capacity, the organisation would be in a position to strengthen its organisational culture.

With empirical evidence to support the notion that climate is the manifestation of culture (that is, the way people feel about how things are done in the organisation), one could begin to isolate those cultural dimensions which have the strongest impact on climate. By doing so, organisations could tap the discretionary effort of their employees', which would invariably serve to engender support and enthusiasm for future cultural endeavours.

In short, the organisational culture assessment tool would help generate valuable data (quantitative and qualitative) that would assist in the identification of perceived areas of strength and weakness for that organisation. Focusing on closing perceived cultural gaps would invariably help that organisation to develop its culture and in so doing, nurture a high performance culture.

Set against the backdrop of the above research contribution, is the following rationale, which will be explained below.

1.6 Rationale

With empirical information at its disposal, the target organisation would be able to confirm whether its assessment tool actually measures the construct it purports to (that is, organisational culture). Here, it is expected that the statistical findings generated from this study would help to further refine and/or stabilize Smit et al.'s (2006) Organisational Culture Assessment Tool. The statistically refined tool would allow practitioners within the target organisation to conduct organisational culture assessments with an increased level of accuracy and a greater degree of certainty. This would in turn allow for more effective diagnosis (within specific departments, business units and teams) and the proposition of more appropriate development interventions.

Prior to the development of Smit et al.'s (2006) X Model of Organisational Culture and its Assessment Tool, human resource practitioners and organisational development consultants within the target organisation used many different survey tools and/or questionnaires with which to tap people's perceptions about organisational culture. However, with neither a formally accepted nor consistently used survey tool, no common diagnosis and/or picture could ever be made regarding organisational culture within the target organisation. By developing and validating Smit et al.'s (2006) Organisational Culture Assessment Tool, human resource practitioners and organisational development consultants within the target organisation would be in possession of a survey tool which they could re-use, thus allowing them to manage and monitor organisational culture changes over time.

This research also intends making an important contribution towards understanding those factors, which influence organisational culture – particularly in the public sector (as proposed by Smit et al., 2006). In particular, the research will attempt to elucidate whether certain questions and/or items contained in Smith et al.'s Assessment Tool actually load and/or cluster around such

specific constructs as: Leadership, Strategy, Adaptability, Coordination, Relationships, Climate, and Organisational Performance.

In essence there are two primary entities that would derive benefit from this research, namely:

- The entire organisation comprising more than 50 000 members, its departments, and other selected work teams, given that they would have access to a customized and scientifically validated tool with which to describe and assess their organisational culture.
- The South African public service sector, given that the framework was developed for, and validated within that specific industry. With a validated organisational culture model, and with repeated culture surveys, the public sector would be able to develop norm tables and thus allow them to compare results between various public sector organisations and ultimately highlight trends across these various organisations.

1.7 Problem Statement and Hypothesis

The fact that the X Model of Organisational Culture's Assessment Tool (Smit et al., 2006) has only recently been developed, it is yet to demonstrate whether it is statistically:

- Reliable, and
- Valid

Thus the problem to be addressed in this study is:

Problem Statement:

- It is not clear whether Smit et al.'s (2006) X Model of Organisational Culture's Assessment Tool is valid or reliable.

From this problem statement, the following research questions are going to have be explored:

Research Question 1:

- Is Smit et al.'s (2006) X Model of Organisational Culture's Assessment Tool a reliable tool with which to measure organisational culture within the public sector?

Research Question 2:

- Is Smit et al.'s (2006) X Model of Organisational Culture's Assessment Tool a valid tool with which to measure organisational culture within the public sector?

Building on the above research questions, certain tentative assumptions about the two questions can be made. When such propositions are formulated as statements for empirical testing, they are referred to as hypotheses (Anastasi & Urbina, 1997). These hypotheses ultimately provide a framework within which the research will take place.

The following hypotheses were stated for this study:

Hypothesis 1:

- Ho: The organisational culture assessment questionnaire is not a scientifically reliable tool for assessing organisational culture.
- H₁: The organisational culture assessment questionnaire is a scientifically reliable tool for assessing organisational culture.

Hypothesis 2:

- Ho: The organisational culture assessment questionnaire is not a scientifically valid tool for assessing organisational culture.
- H₁: The organisational culture assessment questionnaire is a scientifically valid tool for assessing organisational culture.

1.8 Research Design and Approach

This research makes use of a quantitative research methodology to explore whether Smit et al.'s (2006) Organisational Culture Assessment Tool is a scientifically valid and reliable means with which to describe and measure organisational culture.

To statistically validate the assessment tool/questionnaire, it was disseminated to a sample group within the target organisation. Participants, who were selected entirely at random, were required to complete a 259-item survey tool. Responses from the questionnaire were captured electronically into an excel spreadsheet and then imported into a Statistical Programme for the Social Sciences (SPSS) for analysis. For the purposes of this study, only those questions relating to Leadership, Strategy, Adaptability, Coordination, Relationship and Climate were analysed.

The two statistical techniques that were used to explore the validity and reliability of the Organisational Culture Assessment Tool (Smit, et al., 2006) included item and factor analysis.

A more detailed explanation of this study's' research design and methodology will be offered in Chapter 3.

1.9 Limitations

Even though a detailed discussion of the limitations is offered in Chapter 5, the reader is alerted to the following:

- The small sample size of 416 respondents resulted in the factor analysis findings being more tenuous rather than conclusive. According to Nunnally (1978), a minimum of 10 observations per variable is required for factor analysis which meant that a sample of 2 510 respondents was necessary. Although drawing such a small sample helped to make the study more manageable as well as helping to overcome cost and time constraints, any factor analysis findings could only be considered provisional (at best).
- The use of such a lengthy questionnaire could result in many respondents answering too uniformly thus skewing the validation results. Here, the respondents' measure of central tendency could adversely impact on the tool's internal reliability and validity statistics.

1.10 Summary

This study expects to find sufficient empirical evidence to confirm that the theoretical assumptions upon which Smit et al.'s (2006) Organisational Culture Assessment Tool was based is stable. Put another way, it is anticipated that this study would highlight sufficient empirical evidence to confirm the hypothesis that Smit et al.'s (2006) Organisational Culture Assessment Tool is indeed a valid and reliable means with which to measure organisational culture.

From the statistical findings it is assumed that respondents would respond to items in the Organisational Culture Assessment Tool (Smit et al., 2006) in a very particular way, which would confirm the tool's degree of internal consistency.

Furthermore, this study also expects to find respondents responding to items in the Organisational Culture Assessment Tool (Smit et al., 2006) in a way that identifies the presence of specific factors and/or clusters that are contained within the measurement tool.

It is anticipated that the findings from this study would help add to the refinement and stabilisation of Smit et al.'s (2006) Organisational Culture Assessment Tool such that the tool ultimately matures into a more respondent friendly and scientifically sound assessment instrument. In so doing, it is assumed that the research findings invariably contributes to the body of knowledge surrounding organisational culture by introducing the tool's psychometric properties to the industrial psychology and organisational behaviour fraternity.

In this chapter the contextual framework, problem statement, objectives and research hypotheses were discussed. In the next chapter the concept of organisational culture be explored in greater detail based on a review of the literature.



Chapter 2: The Literature Review

2.1 Introduction

The purpose of this chapter is to provide a review of the literature on organisational culture. The focus of this research is to present scientific inquiry into the psychometric properties of an organisational culture assessment tool. This chapter will therefore focus on the theoretical definitions and perspectives that underpin the organisational culture model, a description of its dimensions and an overview of the measurement questionnaire that was used in the study.

2.2 Background to Organisational Culture

According to Alvesson and Berg (1992), by the 1990s, a literature search on organisational culture could generate over 2500 hits. The results of these hits suggested that the emphasis on organisational culture had shifted from the functional and technical aspects of management (the so-called "hard side") to the more interpersonal and symbolic aspects (the "soft side"). To understand this shift, one would need to understand the history surrounding organisational culture research. This section will facilitate this discussion by providing a brief synopsis of some of the more prominent literary works and definitions of organisational culture.

Although the concept of organisational culture was only popularized in the early 1980s by such publications as Ouchi's (1981) *Theory Z*, Pascale and Athos's (1981) *The Art of Japanese Management*, Deal and Kennedy's (1982) *Corporate Cultures* and Peters and Waterman's (1982) *In Search of Excellence: Lessons from America's Best Run Companies*, its roots can be traced back to earlier studies in sociology, anthropology and social psychology (Durkheim, 1964; Geertz, 1973; Mead, 1934; Weber, 1947, 1958). Thus the concept of organisational culture is clearly not a recent development within business. Prior to the publication of these works, the first systemic attempt to understand organisational culture dated back to the Hawthorne studies of the 1920s. These studies sparked what became known as the human relations movement, which attempted to understand the dynamics of work group functioning and organisational productivity.

The burgeoning interest into the human relations view of organisations ultimately gave rise to a wealth of research into the topic. However, this attention into the human relations movement soon lost ground as organisational science became increasingly quantitative. This shift from the qualitative, anthropological approach to the more observable later became known as organisational climate studies, which were prominent during the 1960s and 1970s (Denison 1990). However, realizing that organisational climate's structural-rational approach to understanding organisations missed crucial aspects of how organisations function and how they affect the lives of their members (that is, the less visible aspects of organisational life), social scientists again resumed their anthropological approach (Trice & Beyer, 1993).

It is clear that despite the myriad of research articles devoted to the subject, much confusion still exists surrounding the definition and its boundaries (Denison, 1996; Hatch, 1993). According to Ogbonna and Wilkinson (1990), it seems that there are as many definitions of organisational culture as there are "experts" on the subject. Nevertheless, to understand how organisations use the concept in a meaningful way, one would need to understand how these "experts" define it.

2.2.1 Definitions of Organisational Culture

Upon reviewing the literature on organisational culture, it would appear as though there is no shortage of definitions. While some definitions of organisational culture may include such elements as assumptions, beliefs, and values others expand the concept to include the way things are done, norms, behaviours and artefacts. Even though the elements may vary, it seems as though there are two sets of dimensions, namely:

- A softer, more hidden dimension – represented by beliefs, values and assumptions
- A harder, more visible side – represented by the more observable norms of behaviour and other artefacts

For the purpose of this study, this section will unpack the various definitions of organisational culture by positioning it in either one of the above dimensions (that is, the softer, more hidden dimension versus and harder, more visible dimension).

Haggett's (1975) definition of organisational culture, as cited in Wilson (2001), points to the more visible side of culture. Here, Haggett (1975, p238) describes organisational culture as:

"patterns of behaviour that form a durable template by which ideas and images can be transferred from one generation to another, or from one group to another".

Davis (1984) echoes this view and adds the softer, more hidden dimension when he suggests that organisational culture consists of rules for behaviour that are derived from patterns of beliefs and values that are shared and which provide meaning for its members.

Koberg and Chusmir (1987) also acknowledge both sides of organisational culture in their definition, namely:

"a system of shared values and beliefs that produces norms of behaviour and establishes an organisations way of life" (Koberg & Chusmir, 1987, p.397)

Ball and Asbury (1989) describe organisational culture as a shared system of meaning which comprises of norms, beliefs, values and assumptions, which bind people together and set them apart from those in other organisations. Even though their argument seems to suggest a visible and observable distinction between the members of one organisation and another, their definition clearly brings into focus the softer, less visible dimension of organisational culture.

According to Ott (1989) organisational culture consists of patterns of shared behaviour that shape members' perceptions of meaning and reality. Here, culture is a social force, separating those who belong from those who do not. From his definition, it is clear that organisational culture offers a shared system of meaning to its members via the harder, more visible side of organisational culture (that is, its behavioural dimension).

This view is extended by Lundberg (1990) who acknowledges both the softer, more hidden dimension as well as the harder, more visible side of organisational culture in his description that organisational culture comprises a shared, common frame of reference, being at its core typically invisible (due to its deeply buried sets of values and assumptions), yet also observable through such things as language and behaviour. Lundberg's (1990) goes further to suggest that organisational culture is modifiable (that is, able to change), but not easily so.

Schein (1992) also regards culture as a layered phenomenon comprising both a visible and a less visible dimension. However, as shown in Figure 2.4, Schein's (1988) view identifies a third level (that is, one which lies between the visible artefacts and the less visible beliefs and assumptions), namely, that which the organisation advocates itself to be (that is, its espoused values). According to Schein (1992), these shared values and beliefs constitute the most important aspect of organisational culture. Here, he describes organisational culture as:

"the pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration, that has 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 those problems" (Schein, 1992, p.12).

Drennan (1992) refers to organisational culture as how things are being done in organisations. His view arguably points to a more doing (that is, behavioural) dimension which would imply a harder, more visible side to organisational culture.

Williams, Dobson, and Walters' (1994) definition of organisational culture states that it comprises commonly held and relatively stable beliefs, attitudes and values of that organisation. This definition thus outlines culture's less visible dimension.

According to French and Bell (1995), culture constitutes those patterns of beliefs, symbols, rituals, myths and practices that have evolved over time in every organisation. Together these constitute culture. From their definition, it is clear that culture comprises both the softer, more hidden dimension as well as the harder, more visible side.

Given that this study focuses on the empirical analysis of Smit et al.'s (2006) Organisational Culture Assessment Tool, it is imperative that one brings into focus their definition of organisational culture. According to Smit et al. (2006) organisational culture can be described as:

"the way we do things around here" and "the way we think about things around here".

For the purpose of this study, Smit et al.'s (2006) definition of organisational culture will be used as the reference point for further discussion around organisational culture.

Smit et al. (2006) takes this definition further and suggests that *"the way in which an organisation does things"* is a function of such inter-related elements as:

- Leadership
- Strategy
- Adaptability
- Relationships
- Coordination

In light of Smit et al.'s (2006) definition, it is clear that they too acknowledge a doing side to culture (that is, a more behavioural and observable dimension), as well as a more innate cognitive side (that is, a less visible dimension which is akin to beliefs and assumptions). This seemingly cognitive dimension to organisational culture is not without its affective counterpart, namely: *"how we feel about things are around here"*, which Smit et al. (2006) refers to as

organisational climate. According to Hicks-Clarke and Iles (2000), the distinction between culture and climate are often blurred with the result that they are used interchangeably. To enrich ones understanding of organisational culture, it is prudent that one acknowledge both the differences and similarities between culture and climate. The following section will attempt to illustrate this.

2.2.2 Differences between Organisational Culture and Climate

During the early 1980s, when interest into the culture perspective first began, it was relatively simple to distinguish it from climate. Denison (1996) suggests that the distinction lay in the way in which data is collected and analysed. According to Denison (1990), the argument is not so much about what is being studied but how to study it. If researchers used qualitative data to support their ideas (that is, interviews and focus group discussions), they were deemed to be studying culture while the use of questionnaires and quantitative analysis were seen more as climate research (Denison, 1996).

Denison's (1996) extensive discussion into the differences and similarities between culture and climate, saw him reaching the conclusion that climate refers to a situation and its link to thoughts, feelings and behaviours of organisational members, while culture, refers to an evolved context (that is, a collectively held set of beliefs which are complex enough to resist direct manipulation).

Denison's (1990, 1996) research thus highlights two important distinctions, namely:

- Culture is more qualitative in nature while climate is more quantitative
- Culture is less easily manipulated than climate

According to Moran and Volkwein (1992), climate and culture overlap given that they are both socially constructed dimensions of an organisation. They contend that the climate of an organisation is heavily influenced by its culture thus suggesting that the terms are not mutually exclusive as much as they are related. Furthermore, Moran and Volkwein (1992) argue that the primary difference between climate and culture is that climate is directly observable (that is, it mostly reflects the behaviour of organisational members) while culture reflects more those elements, which are not always as easily observable by outsiders (that is, the underlying assumptions and expectations of organisational members).

Moran and Volkwein's (1992) climate and culture distinction highlights yet another two important differences, namely:

- Culture is less observable than climate
- Climate is influenced by culture

Schneider, Gunnarson, and Niles-Jolly (1994) argue that climate is one aspect of culture. They assert that climate is:

"the atmosphere that employees perceive is created in their organisations by practices, procedures and rewards. Employees observe what happens to them (and around them) and then draw conclusions about the organisation priorities. They then set their own priorities accordingly" (Schneider et al., 1994, p.18).

They suggest that culture is:

"the broader pattern of an organisation's morals, values and beliefs" (Schneider et al., 1994, p.18).

According to Schneider et al. (1994) employees cluster their organisational experiences and events into meanings and these form the basis of organisational climate. Climate is therefore heavily dependent on organisational policies and procedures.

Schneider et al.'s (1994) investigation into the distinction between culture and climate suggest that:

- Culture focuses on beliefs
- Climate focuses on feelings

Schneider and Gunnarson (1996) argue that climate tells us "*what*" happens in an organisation, whereas culture helps explain "*why*" things happen in a particular way. According to Schneider and Gunnarson (1996) culture therefore relates more to the assumptions, values and philosophies regarding organisational life while climate refers more the practices, procedures and rewarded behaviours which describe that organisation.

Schneider and Gunnarson's (1996) culture-climate distinction confirms that:

- Culture is less observable than climate (that is, a softer, more deep-rooted phenomenon)

For the purpose of this research project, which utilises Smit et al.'s (2006) Organisational Culture Assessment Tool, it should be noted that the above distinctions seem quite prominent in the questionnaire design. This is to say that, both a qualitative and quantitative research design was employed and the focus on the culture questions seemed less affective in nature than the climate questions. However, culture questions did focus on observable behaviour, which seems to depart

from Moran and Volkwein's (1992) assertion that culture reflects the less immediately interpretable elements of an organisation.

An analysis of the culture-climate debate thus far, leads one to the conclusion that there is indeed much overlap with regards to their definitions. Using Denison's (1996) argument, it would seem that these two phenomena differ less theoretically than they do in their interpretation. For the purpose of this research project, Smit et al.'s (2006) description of organisational climate will be employed, namely:

"the way people feel about things in the organisation."

With the above distinctions in mind, it is necessary to explore the various perspectives of culture which researchers in this field have utilised in formulating their definitions and descriptions. The different perspectives of organisational culture will be explained in the next section.

2.2.3 Perspectives of Organisational Culture

To fully understand the concept of organisational culture, one needs to explore the various perspectives of culture that have been adopted through the years. According to Martin and Meyerson (1988), researchers have identified three major perspectives in organisational culture research, namely: the integration, differentiation and fragmentation perspectives.

i. The integration perspective

According to Martin and Meyerson (1998), the integration perspective is one, which has dominated organisational culture research for many years as researchers have often sought to explore the level of consensus and/or consistency regarding the cultural assumptions between the various elements of a particular culture. Martin (1992) asserts that studies from the integration perspective possess three defining characteristics, namely:

- All cultural manifestations mentioned are interpreted as consistently reinforcing the same themes,
- All members of the organisation are said to share in an organisation-wide consensus, and
- The culture is described as a realm where all is clear (that is, ambiguity is excluded).

Studies focussing on this perspective have taken many forms, including the identification and review of shared values and the focus on shared cultural manifestations across the organisation.

According to Wilson (2001), where cultural members lack consensus regarding the organisations' values, differentiation is said to have occurred. This differentiation could suggest a weak or negative culture.

ii. The differentiation perspective

The differentiation perspective is best explained by Wilson (2001) in which he contends that differentiation refers to the clustering together of groups of employees who consider themselves as being distinct. According to Van Maanen (1991) cultural members could differentiate themselves around different jobs, different levels of organisational status, gender and class. Unlike the integration perspective, where there is organisation-wide consensus regarding norms and values, the differentiation perspective positions consensus as a sub-cultural phenomenon. Thus, the organisation's culture could be seen as a function of those sub-cultural differences that exist within it (Wilson, 2001).

According to Martin (1992) the differentiation perspective describes cultural manifestations as being inconsistent where consensus only occurs within the boundaries of particular subcultures, and which often conflict with those of other subcultures (Martin, 1992). Thus, the differentiation perspective focuses on the inevitability of conflict in organisations and presents the lack of consensus as an issue that needs to be understood and addressed within (Martin, 1992).

Martin (1992) suggests that there are three defining characteristics of the differentiation perspective, namely:

- Inconsistency,
- Subcultural consensus, and
- The relegation of ambiguity to the periphery of subcultures

Organisational culture researchers who adopted this approach tended to explore organisational culture as a series of frequently conflicting opposites (such as management-labour, rational-emotional, professional-manual). However, despite recognizing these seemingly conflicting opposites, the differentiation perspective did not seem to account sufficiently for the ambiguities inherent within the organisational environment. Thus, the final perspective, fragmentation, becomes increasingly more important.

iii. The fragmentation perspective

Contrary to the organisation-wide consensus described by the integration approach, and the sub-cultural unity and difference referred to in the differentiation perspective, the fragmentation perspective views ambiguity as the norm, with consensus and discord co-existing.

According to Martin (1992), studies, which adopt the fragmentation perspective, view organisations as being in a constant state of flux and focus on understanding the interaction between conflicting subcultures. Here, topics such as race and gender are good examples of these conflicting, complex subcultures.

Martin (1992) further contends that the defining characteristics of the fragmentation perspective includes:

- Focus on ambiguity,
- Complexity of relationships among manifestations, and
- A multiplicity of interpretations that do not coalesce into a stable consensus.

Set against the backdrop of these different perspectives, organisational culture researchers have attempted to develop their own unique organisational culture model with which to further understand (and perhaps even simplify) the various dimensions of organisational culture. The next section will provide a discussion of some of the more prolific models of organisational culture (particularly those that were used in the development of Smit et al.'s (2006) Model of Organisational Culture) by clustering them into one (or more) of the above perspectives.

2.3 Existing Models of Organisational Culture

In order to develop a better understanding of the term organisational culture (as well as the organisational culture assessment tool upon which this research is based) it is important to highlight some of the more prominent models which were used by Smit et al.'s (2006) as the basis of the X Model of Organisational Culture. The discussion of the various models will be reviewed in terms of the different perspectives on organisational culture as mentioned previously.

2.3.1 Models within the Integration Perspective

This cluster is characterised by organisational culture theories and models in which there is organisation-wide consensus and consistency regarding the organisations' cultural assumptions. According to Wilson (2001), those organisational culture theories and models that are found to represent this perspective, are the ones' where there is much alignment between that organisations' espoused values and its members' actual practices. These organisational culture theories and models include:

i. Deal and Kennedy

Deal and Kennedy (1982) describe culture in terms of four central dimensions, namely:

- Values: refers to those beliefs and assumptions which lie at the core of the organisation's culture
- Heroes: refers to those people who are seen to represent those core values
- Rites and rituals: refers to those established routines which typify members' interactions
- The culture network: refers to the informal system of communication or hidden hierarchy of power in the organisation

From the above description, it is evident that Deal and Kennedy's (1982) model positions the organisations' values as key to understanding that organisations' culture. The organisation wide sharing of these values by its heroes and/or members both characterizes and promotes the culture of that organisation. Thus, their view seems to align with the elements of the integration perspective in that values are integral to building a strong organisational culture.

ii. Denison

Denison's (1990) framework (depicted in Figure 2.1) suggests that organisational culture comprises four primary cultural traits, each containing three component indexes, namely:

- Mission: refers to the degree to which an organisation is clear about its business direction (vision, goals and objectives, strategic direction)
- Involvement: refers to the degree to which individuals in the organisation are engaged in and "own" the organisation's direction, in order to help it succeed (empowerment, team orientation, capability development)
- Adaptability: refers to the degree to which the organisation understands the customers' needs, can change in response to them, and can learn new skills and technologies in

order to help the organisation succeed (creating change, customer focus, organisational learning)

- Consistency: refers to the degree to which the organisation uses its shared values, as well as its systems and processes in a manner that supports its mission and goals (core values, agreement, coordination and integration)

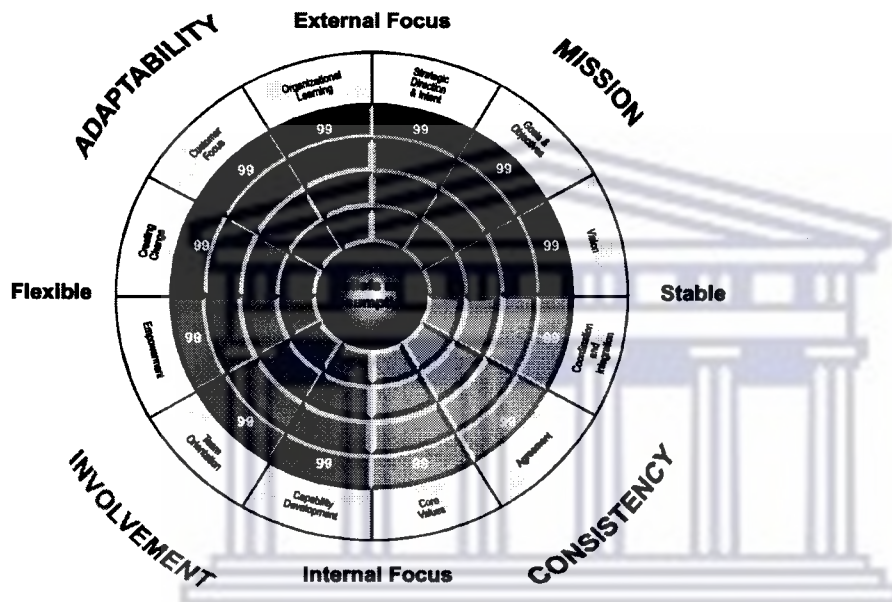


Figure 2.1: Denison Culture Model

As illustrated in Figure 2.1, at the centre of Denison’s (1990) framework is the presence of underlying beliefs and assumptions. Here, similar to Schein (1988), Denison (1990) recognises the deeper levels of organisational culture, which provides the foundation from which peoples’ behaviours and actions are derived. According to Denison (1990), values and behavioural norms are linked to these underlying assumptions however, it is far more difficult to draw inferences about the underlying assumptions than it is to draw inferences about people’s outward expression of these assumptions. Thus people’s behaviour, if consistent with the organisations’ espoused values, could see increased results in the various indexes of Denison’s (1990) culture framework. Given that consensus and consistency regarding the organisations’ cultural assumptions seems to play a major role in whether specific indexes score higher or lower, one could conclude that Denison’s (1990) framework aligns more with the integration perspective than either of the others.

iii. Johnson and Scholes

Johnson and Scholes (1998) proposes that organisational culture can best be described using a cultural web in which he identifies a number of elements that could be used to describe and/or influence culture. These elements, as shown in Figure 2.2, include:

- The paradigm: refers to that which the organisation is all about (that is, its purpose, its mission and its values)
- Control systems: refers to the processes that are in place to monitor that which is going on
- Organisational structure: refers to the lines of reporting, hierarchies, and the way in which work flows through the organisation
- Power structures: refers to how widely spread decision making power is
- Symbols: refers to those artefacts such as logos and designs which shape the organisations identity
- Rituals and routine: refers to the manner in which the organisation conducts its management meetings, creates board reports and the like
- Stories and myths: refers to the messages that created within the organisation and which revolve around certain people and events

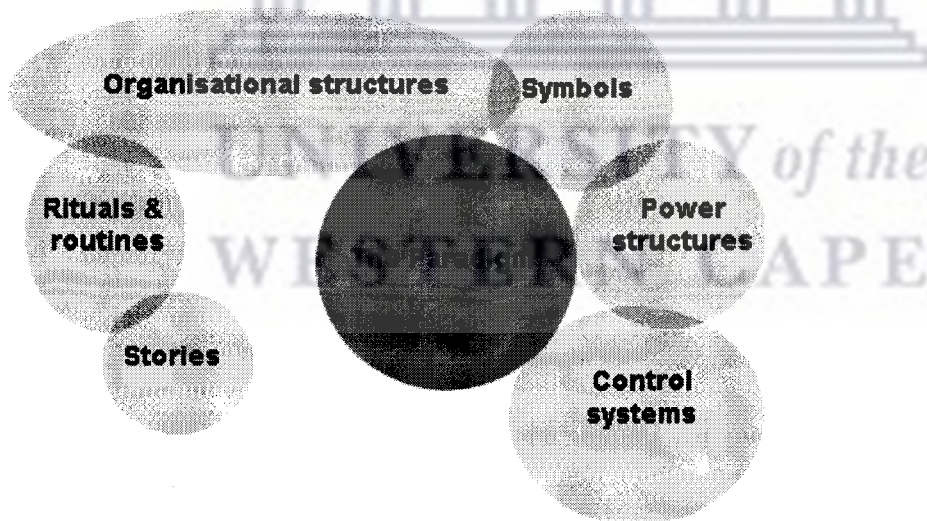


Figure 2.2: Johnson and Scholes' Cultural Web Model

With "the paradigm" akin to the heart of the organisation, which pumps its values throughout the organisations' structures, routines, systems, symbols and stories, one could argue that it is a useful gatekeeper in understanding the broader aspects of that organisations' culture. Put another way, "the paradigm" helps to reinforce that sense of organisational purpose, which allows

members to be clear of what is expected of them in terms of behaviour. Through organisation-wide consensus, the cultural web could arguably grow stronger. Thus, Johnson and Scholes' (1998) Cultural Web Model clearly aligns itself more with the elements of the integration perspective than either the differentiation or the fragmentation perspective.

iv. Martins

The model developed by Martins (1987, 1997) to describe organisational culture was based on the work of Edgar Schein (1988) and illustrates the interaction between the different subsystems and elements in an organisation. According to Martins and Terblanche (2003) an organisation is a complex social system in which individual and group activities take place. They take this further by suggesting that the various subsystems together form the culture of that organisation.

As provided by Du Toit (2002), and shown in Figure 2.3, an interpretation of Martins' model of organisational culture can be seen to consist of three main elements, namely:

- The organisational system
- Survival functions, and
- Dimensions of Culture

The organisational system consists of five subsystems, which forms the internal system of Martins' (1987, 1997) model. These subsystems include such things as goals, technical, structural, psychosocial and management elements.

When assessing the culture of an organisation, Martins' (1987, 1997) model suggest that there are two primary survival functions, namely:

- Survival and adaptation of the organisation to the external environment (particularly regarding the organisations' goals and technological subsystems)
- Survival and adaptation of the internal organisational system (particularly regarding the structural and psychosocial elements of the organisation)

According to Martins (1987, 1997), as provided by Martins and Terblanche (2003), the dimensions of culture encompass such things as:

- Mission and vision: refers to the way in which employees' understand the organisations' vision, mission and values and how their understanding of it translates into measurable goals and objectives

- External environment: refers to the degree of focus on external and internal customers as well as employees' perceptions of the effectiveness the organisations' involvement in the community
- Means to achieve objectives: refers to the way in which the organisational structure and support mechanisms contributes to organisational effectiveness
- Image of the organisation: refers to the image of the organisation to the external world and whether or not it is perceived as a sought after employer
- Management processes: refers to the way in which management processes such as decision making, goal formulation, management control and communication, as well as the degree of focus on innovation contributes to the effectiveness the organisation
- Employee needs and objectives: refers to the degree to which employees perceive that their needs and objectives are sufficiently integrated with those of the organisation
- Interpersonal relationships: refers to the relationship between managers and employees as well as the management of conflict within the organisation
- Leadership: refers to the way in which employees perceive specific areas of leadership that strengthen the degree of leadership within the organisation

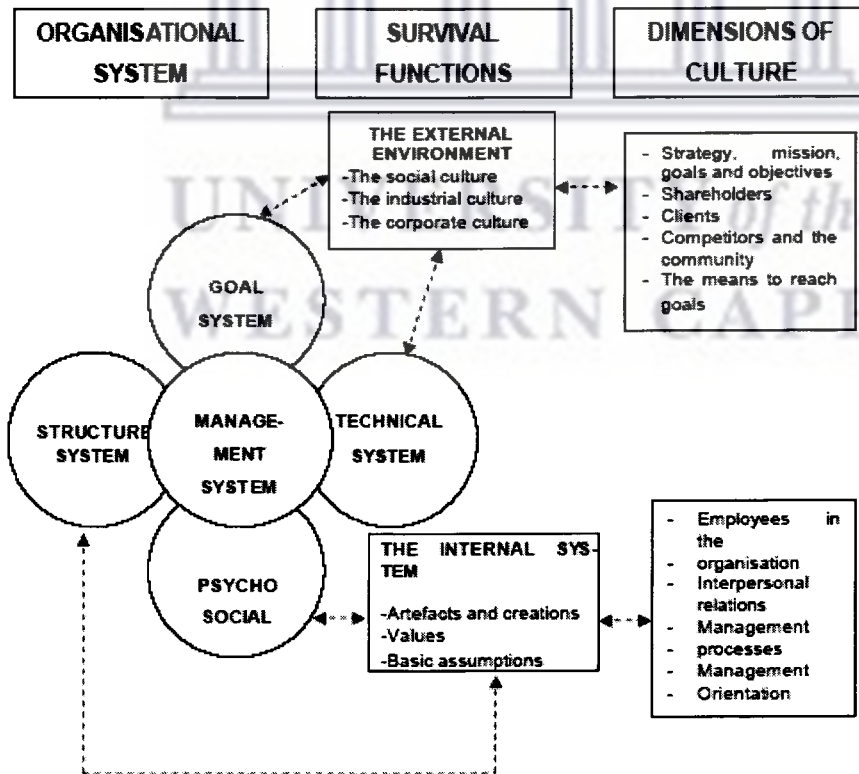


Figure 2.3: Martins' Model of Organisational Culture (as interpreted by Du Toit, 2002)

Reviewing Martins' (1987, 1997) theory on organisational culture, one is drawn to the conclusion that organisational culture is in fact the way in which employees understand the vision, mission and values of the organisation and how their understanding translates into measurable organisational outputs via specific management processes (which provides the medium through which that organisations expresses its values). Even the perception of the organisation to both its people and the external world seems to be one which is rooted in what is considered socially acceptable according to a particular value set and/or judgement. Even though differentiation is likely to occur within specific departments (with regard to the way in which people are likely do and/or perceive things), the organisation as a whole, would still seek to promote its core values and the articulation thereof. Thus, Martins' (1987, 1997) description of culture seems to align more with the integration perspective than either the differentiation or fragmentation perspective (despite the possibility that consensus could likely only occur within specific subcultures).

v. Schein

Edgar Schein's (1988) view of organisational culture most aptly fits in with Martin's (1992) integration perspective due to the emphasis on the need for the organisations' espoused values to be consistent with its members' actual practices.

Schein (1988) regards culture as a layered phenomenon, composed of three interrelated levels of meanings – from those relatively observable to those mostly invisible. Schein's (1988) levels of culture include; artefacts and creations, values and basic assumptions (as shown in Figure 2.4). According to Schein (1988), the most clearly visible level of culture are its artefacts and creations, which comprise that organisation's written and spoken language and its members' overt behaviour. At a deeper level, Schein (1988) identifies espoused values or a sense of what ought to be. Schein (1988) suggests that these values gradually start a process of cognitive transformation into beliefs and ultimately assumptions, which are located at an even deeper level of consciousness.

Levels of Culture

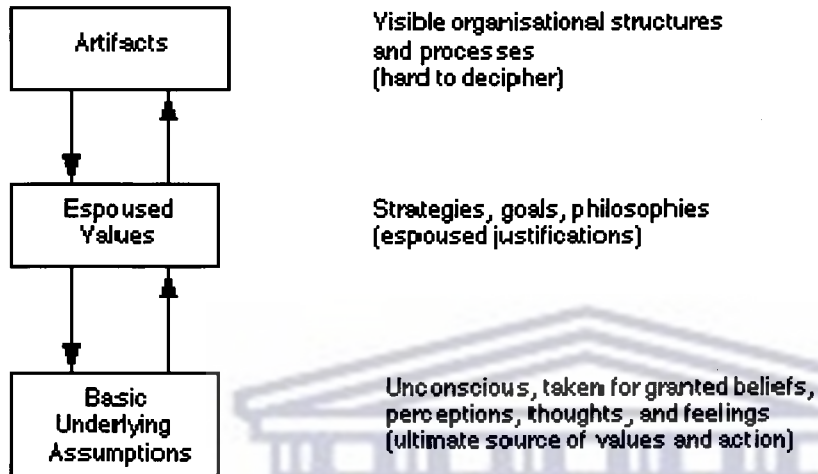


Figure 2.4: Schein's Model of Culture

2.3.2 Models within the Differentiation Perspective

Organisational culture theories and models, which characterise the differentiation perspective, are those where consensus occurs within the boundaries of a subculture rather than being organisation-wide. This element of subcultural consensus can best be seen in such organisational culture theories and models as:

i. Cameron and Quinn

Cameron and Quinn (1999) developed their competing values approach to culture in which they suggest that organisational culture be profiled in terms of four dominant culture types and/or models, as illustrated in Figure 2.5, namely:

- **Clan**: refers to an organisation, which has an internal maintenance focus together with flexibility, concern for people, and sensitivity for customers as its focus
- **Hierarchy**: refers to an organisation which focuses on internal maintenance as well as on the need for stability and control
- **Adhocracy**: refers to an organisation which focuses its energies on external positioning together with high degrees of flexibility and individuality

- **Market:** refers to an organisation which focuses on external maintenance as well as the need for stability and control

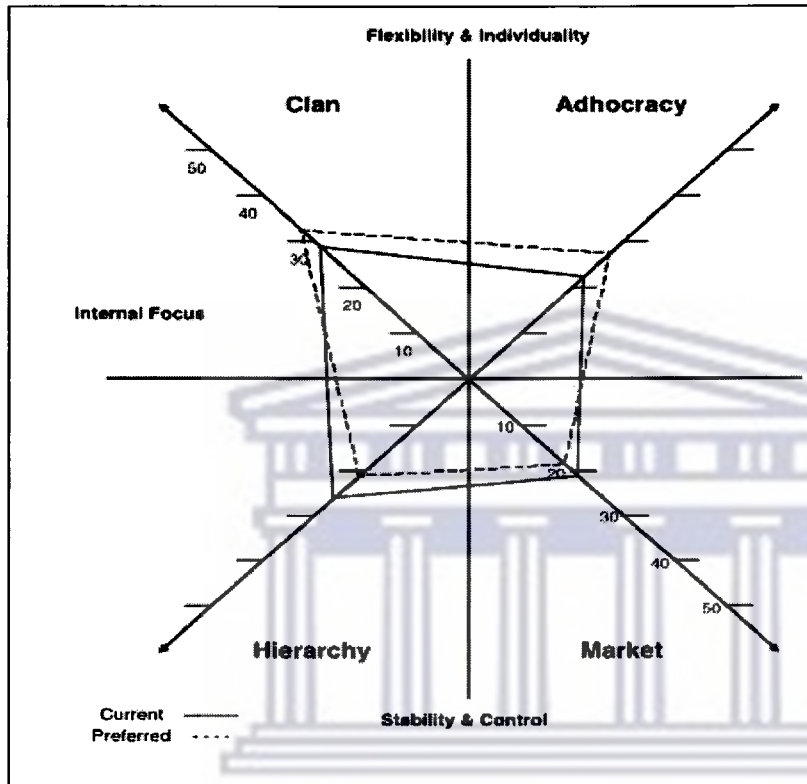


Figure 2.5: Competing Values Framework

Cameron and Quinn (1999) conclude that each quadrant represents basic assumptions, orientations and values – the same elements that comprise organisational culture.

Cameron and Quinn's (1999) approach suggests that it is possible for groups of individuals within the organisation to differentiate themselves around competing values (that is, internal versus external focus, and flexibility-and-individuality versus stability-and-control). This implies that it is possible that parts of the organisation could identify with having more of an internal focus with a preference for stability-and-control (that is, a Hierarchy Culture) while other groups in the organisation identify with having more of an external focus and a preference for flexibility-and-individuality (that is, an Adhocracy Culture). Unlike the integration perspective, where there is organisation-wide consensus regarding norms and values, the differentiation perspective positions consensus as a sub-cultural phenomenon. This much is evident when applying the above rationale with respect to cultural members who hold onto competing values.

It should be noted that Cameron and Quinn (1999) do suggest that specific organisations would position themselves as either belonging to a Market, Clan, Adhocracy and/or Hierarchy culture (that is, where there is organisation-wide consensus regarding how they perceive themselves). However, one could still argue that it is likely that different parts of the organisation may perceive themselves differently (depending on their respective function).

According to Cameron and Quinn (1999), to derive these four different models of organisational culture, six essential dimensions of culture need to be tapped, namely:

- Dominant Organisational Characteristics
- Organisational Leadership Style
- Management of Employees
- Organisational Glue
- Strategic Emphasis
- Criteria for Success

ii. Douglas

Douglas (1970, 1978), as reported by Altman and Baruch (1998), proposed an organisational culture theory known as Grid/Group Analysis (G/G). As can be seen in Figure 2.6, Douglas' (1970, 1978) typology, Grid/Group Analysis could be explained as follows:

- Group: suggests that certain organisations could place their emphasis on teamwork and networking (that is, organisational integration) while others could value the power of individualism
- Grid: suggests that people's behaviour could become constrained by their role classification as their role invariably determines their behaviour

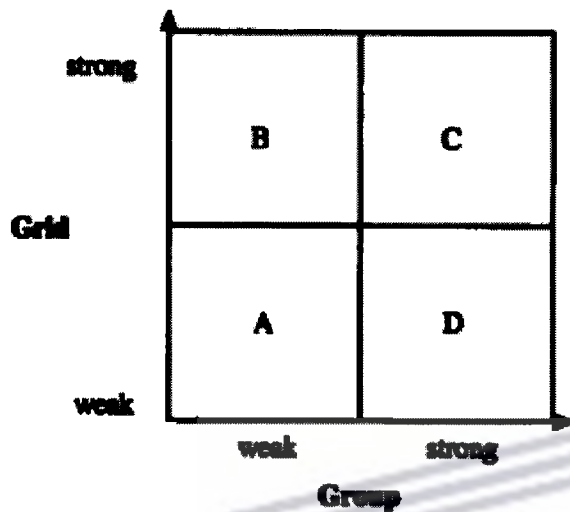


Figure 2.6: Douglas' Grid/Group Model

Following the above description, it is evident that cultural members of a particular organisation could differentiate themselves as being either team-orientated or individualistic. Moreover, these same members could also be differentiated and/or even hindered by their role classification. Given that having different jobs and being at different levels of the organisation seemingly differentiates cultural members from one another, the organisation's culture in itself could be seen as a function of those sub-cultural differences that exist within it (Wilson, 2001). Thus, Douglas' Grid/Group Model (1970, 1978) would seem to align itself more with the elements of the differentiation perspective than either the integration or the fragmentation perspective.

iii. Harrison and Handy

Harrison's (1972) and Handy's (1985) view suggests that there are four different cultural orientations present within any organisation, namely:

- Person orientation: organisational life is guided by what would best satisfy the needs of its members'
- Power orientation: organisational life is governed by the use of power and politics in order to dominate its environment
- Role orientation: organisational life is guided by what is considered rational and orderly (that is, the considerations of members' rights, privileges, legality and legitimacy)
- Task orientation: organisational life is guided by what would facilitate task accomplishment in order to get the job done and achieve results

Given that the above view suggests that there are four different cultural orientations present within any organisation, it implies that it is possible for groups of individuals within the organisation to differentiate themselves around competing orientations (that is, person, power, role, and/or task orientations). It is important to note that the above model uses conflicting opposites (such as person orientation versus task orientation) with which to explore and describe organisational culture. Thus, cultural assumptions could appear somewhat inconsistent with consensus only occurring within the boundaries of a particular subculture. With this in mind, Harrison (1972) and Handy's (1985) view does appear to tap the characteristics of the differentiation perspective (that is, inconsistency and subcultural consensus) more than it does those of the integration and fragmentation perspectives.

iv. Hofstede

Hofstede (1980) identifies four dimensions of culture, namely:

- Power distance: refers to the degree of inequality with which power is distributed within organisations
- Individualism versus collectivism: refers to the degree to which people are either expected to act for themselves or as a member of the group within the organisation
- Masculinity versus femininity: refers to the degree to which tougher values such as assertiveness (that are most often associated with men), are preferred over softer values such as maintaining healthy relationships (which are most often associated with women)
- Uncertainty avoidance: refers to the degree to which uncertainty and risk are preferred over the more rigid structures such as rules and procedures

Hofstede (1980) writes about the collective tendency of units in the organisation to distinguish between one category of people from another. In other words, cultural members consider themselves as being distinct from others (that is, cultural members from one business unit differentiate themselves from those of another). It thus appears that consensus occurs within the boundaries of particular subcultures (such as individualists versus collectivists, and masculine versus feminine). It is also worth noting that Hofstede's (1980) approach seemingly explores organisational culture using such conflicting opposites as individualism versus collectivism, and masculine versus feminine. Thus, Hofstede's (1980) approach tends more to the differentiation perspective than it does the integration and fragmentation perspectives.

v. Kotter and Heskitt

Kotter and Heskitt (1992) refer to two types of cultures namely:

- **Adaptive cultures:** refers to those cultures in which managers focus their attention on the needs of the customers, stockholders and employees (put another way, managers focus their attention on people and processes that create meaningful change)
- **Unadaptive cultures:** refers to those cultures in which managers focus on themselves, their work group or their products (in other words orderly, risk reducing management processes are valued with the result that change strategies do not get taken advantage of)

Bearing Kotter and Heskitt's (1992) two opposing types in mind (that is, adaptive cultures versus unadaptive cultures), it is important to note that each type carries with it its own set of values. For instance, for adaptive cultures, the core values seem to be directed towards care for the customer, stockholder and employee, while on the other hand, in unadaptive cultures, the core values seem to be marked by managers who focus on themselves, their work group or their products. Kotter and Heskitt's (1992) approach brings conflicting opposites to the fore (that is, adaptive and unadaptive) and positions the organisation's culture as a function of those subcultural differences inherent within these opposites. Thus, Kotter and Heskitt's (1992) view clearly aligns itself with the elements of the differentiation perspective.

2.3.3 Models within the Fragmentation Perspective

This approach views ambiguity as the norm, with consensus and difference coexisting in a constantly fluctuating pattern. Events and specific areas of decision-making within the organisation ultimately influence this state of flux between consensus and discord.

A culture viewed from this perspective cannot be characterised as being either in harmony or conflict. Instead, individuals share some viewpoints, disagree about some, and are ignorant of or indifferent to others (Martin and Meyerson, 1988).

According to Martin (1992), studies in organisational culture, which clearly lift out the proponents of the fragmentation perspective, have tended to research specific incidents or issues. These included Weick's (1991) study of air traffic controllers operating on a foggy evening at a Tenerife airport (as reported in Wilson, 2001), and Feldman's (1991) research into policy analysts' writing of reports (as reported in Wilson, 2001).

According to Wilson (2001), other studies, which align themselves to this perspective, include:

- Kreiner and Schultz (1993)
- Meyerson (1991)
- Levitt and Nass (1989)

It should be stressed that even though these studies are present within the literature, they do not in themselves present a model of organisational culture as much as they do a conceptual framework for the interplay of ambiguity and consensus. This is best explained by Anette Risberg's (1997) research, which explores cross-cultural acquisitions. According to Risberg (1997), people with different cultural backgrounds bring different meanings, values, and assumptions into the workplace, and this often leads to misunderstanding and breakdowns in communication (as seen in Figure 2.7). She thus uses the fragmentation perspective to acknowledge the presence of ambiguity, the complexity of relationships, and the multiplicity of interpretations that do not coalesce into a stable consensus (that is, the defining characteristics of the fragmentation perspective).

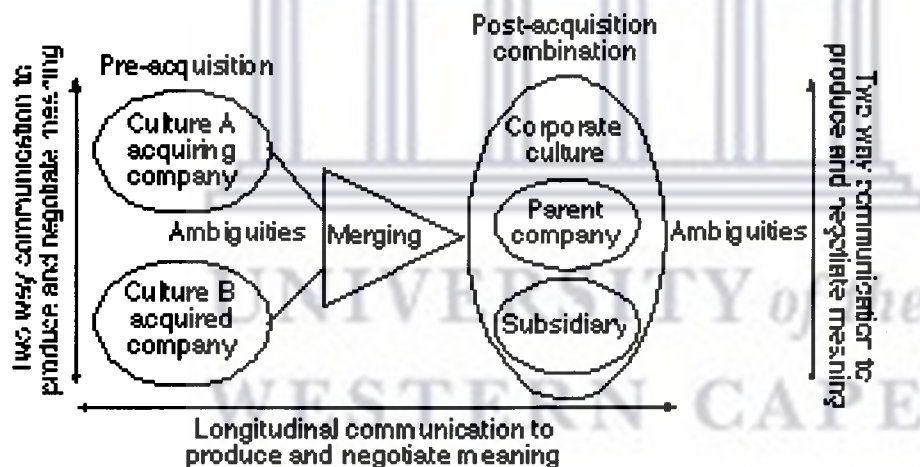


Figure 2.7: Risberg's conceptual framework of acquisitions

When reviewing much of the research on organisational culture, many of the studies tend to focus on only one of these perspectives. According to Wilson (2001), to fully understand the topic of organisational culture, one would need to draw on the elements of each of these perspectives. According to Martin (1992) and Wilson (1997) any organisational culture contains elements of all three perspectives. This is to say that consistency, consensus and integration could very well occur within an organisation, but within the midst of inconsistencies, ambiguities and conflicts.

A review of the above models, many of which form the basis of Smit et al.'s (2006) model, and their fit to one (or more) of the perspectives on organisational culture clearly suggests that most organisational culture theories and models either fall within the integration and/or the differentiation perspective. It is also particularly noteworthy that all of the authors seem to position people ("and the way they do things") as their most prominent element.

Using the core elements contained in some of the above models, the X Model of Organisational Culture (Smit et al., 2006) was borne. The following section will focus on how the model was developed as well as lift out its core dimensions.

2.4 The "X Model" of Organisational Culture

The impetus behind the X Model of Organisational Culture (Smit et al., 2006) was borne out of a mandate from a particular government institution in which there was an express need to describe and assess its organisational culture. Even though a number of validated organisational culture tools existed, the decision was taken to develop an organisational culture tool that was specific to that institution's organisational context. This led to the creation of the X Model of Organisational Culture (Smit et al., 2006) upon which the organisational culture tool was based.

To ensure that a credible organisational culture model was developed, a scientific process had to be followed. A brief discussion regarding this process will be presented below.

2.4.1 Developing the Model

This development process started in September 2005 (with the name of the model only being confirmed in 2006) with a comprehensive exploration of the various definitions, perspectives and models of organisational culture prevalent within academic literature. Using these academic theories of organisational culture as a basis, a preliminary model was proposed.

Based on the review of the literature, a provisional model of organisational culture (Smit et al., 2006), revealed such elements as:

- Integration: refers to the degree of individualism versus collectivism within the organisation

- **Adaptability:** refers to the degree of responsiveness and/or reaction of the organisation to a particular stimulus (for instance, the environment, competitors, etc.)
- **Fluidity:** refers to the degree of structure, rigidity, rules, and procedures within any given organisation
- **Leadership:** refers to the degree power relations and/or power structures which impact the organisation
- **Diversity:** refers to the degree of difference between people within the organisation
- **Strategy:** refers to the degree to which the organisation's objectives, goals, vision, and mission impact the way things get done within it
- **Discipline:** refers to the degree to which the organisation is characterized by 'disciplined people', 'disciplined thought' and 'disciplined action'

Although not ostensibly part of the provisional model, further elements, which were also considered included:

- **Forces:** refers to those hidden elements which act on the organisation thereby causing it to change
- **Performance Indicators:** refers to the visible output regarding the way things get in the organisation (that is, the actual delivery and output of the organisation)

To verify the presence of these elements in the target organisation and further stabilise the model, it was placed under further academic rigour using a series of grounded theory techniques. Here, members of the target organisations were asked how things were done and thought of in terms of such elements as integration, adaptability, fluidity, leadership, diversity, strategy, discipline, forces, and performance. Within each of these elements several concepts seemed to be relevant and were explored using a randomly selected sample of individuals from the target organisation (who were drawn from different departments, with different levels of seniority, and whom had recently undergone either major or minor changes) as well as local and international experts in the private and public sector.

Even though the subsequent qualitative data analysis did bring about some changes in the nature and structure of the provisional model, it became evident that all the elements remained relevant. However, the placement and importance of these elements with respect to each other seemingly changed. Thus, combining information from the literature, qualitative data collected in the area of interest, as well as the mandate from the client, a more stable model emerged. This new model of organisational culture (depicted in Figure 2.8) and its dimensions will be described in the next section.

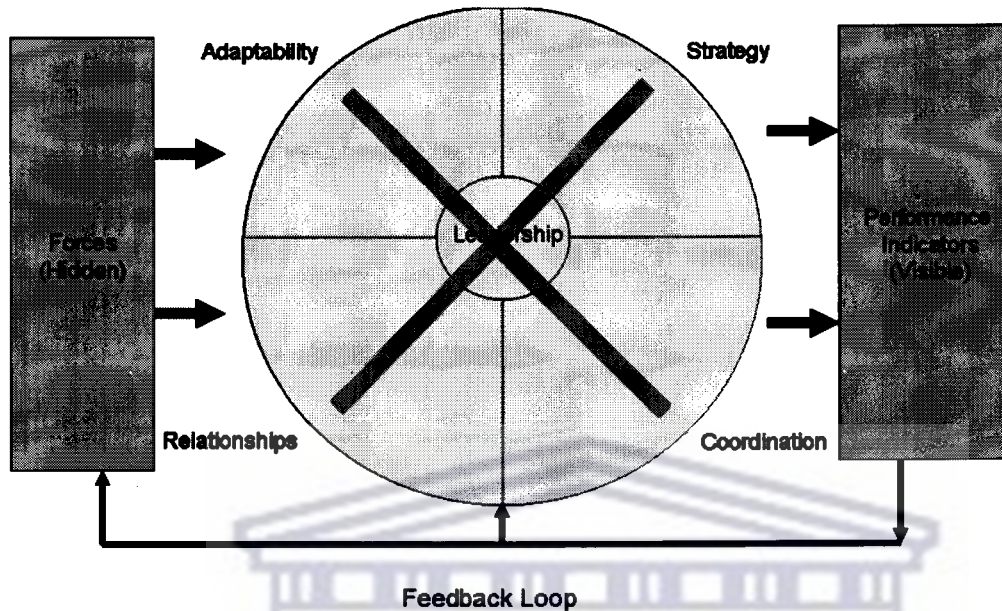


Figure 2.8: The X Model of Organisational Culture

2.4.2 Dimensions of the Organisational Culture Model

This new model of organisational culture, known as the X Model of Organisational Culture (Smit et al., 2006) seemingly captures those cultural dimensions that were most prevalent in both the literature and the qualitative interviews. This section will explore the various dimensions of the organisational culture model as proposed by this model.

According to the above model, organisational culture comprises five key elements, namely; leadership, strategy, adaptability, relationships, and coordination. Each of these elements in turn contains several sub-elements.

i. Leadership

At the centre of the X Model of Organisational Culture (Smit et al., 2006) is leadership. Smit et al. (2006) defines leadership as the degree to which leaders are able to influence the culture of an organisation in a way that ensures optimal service delivery. Contained within leadership are a number of sub elements, such as: energy demonstration, energy transference, vision, integrity, candour/honesty, action, and style.

- *Energy demonstration*: leaders ability to demonstrate energy

- *Energy transference*: leaders' ability to energise others
- *Vision*: leaders' ability to see the bigger picture and give meaning to it
- *Integrity*: leaders' ability to demonstrate integrity and build trust
- *Candour/Honesty*: leaders' ability to face reality and make tough decisions
- *Action*: leaders' ability to convert energy into action and results
- *Style*: leaders' ability to use different styles for different times

Arranged around its core are four further elements namely strategy, adaptability, coordination, and relationships.

ii. Strategy

Positioned at the top, right-hand corner of the model is strategy. According to Smit et al. (2006), strategy can be described as the degree to which the organisation is clear about its strategic direction. The sub-elements of strategy include: direction creation, objective setting, engagement, communicating meaning, and alignment.

- *Direction creation*: the organisation's ability to create long-term direction and meaning
- *Objective setting*: the organisation's ability to concretise vision into tangible goals
- *Engagement*: the organisation's ability to involve and consult its personnel when formulating strategy
- *Communicating meaning*: the organisation's ability to give meaning to, and communicate the bigger picture to all its personnel
- *Alignment*: the organisation's ability to create line of sight between an individual's job and the strategic direction of the organisation

iii. Adaptability

The upper-left-hand corner of the model is home to the element adaptability. Adaptability is noted as the degree to which an organisation is in contact with and responds to change within its surrounding environment in order to improve its service delivery (Smit et al., 2006). The sub-elements of adaptability include: client focus, creating change, organisational learning, innovation and creativity, and flexibility.

- *Client focus*: the degree to which the organisation is able to understand, and respond to the needs of its clients
- *Creating change*: the degree to which the organisation is able to create change based on new knowledge gained

- *Organisational learning*: the degree to which the organisation is able to share knowledge, information and experience
- *Innovation and creativity*: the degree to which the organisation is able to tap into each individuals' creativity and innovativeness
- *Flexibility*: the degree to which the organisation is able to use policies, rules, regulations and beliefs in a way that enables change

iv. Coordination

The next element of the X Model of Organisational Culture (Smit et al., 2006) is coordination. Smit et al. (2006) describes coordination as the degree to which the formal structures and systems in the organisation are aligned (both horizontally and vertically) for optimal service delivery. This dimension is divided into several elements, namely: organisational structure, processes and systems, positional power, performance management, and communication management.

- *Organisational structure*: the organisations ability to align its organisational structure with the needs of the client
- *Processes and systems*: the organisations ability to align its systems and processes with the needs of the client
- *Positional power (rank and role)*: the organisations ability to use positional power to coordinate service delivery
- *Performance management*: the organisations ability to align its performance management systems with its service delivery outputs
- *Communication management*: the organisations ability to align its communication channels to ensure coordination and improved service delivery

v. Relationships

The final element of the model is relationships. According to Smit et al. (2006) the term relationships refers to the degree to which people in the organisation work together to form strong working relationships to ensure optimal service delivery. The sub-elements that will impact the strength of organisational relationships include: team orientation, cooperation, diversity, talent management, and values.

- *Team orientation (within teams)*: the ability of the cultural members within teams to work together as a collective towards a common goal

- *Cooperation (between different teams, organisational units and levels in the organisation)*: the ability of teams, organisational units and levels to work together as a collective towards a common goal
- *Diversity*: the ability of the organisation to appreciate and embrace difference as an organisational strength
- *Talent management*: the ability of the organisation to develop the core competencies (knowledge, skills and experience) of its people through training and development
- *Values*: the ability of the organisation to align the espoused values with its actual values

vi. Climate, Forces and Performance Indicators

Although not ostensibly part of the X Model of Organisational Culture's (Smit et al., 2006) circular framework, the notions of climate, forces and business performance indicators were also included within the theoretical framework, as these were theorised to be related to the core organisational culture elements.

Smit et al. (2006) suggests that *forces* relate to those drivers such as external environmental factors and internal personal belief systems, which have the capacity to create and change the culture of that organisation.

According to Smit et al. (2006), the culture of the organisation influences its performance. Conversely, it's theorised that its *performance indicators* (also referred to as *business performance indicators*) also impacts the way in which people do things in the organisation. Put another way, the way in which people do things within the organisation could be seen as a function of that against which the organisation is measured.

Smit et al. (2006) describes *organisational climate* as employees' experiences and events clustered into meanings. They argue that climate is linked to thoughts, feelings and behaviours of organisational members. Put another way, climate refers to "*the way people feel about things*" within the organisation.

It is clear that none of the cultural elements of the X Model of Organisational Culture (Smit et al., 2006) as cited above are in themselves unique. All of the concepts, descriptions and definitions were developed through a series of qualitative studies as well as a broader literature survey on such topics as organisational theory, organisational behaviour, organisational culture and leadership. Smit et al. (2006) used the above theoretical assumptions and integrated them in such a way that the X Model of Organisational Culture was borne. Using Smit et al.'s (2006) X

Model of Organisational Culture as its basis, an organisational culture assessment tool was then developed.

The following section will describe the development of the organisational culture assessment tool, its core elements and the significance of the tool.

2.5 Existing Organisational Culture Assessment Tools

The interest in organisational culture noted by Barley (1983) has given rise to a variety of questionnaires designed to assess organisational culture. Many of these tools seem to lack consensus concerning their style and format (Meyerson, 1991; Ott, 1989). For the purpose of this research, three assessment tools, which share both similarities and differences in their style and format, will be discussed briefly before focussing on the X Model of Organisational Culture (Smit et al., 2006).

2.5.1 The Denison Culture Survey (DCS)

Denison's (1990) 15-year research of more than 1000 companies of different sizes, sectors, industries and ages has provided compelling support for his four trait model of organisational culture (which includes such traits as mission, involvement, consistency and adaptability), each containing three indexes, namely:

- Mission included vision, goals and objectives, and strategic direction
- Involvement included empowerment, team orientation, and capability development
- Adaptability included creating change, customer focus, and organisational learning
- Consistency included core values, agreement, and coordination and integration

Denison's research allowed him to conclude that the above traits and indexes were the quintessential drivers for a high performance culture. Here, the reliability of those items within each index was found to be internally consistent, with all of the 12 indexes presenting acceptable reliability. Treating the 12 indexes as observed measures and the four underlying traits as the 'latent variables', confirmatory factor analysis established that the index structure fit the model itself. When linking each of the indexes to the four cultural traits, Denison (1990) also found that the lambda coefficients' loadings revealed a strong and relatively consistent relationship, thereby

indicating good support for the underlying model. Moreover, Denison (1990) also linked the four latent variables of involvement, consistency, adaptability, and mission – somewhat like intercorrelations among the four traits, to evaluate the relationship between them. Here, the phi coefficients were found to be very high thus indicating a close relationship between them. Thus, not only supporting the idea that these are four characteristics of the cultures of effective organisations, but also the notion that if a high-performing organisation had one of these characteristics, they would most likely have the other three.

The assessment tool that helped Denison to draw these conclusions contains sixty items measuring the twelve indexes and four underlying traits (which is available in either paper or electronic form). Responses to each of the items were measured on a 5-point Likert scale that was ranged from 1 (“strongly disagree”) to 5 (“strongly agree”). Eight items are phrased negatively (and which are subsequently reversed for scoring).

It is worthy to note that the goodness of fit statistics used to evaluate the structural equation models indicated that his framework fit the data rather well. Despite the problems with the high interrelationships between the four traits, Denison’s (1990) analysis presents a scientifically sound and objective measure with which to evaluate a high performance culture. However, due to the use of Americanisms (that is, words and phrases that are particular to the American context – for instance, “we make certain that the ‘right hand knows what the left hand is doing’”) that are contained within the questionnaire and the high cost incurred for high volumes and repeated measurements, this tool may not necessarily be relevant and affordable for the South African context. This argument served as the impetus for decision not to use Denison’s survey tool, but rather to use it as one of the core models leading up to the development of the X Model of Organisational Culture (Smit et al., 2006).

2.5.2 The Organisational Culture Assessment Instrument (OCAI)

Cameron and Quinn (1999) developed the Organisational Culture Assessment Instrument (OCAI), which is based on the Competing Values Framework (CVF). The OCAI identifies how the current organisational culture is perceived.

The purpose of the OCAI is to assess six key dimensions of organizational culture, namely:

- Dominant Organisational Characteristics
- Organisational Leadership Style

- Management of Employees
- Organisational Glue
- Strategic Emphasis
- Criteria for Success

For each of the six dimensions respondents suggest the weight that the organisation gives or should give to values that represent each of the four quadrants of the CVF. An average for each quadrant is calculated from the six dimensions, and is then plotted.

This is often done twice, where the first rating refers to the culture as it exists today (and is labelled “Now”), and the second response being based on how the respondent would like the organisation to look (and is labelled “Preferred”).

The OCAI consists of 24 questions organised into six parts with four descriptions in each part (that is, six questions, each with four alternative answers, corresponding to the four cultures). Each of the four descriptions matches the definitions for the respective culture types (that is, hierarchy, clan, market and adhocracy). In completing the instrument, respondents provide a picture of how their organisation operates and the values that characterise the organisation. Thus, an organisational culture profile can be determined by plotting the organisation's dominant culture types as either falling within:

- Clan
- Hierarchy
- Adhocracy
- Market

These four culture types serve as the foundation for the OCAI.

As stated above, the OCAI consists of six questions, each with four alternatives. The respondent is expected to divide 100 points among each of the four alternatives depending on the extent to which she/he agrees with the statement. This is to say that if in question one, she/he agrees very strongly with alternative A and gives it 55 points, and thinks that alternative B and C are of similar importance (but not as important as A) and gives it a score of 20 points each, then she/he will need to attach a score of five points to alternative D as the total needs to equal 100 points for each question.

When referring to the reliability coefficients shown in Table 2.1 (as reported by Cameron and Quinn, 1999), calculated using cronbach's alpha, the reliability of for each of the culture types is seemingly high, which suggests that the there is high internal consistency.

Coefficients of Internal Consistency Using Crombach's Alpha Methodology	
Culture Type	Reliability Coefficients
Clan	.82
Adhocracy	.83
Market	.67
Hierarchy	.78

Table 2.1: Reliability coefficients reported by Cameron and Quinn

Eventhough the OCAI is very useful in determining the degree to which an organisation's culture supports its mission and goals, and in identifying underlying elements in the culture, which may promote and/or impede high performance, it's simplicity could be considered its downfall. With only 24 questions, it limits the exploration of the many of the other nuances, which may also have an impact on the organisations' performance.

The need expressed by Smit et al.'s (2006) target organisation for a richer description of organisational culture further served as motivation for the development of a new model.

2.5.3 The Culture Assessment Instrument (CAI)

The Culture Assessment Instrument (CAI), which was originally developed to measure the culture of a particular financial institution in South African, is based on Martins' (1987, 1997) Organisational Culture Model. The instrument was thus developed and validated for South African context.

According to Du Toit (2002), the CAI consists of two parts, namely:

- Section A: Questions regarding organisational culture
- Section B: Biographical questions

The standard instrument consists of 89 items, with allowance made for the inclusion of additional items, which may are unique to that particular organisations' circumstances.

Martins' standard questionnaire, as cited in Du Toit (2002), measures such dimensions and sub dimensions as:

- *Mission and vision* – mission, goals, and core values (an example of a question relevant to the mission and vision dimension is question two: "I understand the overall objectives of the organisation")
- *External environment* – client focus, and community involvement (an example of a question relevant to the external environment dimension is question seven: "I know precisely who our target market and clients are")
- *Means to achieve objectives* – technology, physical appearance, training, personnel services, change and management of change, organisational structure, and support (an example of a question that makes reference to the means to achieve objectives dimension is question 19: "We are satisfied with the technology, equipment, job tools and other physical things we need to do our work")
- *Management processes* – control, communication, decision-making, innovation process, and formulate objectives (an example of possible question that is included under the management processes dimension is question five: "Written objective contracts for at least the next 12 months are given to employees")
- *Employee needs and objectives* – personnel versus organisation needs, and personnel satisfaction versus organisation objectives (an example of a question relevant to the employee needs and objectives dimension is question 59: "Performance is evaluated objectively according to actual results")
- *Interpersonal relationships* – manager versus worker, interdepartmental relations, and management of conflict (an example of a question relevant to the interpersonal relations dimension is question 45: "Purposeful action is taken to involve all employees in decision making")

In Martins and Terblanche (2003) there is further mention of two additional elements, namely:

- *Image of the organisation*
- *Leadership*

The usefulness of a Martins' (1987, 1997) CAI is best explained by referring to its reliability and validity statistics. A factor analysis, which was carried out on the instrument, revealed an overall reliability (as per cronbach's coefficient alpha) of 0,933 with an internal consistency of the dimensions varying between 0,655 and 0,932.

Despite this tool being rooted in the South African context, it did not tap the uniqueness of the public service environment. The need to develop a tool that was specific to the public sector was invariably that which led to the development of Smit et al.'s (2006) new organisational culture tool.

2.6 The “X Model” of Organisational Culture’s Assessment Tool

Even though the concept of organisational culture has been around in organisational and management literature since the Hawthorne studies of the late 1920s, researchers still disagree on the best way to measure it. DeVellis (1991, p.1-2) states that:

“in the quantification of a particular phenomenon in research where there are either inappropriate or unavailable measurement tools, the development of a measurement instrument seems to be the only option” (which is the case in this study).

Denison (1990) suggests that people’s behaviour is in a sense a reflection of an organisation’s culture and that by measuring these behaviours one could essentially measure that organisation’s culture.

Bearing DeVellis (1991) and Denison’s (1990) views in mind, Smit et al. (2006) undertook to operationalise the theoretical definitions of the X Model of Organisational Culture by developing an organisational culture assessment tool. Here, Smit et al.’s (2006) aim was to unpack the theoretical definitions in such a way that it allowed respondents to assess specific observable behaviour. However, for the organisational culture assessment tool to be perceived as a valid tool, it should reflect the emerging research perspectives on organisational culture. Thus, the process used to develop the assessment tool needs to conform and/or include certain key steps.

The following section will describe the step-by-step process that was used in the development of the organisational culture assessment tool.

2.6.1 Developing the Assessment Tool

The development of the organisational culture assessment tool, as reported by Forster et al. (2005), began with a comprehensive literature review regarding different types of questionnaires and commonly used practices regarding questionnaire design. Upon reviewing the literature, it was noted that DeVellis’ (1991) eight steps on the development of a scale instrument, which are

supported by Clark and Watson (1995), provided a step-by-step process for developing an assessment instrument. These steps include:

- Step 1: Determine clearly what is to be measured (that is, the purpose) – This invariably means asking the question, “*what construct(s) is the tool expected to measure*”. In Smit et al.’s (2006) case, the question asked was: “*Does this statement and/or question tell us anything about the organisation’s culture?*”
- Step 2: Generate an item pool – Using the X Model of Organisational Culture (Smit et al., 2006) as the basis, a focus group consisting of two senior academics, two external organisational development consultants and two client representatives developed questions and/or items that tapped both the theoretical and operational definitions of the model.
- Step 3: Determine the format for the measurement – A Likert-type scale was viewed as a the most appropriate measurement scale because it provided five choices of options ranging from “strongly agree” to “strongly disagree”
- Step 4: Have initial item pool reviewed by a pool of experts – In an attempt to confirm and/or invalidate the inclusion of specific items, evaluate the clarity and conciseness of other items, and point out ways to expand others, a pool of experts were once again drawn in to add value to the process.
- Step 5: Consider the inclusion of validation items – The 259-item questionnaire that was developed by the research team included almost twice as many items than is conventionally required. The reason for this was so as to include a series of validation items that would invariably be eliminated following the statistical validation process.
- Step 6: Administer the items to a development sample – For the purposes of this research study, the organisational culture questionnaire was distributed to a diverse group of 661 individuals, from twelve different departments within the client organisation. According to DeVellis (1991) as well as Clark and Watson (1995), this sample size was large enough to provide the degree of measurement precision and accuracy generally accepted by the scientific community.
- Step 7: Evaluate items – The intent of this step is to evaluate the items in order to determine which ones to include or retain from the item pool. This is done by way of items analysis, which is typically equated with cronbach’s coefficient alpha. According to Anastasi and Urbina (1997) as well as Clark and Watson (1995), items with an alpha value of 0.70 and higher are viewed as acceptable regarding reliability, the nearer to 1 the better.
- Step 8: Optimise scale length using factor analysis – After determining whether the assessment tool demonstrates acceptable reliability or not, factor analysis is used to

optimise the length of the scale. The purpose of factor analysis is to construct common underlying dimensions in which the individual items can be grouped.

It is necessary to emphasize that step six, seven and eight form the basis of this research. Here, the focus will be to evaluate the stability of pilot questionnaire and thereby determine whether the X Model of Organisational Culture (Smit et al., 2006) presents an appropriate tool with which to describe and diagnose organisational culture.

To adequately evaluate the stability of pilot questionnaire, it is prudent that a thorough description of the actual organisational culture questionnaire be provided.

2.6.2 Describing the Organisational Culture Assessment Tool

The 259-item organisational culture assessment tool, which is the focus of this research, consists of 257 quantitative items and two qualitative items. The reason for developing an assessment tool with as many items was so as to include a series of validation items that would invariably be eliminated following the statistical validation process (Forster, Smit, Ludik, & Van Lill, 2005).

Each item is rooted in the theoretical assumptions proposed by the X Model of Organisational Culture (Smit et al., 2006). Using the model's theoretical definitions, questions for each element and its sub-element were formulated. These questions each tapped specific observable behaviours and were arranged along a five-point Likert scale, with each statement ranging from strongly agree to strongly disagree. In order to help rank items, each question and/or statement was scored according to a value (as illustrated in Figure 2.9).

Strongly Disagree	Disagree	Unsure	Agree	Strongly Agree
1	2	3	4	5

Figure 2.9: The Likert-type response scale

Notably, the neutral or unsure response is located in the middle of the scale between extremely negative and extremely positive.

To facilitate a more comprehensive understanding of the organisational culture assessment tool, it is important to know which items constitute which section, and how these sections relate to

each sub-element of the model. A broad overview of the assessment tool will be provided below (for a more detailed look at the assessment tool, refer to Appendix 1).

i. Section 1: Biographical

The items contained within the biographical section included:

- Department
- Salary level
- Gender
- Language
- Years of service
- Academic qualification
- Age
- Disability
- Location

ii. Section 2: Leadership

The sub-elements contained within the leadership domain included:

- Energy Demonstration – 6 items
- Energy Transference – 9 items
- Vision – 8 items
- Integrity – 7 items
- Honesty/Candour – 8 items
- Action – 4 items
- Style – 10 items

iii. Section 3: Strategy

The sub-elements that constitute strategy included:

- Direction Creation – 7 items
- Objective Setting – 5 items
- Engagement – 5 items
- Communicating Meaning – 15 items
- Alignment – 6 items

iv. Section 4: Adaptability

The sub-elements, which comprise adaptability, included:

- Client Focus – 9 items
- Creating Change – 7 items
- Organisational Learning – 6 items
- Innovation and Creativity – 7 items
- Flexibility – 6 items

v. Section 5: Coordination

Coordination was divided into several sub-elements, namely:

- Organisational Structure – 7 items
- Processes and Systems – 7 items
- Positional Power (including rank and role) – 8 items
- Performance Management – 14 items
- Communication Management – 7 items

vi. Section 6: Relationships

The sub-elements that comprise relationships included:

- Team orientation (within teams) – 6 items
- Cooperation (between teams and organisational units and levels) – 7 items
- Diversity – 18 items
- Talent Management – 10 items
- Values – 23 items

vii. Section 7: Climate

There were 18 survey items, which constituted the climate element.

viii. Section 8: Business Performance Indicators

There were 5 survey items that constituted the business performance indicators section.

ix. Section 9: Forces

There were 2 qualitative survey items for the forces section, with:

- 1 qualitative survey item for the Hidden Forces dimension, and
- 1 qualitative survey item for the Motivational Factors dimension

2.7 Summary

It is evident from the above chapter that organisational culture theories, models and perspectives have been well documented in the literature. Amongst these, is the one proposed by Smit et al. (2006) regarding the X Model of Organisational Culture. Given that this model is the first of its kind, it should be emphasized that in its current state, the model (as well as its assessment tool) is highly modifiable and tentative in nature. It will therefore be used as the basis for this research.

This chapter detailed an investigation into the documented evidence on the topic of organisational culture and the formulation of a research model. Chapter three will describe the research design and methodology applied.

The logo of the University of the Western Cape, featuring a stylized classical building with columns and a pediment.

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Chapter 3: The Research Design and Methodology

3.1 Introduction

As discussed in the literature section of the study, the primary aim of this research is to present scientific inquiry into the psychometric properties of Smit et al.'s (2006) organisational culture assessment tool.

The aim of this chapter is to provide an overview of the research process and methodology that was followed in the empirical part of the study. Some of the elements that will be discussed include, the research design that was adopted, the research methods that were used, the approach to sample selection as well as the data dissemination and collection techniques that were used.

3.2 Research Design

This research forms part of an expressed need from a particular government organisation to statistically validate their organisational culture survey tool, which was based on the X Model of Organisational Culture (Smit et al., 2006). The study will focus on the empirical analysis of the psychometric properties of Smit et al.'s (2006) assessment tool.

According to Mouton and Marais (1988), as a minimum psychometric prerequisite, reliability should be determined first, followed by validity.

Two other studies that followed this approach include:

- Denison et al.'s (2005) statistical validation of the sixty-item, twelve-index organisational culture survey tool, which later became known as the Denison Culture Survey (DCS). This statistical validation study consisted of three phases. Phase one involved the exploration of the psychometric properties of the survey tool. Here, part one (of phase one) involved an investigation into whether each of the twelve indexes had an acceptable level of internal consistency. Part two (of phase one) saw a confirmatory factor analysis being conducted to examine the pattern of relationships between the observed variables

and latent traits that made up the hierarchical structure of the model. Phase two of the analysis looked at the degree to which respondents' ratings across 160 organisations were in agreement with each other. The third phase of Denison et al.'s (2005) study considered the relationships between the culture indexes and traits and measures of organisational effectiveness in order to source evidence relating to the criterion-related validity of the culture survey tool.

- Du Plessis' (2004) main focus in her study was to develop a diagnostic assessment tool with which to measure project management culture in organisations. Her primary aim was to develop a reliable and valid diagnostic assessment tool with which to measure project management culture. This meant that Du Plessis (2004) had to follow a four-stage approach consisting of a literature study, a verification of the project culture dimensions and elements (by a focus group of experts), the development of the project management assessment tool, and finally the pilot testing of the assessment tool. The development of the assessment tool saw Du Plessis (2004) following DeVellis' (1991) step six, seven and eight of his eight-step research process regarding the development of a scale instrument. In short, this involved administering the items to a development sample, the evaluation of the items using item analysis and the optimisation of the scale length using factor analysis.

It is clear from the above research studies that both Denison (2005) and Du Plessis (2004) followed Mouton and Marais' (1988) view that as a minimum psychometric prerequisite, reliability (that is, using item analysis and internal consistency) should be determined first, followed by validity (that is, using factor analysis and structural equation modelling).

In determining the reliability and validity of the assessment tool, this study evaluates whether the items contained within the assessment tool:

- Endorse the construct it is intended to, and
- Cluster around specific constructs and/or factors

The research process was based on DeVellis' (1991) step six, seven and eight of his eight-step process regarding the development of a scale instrument. These steps were:

- Step 6: Administer the items to a development sample
- Step 7: Evaluate items
- Step 8: Optimise scale length using factor analysis

The research design was structured according to the following steps:

- Convert questionnaire into an electronic excel-based questionnaire (to expedite the dissemination and collection process)
- Disseminate questionnaire to sample group
- Collect questionnaire from sample group
- Capture data into an excel spreadsheet
- Check data for errors
- Input data into statistical analysis software program (SPSS – Software Package for the Social Sciences)
- Clean data before analysis
- Analyze data (evaluate questionnaire to determine reliability and validity)
- Report on data (from the results, suggest items for deletion – refine and stabilize the questionnaire)

The following section will present insight into the methodology and principles that were used in this study.

3.3 Research Methodology

This study makes use of a quantitative research methodology to explore whether the X Model of Organisational Culture's assessment tool (Smit et al., 2006) is a scientifically valid and reliable means with which to describe and measure organisational culture.

The aim of this section is to provide an insight into the practical ways and methods that were used in gathering the information necessary for the empirical part of this study. The sampling frame, measurement instrument, and data collection and processing methods will be discussed below.

3.3.1 Sample

Particulars of the sample that were included as part of this study's biographical information section included such categories as:

- Department (see Table 3.1)
- Salary level (see Table 3.2)

- Gender (see Table 3.3)
- Language (see Table 3.4)
- Years of service (see Table 3.5)
- Academic qualification (see Table 3.6)
- Age (see Table 3.7)
- Disability (see Table 3.8)
- Location (see Table 3.9)

Department	Sample	%
Department 1	60	14.42%
Department 2	10	2.4%
Department 3	4	0.96%
Department 4	16	3.85%
Department 5	36	8.65%
Department 6	104	25%
Department 7	11	2.64%
Department 8	5	1.2%
Department 9	19	4.57%
Department 10	20	4.81%
Department 11	98	23.56%
Department 12	33	7.94%
Total	416	

Table 3.1: Department Sample Description

From Table 3.1 it is clear that there all twelve departments from the target population participated in this study. However, there are significant differences in the sample sizes between the different departments ranging from 4 (in “Department 3”) to 104 (in “Department 6”). It should be noted that participants from these twelve departments were randomly chosen (by the target organisation’s departmental client managers) to participate in this study.

Salary Level	Sample	%
SL 1-8	220	52.88%
SL 9-12	153	36.78%
SL 13-16	43	10.34%
Total	416	

Table 3.2: Salary Level Sample Description

Table 3.2 depicts the three different salary bands that were used in the study. Here, it is worth noting that the lowest salary band (that is, “SL 1-8”) comprised the largest percentage sampled (that is, 52.88%) while the highest salary band (that is, “SL 13-16”) comprised only 10% of the sample. This is an important consideration given that the Leadership section of the questionnaire asks participants to rate their perceptions of their leaders. Had the data been skewed in the opposite direction, due consideration would have had to be given to it during the analysis phase.

Gender	Sample	%
Male	216	51.92%
Female	200	48.08%
Total	416	

Table 3.3: Gender Sample Description

The data from Table 3.3 suggests that there was close to a 50/50 split between the number of men (that is, 51.92%) and women (that is, 48.08%) sampled in the study.

Language	Sample	%
Afrikaans	222	53.37%
English	158	37.98%
isiXhosa	30	7.21%
Other	6	1.44%
Total	416	

Table 3.4: Language Sample Description

As shown in Table 3.4, there were three distinct language groups of which the a fourth was included (and labelled as “Other”). It is interesting to note that despite one of the core sampling criteria for the study being the ability of the participant to have a good grasp of the English language (in order to expedite the research process), Afrikaans was the highest preferred medium of choice (that is, 53.37%) with English speaking individuals amassing 37.98%. Here, 7.21% of the sample was isiXhosa speaking, with 1.44% of the sample marking their preferred mother-tongue as “other”.

Years of Service	Sample	%
Less than 1 year	18	4.33%
1 - 3 years	34	8.17%
4 - 6 years	44	10.58%
7 - 10 years	26	6.25%
10+ years	294	70.67%
Total	416	

Table 3.5: Years of Service Sample Description

The “Years of Service” data from Table 3.5 highlights the five distinct years of service categories that were drawn from the target population. Table 3.5 clearly shows that there are significant differences in the sample sizes between the different categories ranging from 18 (in the “Less than 1 year” category) to 294 (in the “10+ years” category). It is important to note that this high of 294 in the “10+ years” category (that is, 70.67% of the sample), supports the ends of this research in that those cultural members who have been part of the organisation for a while should be in a better position to comment on the “way in which that organisation does things” (that is, the culture of that organisation).

Academic Qualification	Sample	%
Lower than Matric	13	3.12%
Matric (Grade 12)	151	36.3%
Diploma / degree	150	36.06%
Post graduate qualification	102	24.52%
Total	416	

Table 3.6: Academic Qualification Sample Description

Table 3.6 illustrates the different academic qualification bands that were included in the sample. It is important to note that the split between the diploma/degree and post-graduate qualification categories was designed to differentiate between those tertiary educated individuals who had obtained an undergraduate qualification and those who received a post graduate qualification (as per the client’s request). Here, the smallest group sampled was from the “Lower than Matric” band, which amounted to 3.13% of the sample population. The “Matric” and “Diploma/degree”

constituted 36.3% and 36.06% respectively while the “Post graduate qualification” band amounted to 24.52% of the sample.

Age	Sample	%
Below 20	2	0.48%
Between 20-30	49	11.78%
Between 30-40	171	41.11%
Between 40-50	132	31.73%
Over 50	62	14.9%
Total	416	

Table 3.7: Age Sample Description

From Table 3.7 it is clear that there are significant differences in the sample sizes between the different age groups sampled ranging from 2 (in the “Below 20” category) to 171 (in the “Between 30-40” category).

Disability	Sample	%
Yes	18	4.33%
No	398	95.67%
Total	416	

Table 3.8: Disability Sample Description

Table 3.8 shows that 95.67% of the sample population do not suffer from any disabilities.

Location	Sample	%
HO	357	85.82%
Regional	34	8.17%
Institution	25	6.01%
Total	416	

Table 3.9: Location Sample Description

As illustrated in Table 3.9, 85.82% of the sample was located at “Head Office”, while “Regional” and “Institution” numbers amassed 8.17% and 6.01% respectively. It should be noted that the intent to centralise the sample group to “Head Office” was done in order to expedite the research process (that is, have greater control of the data dissemination and collection process).

Department	Population	%	Sample	%
Department 1	495	0.84%	60	14.42%
Department 2	672	1.14%	10	2.4%
Department 3	465	0.79%	4	0.96%
Department 4	91	0.15%	16	3.85%
Department 5	216	0.37%	36	8.65%
Department 6	21826	37.01%	104	25%
Department 7	782	1.33%	11	2.64%
Department 8	1339	2.27%	5	1.2%
Department 9	1457	2.47%	19	4.57%
Department 10	178	0.30%	20	4.81%
Department 11	31100	52.74%	98	23.56%
Department 12	347	0.59%	33	7.94%
Total	58968		416	

Salary Level	Population	%	Sample	%
SL 1 to 8	51484	87.31%	220	52.88%
SL 9 to 12	7198	12.21%	153	36.78%
SL 13 to 16	286	0.49%	43	10.34%
Total	58968		416	

Gender	Population	%	Sample	%
Male	21042	35.68%	216	51.92%
Female	37926	64.32%	200	48.08%
Total	58968		416	

Location	Population	%	Sample	%
HO	5596	9.49%	357	85.82%
Regional	2543	4.31%	34	8.17%
Institution	50829	86.20%	25	6.01%
Total	58968		416	

Table 3.10: Sample Description

Table 3.10 describes the nature of the population as well as that of the sample and indicates for each type of respondent group (and/or category) the percentage in relation to the total. From Table 3.10 it becomes clear that the sample is not proportionally similar in nature to that of the estimated population in terms of the selected categories.

These above categories (namely, “Department”, “Salary Level”, “Gender” and “Location”) were selected because of the ease with which the population figures could be drawn from the organisation’s information management system (that is, PERSAL), and thus compare it to the sample. This is to say that, detailed information regarding the populations’ “Language”, “Years of service”, “Academic qualification”, “Age” and “Disability” were readily available.

It should be noted that 661 participants from the target population were invited to participate in the study (of whom only 416 responded). These 661 participants were chosen quite arbitrarily. This is to say that sampling was done in an unstructured manner, thus making the approach to sampling one, which is referred to as convenience sampling (Cochran, 1977; Kish, 1995).

With the above sample group in mind, it is important to understand the nature and content of questionnaire, which was presented to these individuals. A brief description of the measurement instrument will be offered below (for a more detailed discussion refer to Chapter 2, section 2.6.2).

3.3.2 Measurement instrument

The pilot version of the X Model of Organisational Culture’s assessment tool (Smit et al., 2006) was used as the measurement instrument. Here, the intention was to test the pilot version on a small group of people in order to refine it and revise the questionnaire where applicable.

A structured, 259-item questionnaire consisting of 257 quantitative items (each positioned along a five-point Likert scale with each statement ranging from strongly agree to strongly disagree) and two qualitative items was used as the principle means for collecting data from the designated sample group. In order to help rank items, each question and/or statement was graded according to a value as depicted in Figure 2.9 (refer to Chapter 2, section 2.6.2).

The questionnaire consisted of nine sections, namely:

- Section 1: Biographical
- Section 2: Leadership
- Section 3: Strategy
- Section 4: Adaptability
- Section 5: Coordination
- Section 6: Relationships

- Section 7: Climate
- Section 8: Business Performance Indicators
- Section 9: Forces (which included a Hidden Forces item, and a Motivational factors item)

A detailed example of the questionnaire is presented in Appendix 1 (and is described in detail in Chapter 2).

In order to distribute the questionnaire electronically to all the participants, it was converted into an excel-based questionnaire.

It should be noted that the rationale for using the survey approach was because it allowed for the systematic gathering of information from each of the participants for the purposes of understanding the behaviour of that population (Tull & Hawkins, 1987; Baker, 2003).

3.3.3 Data collection methods

Survey questionnaires were distributed electronically (via the institution's electronic communication system – that is, their intranet system) to approximately 661 public servants within the target organisation, of which 416 responded. The response rate was therefore 63%.

Given that the questionnaires were completed in an excel-spreadsheet, they were captured electronically and then imported into a central excel spreadsheet. This approach involved a “cut-and-past” process where completed questionnaires were merely copied into a central database for processing.

The data contained within the central excel database was then imported into SPSS for analysis (SPSS – Software Package for the Social Sciences).

3.3.4 Data processing

The questionnaires were analysed and interpreted electronically by means of the SPSS Software at the Section for Organisational Psychology, School of Management Studies at the University of Cape Town.

It is important to note that human intervention was kept to a minimum. Here, human intervention was only utilised in the:

- Importing of data from the questionnaire to the central database
- Importing of data from the central database to SPSS
- Analysis and cross-tabulations of data on the SPSS system

When processing the data, survey items with missing data on any of the 257 items were excluded. Thus, the number of completed survey responses varied from section-to section. The total number of responses for each scale was:

- Leadership scale = 389
- Strategy scale = 387
- Adaptability scale = 408
- Coordination scale = 404
- Relationship scale = 406
- Climate scale = 407

3.3.5 Statistical analysis

As illustrated above, the empirical analysis of the quantitative data was restricted to six of the nine sections of the organisational culture questionnaire, namely: Leadership, Strategy, Adaptability, Relationships, Coordination and Climate. The rationale behind this was that the:

- Biographical section does not present with any data that would help provide answers to this study's research questions regarding validity and reliability. Thus statistical analysis of this section was not deemed necessary.
- Business performance section was client specific. More importantly, this section was specific to each of the various departments within the target organisation. This therefore makes it difficult to generalise results and thereby stabilise the items for future use. The decision was taken to leave this section both optional and customisable for future clients.
- Forces section is qualitative in nature. This means that other qualitative techniques (such as grounded theory) be used in order to translate and/or code the data into meaningful "quantitative chunks" for statistical analysis (that is, item and factor analysis).

The primary purpose for collecting the above research data was to obtain answers to research questions (that is, to prove whether the X Model of Organisational Culture's assessment tool is a valid and reliable tool with which to measure organisational culture within the public sector). To

fulfil this obligation, the data was analysed and interpreted using SPSS. This data analysis process invariably meant that the collected data was to be broken down into its constituent parts in order to obtain answers to the research questions.

According to Terre Blanche and Durrheim (2002), in quantitative research, data can be presented as descriptive statistics and inferential statistics. For the purposes of this study, inferential statistics was the method used to draw conclusions about the population itself.

While descriptive analysis allows the researcher to generalise from the sample to the population, inferential analysis allows the researcher to draw conclusions about the population on the basis of data obtained from the samples (Terre Blanche & Durrheim, 2002).

The primary parametric analytic techniques that were used to perform the inferential analysis in this particular study comprised two fundamental techniques and/or phases, namely:

- Item analysis phase
- Factor analysis phase

i. Item Analysis

In order to determine whether the items contained within Smit et al.'s (2006) measurement instrument endorse the constructs they are intended to, item analysis needs to be conducted

According to Anastasi and Urbina (1997), item analysis evaluates whether the items that are assumed to denote leadership significantly represent that construct. To answer this question, one would need to explore the inter-correlation between items (that is, the extent to which the items consistently reflect that which it is supposed to). This phenomenon is referred to as the internal consistency of the questionnaire (Anastasi & Urbina, 1997). The intent behind conducting an item analysis is to evaluate the overall pattern of responses (that is, whether more than one person consistently answered in a particular way).

Cronbach alpha is an important indication of the questionnaire's internal consistency. According to Rust and Golombok (1989), Cronbach alpha provides an estimate of the consistency of peoples' responses to different scale items and it is considered to be the strongest indication of reliability. In addition to Cronbach alpha, the corrected item-total correlations for each item was also examined along with the effect on alpha of dropping that particular item. The objective here was to identify those items that clearly behaved differently to others in the same item set.

The focus of the research is more on the reliability of the tool (that is, step seven of DeVellis' (1991) eight-step process of scale instrument development) given that it is the minimum psychometric prerequisite (Mouton & Marais, 1988).

The second phase of the data processing exercise focussed on exploring the questionnaire's validity. In other words, whether specific items contained within Smit et al.'s (2006) measurement instrument cluster around specific constructs and/or factors (that is, the dimensionality of the scale items of the questionnaire). To determine this, factor analysis was required.

ii. Factor Analysis

This phase brought step eight of DeVellis' (1991) eight-step process of scale instrument development into focus (that is, to optimise scale length using factor analysis).

Factor analysis is seen as a multivariate statistical method whose primary purpose is to define the underlying structures of a set of variables and to reduce a set of variables and/or items into a smaller set of common factors (Hair, Anderson, Tatham, & Black, 1998).

In order to confirm whether one should proceed with factor analysis, it is advisable to conduct the Kaiser-Meyer-Olkin (KMO) and Bartlett's Tests on the data. These tests reveal the strength of the relationship among the variables within the data set. Where the strength of the relationship is strong, proceeding with a factor analysis is usually a good idea.

Factor analysis identifies the presence of factors and/or clusters that are contained within the measurement instrument (Anastasi & Urbina, 1997). This analytic process reveals whether items cluster and/or load around particular constructs and/or factors. The process usually ends with a reduced number of variables and is therefore seen as a data reduction or structure detection method.

According to Sudman and Blair (1998), the some of the key descriptive results obtained from a factor analysis are the eigenvalues and factor loadings.

For the purposes of this study the extraction of principal components were tapped using a component matrix. The aim was to evaluate the pattern of factor loading for specific variables. According to Hair et al. (1998), it is suggested that, as a rule of thumb, one should ignore variables with loadings less than 0.50. In addition, if the total variance explained by the selected factors exceeds 70%, the overall factor analysis can be considered effective (Sudman & Blair, 1998).

It is important to note that the exploratory factor analysis which was conducted in this study was aimed at exploring whether the following factors were in fact present or not, that is:

- Leadership
- Strategy
- Adaptability
- Relationships
- Coordination
- Climate

Even though climate is not part of Smit et al.'s (2006) organisational culture circumplex, the decision to include it as part of the factor analysis was twofold, namely:

- It represents part of the more stable quantitative item set (unlike the business performance indicator section which is expected to change in relation to the client)
- It presents an opportunity to empirically test the assumption that culture is distinct from climate.

3.4 Summary

This chapter explained the research strategy and design chosen. It elaborated on the quantitative approach, the sampling frame and selection of the participants, the measurement instrument used, the data collection and processing methods applied, the statistical techniques employed and the perceived contribution of this research. The next chapter focuses on the research findings.

Chapter 4: The Research Findings and Analysis

4.1 Introduction

This chapter describes the empirical part of this study, which is intent on providing data that could be used to answer the research questions as stated in Chapter 1 (see section 1.5).

The focus of this chapter will be to describe the results of the validation part of the study by reporting on the item and factor analysis. This will be followed by a short discussion of the hypotheses that were tested and a summary of psychometric properties of the organisational culture measurement questionnaire.

The statistical analysis was generated from participant responses to a structured survey questionnaire. The data of the questionnaire was captured in an Excel spreadsheet and then imported into a statistical software programme, called SPSS for analysis.

In essence, this section aims to evaluate the stability of the theoretical assumptions upon which the questionnaire was developed.

4.2 Statistical Analysis and Results

The empirical part of this study with the statistical results are divided into and described in two parts, namely:

- Step 1: Item analysis
- Step 2: Factor analysis

It is important to note that to effectively conduct an item analysis, the research study required at least 200 respondents. Furthermore, to yield reliable statistics for the factor analysis, a minimum of 10 observations per variable was required – that is, 2 510 respondents (Nunnally, 1978). Given that only 416 completed questionnaires were received, the factor analysis should be considered tenuous rather than conclusive.

4.2.1 Item Analysis

The first step in evaluating the measurement questionnaire's reliability was to conduct an item analysis. According to Anastasi and Urbina (1997), item analysis evaluates whether the items (that is, questions) contained in the questionnaire significantly endorse the construct being explored. For instance, do the items that are assumed to denote leadership significantly represent that construct? To answer this question, one would need to explore the inter-correlation between items (i.e. the extent to which the items consistently reflect what it is supposed to). This phenomenon is referred to as the internal consistency of the questionnaire (Anastasi & Urbina, 1997). The intent behind conducting an item analysis is to evaluate the overall pattern of responses (that is, whether more than one person consistently answered in a particular way).

An item analysis was conducted on 251 of the 259 items of the culture survey questionnaire to determine the relationship between the items and six of the survey questionnaire's core theoretical constructs. Here, the aim was to examine whether each of the six core constructs and/or elements (that is, Leadership, Strategy, Adaptability, Relationships, Coordination, and Climate) have an acceptable level of internal consistency.

Each of the six elements was subjected to an item analysis using SPSS. Table 4.1 below shows the number of items within each of the six elements, as well as the number of usable responses per element. When reviewing Table 4.1, it is clear that the total number of respondents for leadership was 389, strategy was 387, adaptability was 408, coordination was 404, relationships was 406, and climate was 407.

	Elements					
	Leadership	Strategy	Adaptability	Coordination	Relationships	Climate
N of Items	54	38	35	43	63	18
N of Respondents	389	387	408	404	406	407

Table 4.1: Number of items and respondents per element

Further empirical indicators that were also considered for the reliability part of this investigation included; the cronbach alpha value, corrected item-total correlations, and cronbach's alpha if the item was deleted.

Cronbach alpha was calculated to get some idea of the survey questionnaires internal consistency. An alpha value that is greater than 0.7 is usually considered to indicate an acceptable level of internal reliability (Nunnally, 1978). Nunnally (1978) also contends that where cronbach alpha is greater than 0.9, items making up that particular element/measure could be considered too uniform.

The corrected item total correlations for each item were explored along with the effect on alpha of dropping that particular item. Here, the objective was to identify those items that clearly behaved differently to others in the same set.

The details for each of the elements/measures in the questionnaire, the description, mean, standard deviation and Cronbach's alpha, will be discussed below. Also, tables showing the specific item analysis per theoretical construct will be presented below.

i. Leadership

Table 4.2 reports a cronbach alpha score of 0.981 for Leadership thus indicating a high level of internal consistency between items. This suggests that items consistently reflect the construct it is supposed to (that is, Leadership). However, with such a high score, it could be argued that the items making up the leadership construct could be too uniform.

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.981	.981	54

Table 4.2: Cronbach alpha for Leadership

Table 4.3, Table 4.5, Table 4.7, Table 4.9, Table 4.11 and Table 4.13 are all structured in the same way where the first column contains the "Codes" for each item followed by the "Scale Mean if the Item is Deleted" and then the "Scale Variance if the Item is Deleted". The next column shows the "Corrected Item-Total Correlation", which is followed by the "Square Multiple Correlation" and finally, the "Cronbach's Alpha if the Item is Deleted".

Table 4.3 shows the detailed item analysis for Leadership. As stated above, the Leadership items are listed in the first column. As illustrated in Table 4.3, each of the Leadership items are coded

where “LED1” refers to “Leadership, Energy Demonstration, item 1”. For a more detailed look at each of the codes regarding each item, the reader is referred to Appendix 1.

Items with a “Corrected Item-Total Correlation” of ≤ 0.32 in Table 4.3, Table 4.5, Table 4.7, Table 4.9, Table 4.11 and Table 4.13 were considered for deletion from the item pool. Items with a “Corrected Item-Total Correlation” of ≤ 0.32 were considered for deletion from the item pool. Items that were negatively scored were immediately eliminated. Thus, in Table 4.3, the only item considered for deletion was:

- LS4 (Leadership Style – item four): *My immediate supervisor encourages a “one-way” or “top-down” style of communication (i.e. telling style)*

It should be noted however that where this items' deletion impacted the sub-element adversely (with respect to removing a core facet and/or angle to that particular sub-element), caution was exercised.

Item-Total Statistics					
Code	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
LED1	184.60	1687.442	.691	.	.981
LED2	184.55	1687.589	.681	.	.981
LED3	184.84	1678.542	.714	.	.981
LED4	184.69	1677.755	.762	.	.981
LED5	184.71	1687.083	.684	.	.981
LED6	184.69	1683.009	.739	.	.981
LET1	185.36	1677.515	.769	.	.981
LET2	185.02	1682.221	.683	.	.981
LET3	185.63	1675.037	.753	.	.981
LET4	186.18	1695.751	.490	.	.981
LET5	185.38	1672.220	.713	.	.981
LET6	185.31	1676.879	.702	.	.981
LET7	185.28	1670.391	.766	.	.981
LET8	185.06	1674.048	.765	.	.981
LET9	185.22	1665.120	.844	.	.981
LV1	185.15	1686.925	.673	.	.981

LV2	185.41	1684.226	.641	.	.981
LV3	185.29	1671.046	.804	.	.981
LV4	185.35	1675.420	.771	.	.981
LV5	185.31	1675.890	.775	.	.981
LV6	185.38	1673.814	.789	.	.981
LV7	185.33	1671.287	.782	.	.981
LV8	185.65	1680.563	.743	.	.981
LI1	184.55	1696.805	.654	.	.981
LI2	184.62	1684.080	.745	.	.981
LI3	184.91	1682.915	.744	.	.981
LI4	184.87	1683.973	.685	.	.981
LI5	184.86	1681.134	.731	.	.981
LI6	184.96	1680.509	.752	.	.981
LI7	185.04	1679.609	.759	.	.981
LC1	184.85	1686.672	.697	.	.981
LC2	184.91	1681.424	.764	.	.981
LC3	185.02	1681.456	.730	.	.981
LC4	184.95	1681.268	.754	.	.981
LC5	184.94	1683.009	.746	.	.981
LC6	185.05	1684.949	.723	.	.981
LC7	184.90	1701.567	.560	.	.981
LC8	185.00	1690.863	.693	.	.981
LA1	185.05	1675.562	.779	.	.981
LA2	185.00	1675.317	.820	.	.981
LA3	184.98	1675.892	.808	.	.981
LA4	184.85	1678.311	.795	.	.981
LA5	184.68	1682.126	.787	.	.981
LA6	185.07	1678.160	.797	.	.981
LS1	185.16	1687.201	.717	.	.981
LS2	185.26	1686.115	.714	.	.981
LS3	185.18	1677.560	.785	.	.981
LS4	185.69	1763.177	-.164	.	.983

LS5	185.07	1680.926	.766	.981
LS6	184.98	1683.881	.732	.981
LS7	185.60	1703.931	.466	.981
LS8	185.29	1704.921	.497	.981
LS9	184.87	1711.152	.462	.981
LS10	185.37	1712.929	.397	.981

Table 4.3: Item analysis per Leadership sub-element

ii. Strategy

Table 4.4 reports a cronbach alpha score of 0.956 for Strategy thus indicating a high level of internal consistency between items contained within this element. This suggests that items consistently reflect the element, which it purports to. However, with such a high score, it could again be argued that the items making up the Strategy construct are either too homogenous or identical.

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.956	.956	38

Table 4.4: Cronbach alpha for Strategy

Table 4.5 shows the specific item analysis for the Strategy construct. It is evident that items were neither negatively scored nor scoring a "Corrected Item-Total Correlation" of ≤ 0.32 . Thus, using the statistical analysis, no items were considered for deletion from this particular element.

Item-Total Statistics					
Code	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
SDC1	122.83	520.936	.439	.955	.955
SDC2	122.69	520.459	.430	.955	.955
SDC3	122.70	521.117	.440	.955	.955
SDC4	122.68	523.253	.417	.955	.955
SDC5	122.34	525.412	.379	.956	.956

SDC6	122.93	508.234	.673	.	.954
SDC7	122.90	509.217	.643	.	.954
SOS1	123.01	512.140	.660	.	.954
SOS2	123.12	510.903	.676	.	.954
SOS3	123.11	507.284	.699	.	.954
SOS4	122.77	512.803	.648	.	.954
SOS5	122.93	513.984	.658	.	.954
SE1	123.58	506.784	.667	.	.954
SE2	123.59	510.072	.632	.	.954
SE3	123.66	504.629	.685	.	.954
SE4	123.53	508.395	.598	.	.954
SE5	123.05	517.197	.433	.	.956
SCM1	123.19	511.401	.603	.	.954
SCM2	123.33	507.765	.583	.	.955
SCM3	123.21	505.304	.711	.	.954
SCM4	123.02	507.748	.659	.	.954
SCM5	123.36	507.445	.524	.	.955
SCM6	123.76	502.884	.631	.	.954
SCM7	123.27	508.077	.578	.	.955
SCM8	123.48	504.395	.602	.	.954
SCM9	123.35	507.098	.625	.	.954
SCM10	123.49	506.618	.646	.	.954
SCM11	123.68	508.346	.667	.	.954
SCM12	123.46	509.405	.648	.	.954
SCM13	123.53	510.887	.640	.	.954
SCM14	123.70	508.537	.677	.	.954
SCM15	123.60	509.157	.669	.	.954
SA1	123.36	506.973	.734	.	.954
SA2	122.39	525.410	.371	.	.956
SA3	123.14	520.602	.349	.	.956
SA4	123.02	512.059	.608	.	.954
SA5	122.89	516.407	.583	.	.955

SA6	122.52	519.483	.526	.955
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Table 4.5: Item analysis per Strategy sub-element

iii. Adaptability

From Table 4.6 it is clear that Adaptability has a very high level of internal consistency given its cronbach alpha score of 0.958. Thus, items consistently reflect the core element of Adaptability as intended. However, with such a high score, it could be argued that the items making up Adaptability need to be varied, as they could be too uniform.

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.958	.958	35

Table 4.6: Cronbach alpha for Adaptability

By looking at the specific item analysis for the Adaptability in Table 4.7, it is clear that items were neither negatively scored nor scoring a "Corrected Item-Total Correlation" of ≤ 0.32 . Thus, strictly applying the above statistical rules and/or conventions, no items were considered for deletion from this element.

Item-Total Statistics					
Code	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
ACF1	116.47	478.888	.335	.	.958
ACF2	116.67	473.835	.440	.	.958
ACF3	116.60	474.024	.411	.	.958
ACF4	117.27	463.992	.591	.	.957
ACF5	117.30	462.230	.623	.	.957
ACF6	117.30	461.798	.600	.	.957
ACF7	117.13	462.363	.583	.	.957
ACF8	117.01	466.513	.563	.	.957
ACF9	117.21	457.378	.660	.	.957
ACC1	117.25	457.044	.711	.	.956

ACC2	117.47	455.125	.737		.956
ACC3	117.40	454.663	.759		.956
ACC4	117.59	456.464	.727		.956
ACC5	117.71	454.443	.732		.956
ACC6	117.61	455.875	.699		.956
ACC7	118.17	455.690	.709		.956
AOL1	117.52	455.036	.708		.956
AOL2	118.24	460.671	.584		.957
AOL3	117.85	459.866	.600		.957
AOL4	117.98	456.864	.648		.957
AOL5	117.77	453.829	.670		.957
AOL6	117.82	459.210	.570		.957
AIC1	117.47	461.100	.579		.957
AIC2	117.42	462.820	.542		.958
AIC3	117.38	461.655	.575		.957
AIC4	118.13	458.879	.612		.957
AIC5	118.10	468.268	.443		.958
AIC6	117.53	458.859	.612		.957
AIC7	117.17	462.686	.617		.957
AF1	117.46	459.517	.647		.957
AF2	117.38	460.272	.654		.957
AF3	117.17	460.365	.675		.957
AF4	117.12	462.343	.670		.957
AF5	117.31	465.738	.557		.957
AF6	117.35	462.483	.633		.957

Table 4.7: Item analysis per Adaptability sub-element

iv. Coordination

As seen in Table 4.8, the cronbach alpha score for Coordination is 0.935, which indicates a high level of internal consistency between the items. However, with such a high score, it could again be argued that the items making up the Coordination element are either too uniform or homogenous.

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.935	.936	43

Table 4.8: Cronbach alpha for Coordination

Table 4.9 depicts the specific item analysis for Coordination. Items that were either negatively scored or scored a "Corrected Item-Total Correlation" of ≤ 0.32 were immediately considered for deletion from the item pool. These items included:

- CPS7 (Coordination Processes and Systems – item seven): *I have good ideas on how we, without lots of money, can make my Business Unit's work more simple, better and/or faster if only somebody will listen to me and take my ideas seriously (item adapted for the purpose of client anonymity)*
- CPP1 (Coordination Positional Power – item one): *Position creates power within my Business Unit and Department (item adapted for the purpose of client anonymity)*
- CPP2 (Coordination Positional Power – item two): *My rank or salary level determines my position, influence and value in my Business Unit and Department (item adapted for the purpose of client anonymity)*
- CPP6 (Coordination Positional Power – item six): *My immediate supervisor uses his/her position to give or withhold information in order that she/he may gain a positive result*

As stated preciously, where the elimination of a particular item adversely impacted the sub-elements structural content (due to the removal of a core facet and/or angle of that particular sub-element), caution was exercised.

Item-Total Statistics					
Code	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
COS1	134.74	541.974	.576	.620	.933
COS2	135.11	539.667	.605	.672	.933
COS3	134.60	550.325	.441	.467	.934
COS4	135.09	541.163	.602	.599	.933
COS5	134.90	538.854	.657	.678	.933

COS6	135.17	544.289	.504	.427	.934
COS7	134.49	550.007	.417	.309	.934
CPS1	134.71	541.855	.576	.756	.933
CPS2	134.71	544.059	.537	.789	.934
CPS3	134.42	554.304	.348	.453	.935
CPS4	134.58	548.557	.473	.729	.934
CPS5	134.55	546.665	.519	.735	.934
CPS6	134.82	540.354	.579	.701	.933
CPS7	134.69	571.965	-.049	.266	.938
CPP1	134.61	579.663	-.198	.471	.939
CPP2	134.84	574.278	-.089	.450	.939
CPP3	135.20	548.278	.406	.335	.935
CPP4	134.53	547.590	.517	.551	.934
CPP5	134.51	547.625	.509	.596	.934
CPP6	135.18	566.309	.066	.232	.937
CPP7	135.75	536.877	.572	.554	.933
CPP8	135.31	542.990	.517	.486	.934
CPM1	134.78	541.896	.563	.515	.933
CPM2	135.11	537.634	.614	.549	.933
CPM3	134.95	540.101	.526	.573	.934
CPM4	135.21	535.414	.605	.641	.933
CPM5	135.56	537.046	.592	.576	.933
CPM6	135.18	547.967	.445	.337	.934
CPM7	134.79	544.347	.488	.663	.934
CPM8	135.04	535.837	.619	.783	.933
CPM9	135.05	539.811	.583	.672	.933
CPM10	134.95	538.032	.627	.722	.933
CPM11	135.15	537.783	.645	.659	.933
CPM12	134.97	541.322	.622	.660	.933
CPM13	135.30	540.087	.532	.489	.934
CPM14	135.61	548.412	.392	.313	.935

CCM1	135.28	537.701	.597	.667	.933
CCM2	134.93	537.806	.617	.647	.933
CCM3	134.94	540.425	.549	.543	.933
CCM4	135.28	539.455	.663	.661	.933
CCM5	135.12	540.432	.638	.576	.933
CCM6	135.51	538.350	.681	.685	.932
CCM7	135.64	547.726	.339	.203	.936

Table 4.9: Item analysis per Coordination sub-element

v. Relationship

Table 4.10 reports a cronbach alpha score of 0.962 for Relationship. This suggests that the items contained within the Relationship construct consistently reflects the sub-element and/or construct that it is supposed to. The consequence of having such a high level of internal consistency however, could suggest that the items informing this particular element could be too uniform.

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.962	.964	63

Table 4.10: Cronbach alpha for Relationship

From Table 4.11 it is clear that several items were to be considered for deletion due to "Corrected Item-Total Correlation" scores of ≤ 0.32 . These items were:

- RD13 (Relationship Diversity – item thirteen): *I find that my work environment is sympathetic towards me because I am a member of a specific group (e.g. race, gender, language, etc)*
- RD17 (Relationship Diversity – item seventeen): *I understand and accept the need to redress the imbalances of the past through Black Economic Empowerment, Employment Equity and Affirmative Action*
- RD18 (Relationship Diversity – item eighteen): *Diversity workshops enabled me to better understand and embrace difference in the workplace*
- RTM8 (Relationship Talent Management – item eight): *I will further my academic studies if my Department grants me a bursary*

- RTM9 (Relationship Talent Management – item nine): *I am correctly placed in my current job*
- RTM10 (Relationship Talent Management – item ten): *My knowledge, skills, competencies and experience are much higher than what my current job requires*

As the items fell within two distinct sub-elements, caution needs to be exercised prior to removing the above items as their elimination may have had an adverse impact on the sub-elements structural content. This is to say that their could see the removal of a core facet and/or angle to either the Diversity and/or Talent Management sub-elements.

Item-Total Statistics					
Code	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
RTO1	219.48	1046.715	.539		.962
RTO2	219.28	1045.342	.571		.962
RTO3	219.62	1044.972	.513		.962
RTO4	219.80	1038.470	.594		.962
RTO5	219.53	1038.107	.619		.961
RTO6	219.59	1035.093	.659		.961
RC1	220.04	1043.831	.559		.962
RC2	219.98	1040.464	.586		.962
RC3	220.10	1043.854	.540		.962
RC4	220.11	1046.462	.540		.962
RC5	220.23	1046.504	.535		.962
RC6	219.43	1054.092	.446		.962
RC7	219.81	1044.602	.557		.962
RD1	219.73	1042.950	.587		.962
RD2	219.56	1042.257	.597		.962
RD3	220.06	1038.040	.559		.962
RD4	219.46	1031.202	.637		.961
RD5	219.34	1033.011	.672		.961
RD6	219.28	1036.184	.665		.961
RD7	219.17	1040.724	.655		.961
RD8	219.18	1041.168	.682		.961

RD9	219.22	1041.123	.658	.	.961
RD10	219.25	1039.638	.632	.	.961
RD11	219.41	1033.507	.658	.	.961
RD12	219.43	1037.060	.596	.	.962
RD13	220.39	1064.198	.203	.	.963
RD14	219.82	1034.838	.541	.	.962
RD15	219.63	1037.438	.565	.	.962
RD16	219.03	1049.197	.562	.	.962
RD17	219.10	1061.918	.275	.	.963
RD18	219.53	1059.726	.312	.	.962
RTM1	220.14	1034.577	.601	.	.962
RTM2	219.15	1053.205	.467	.	.962
RTM3	219.68	1034.984	.593	.	.962
RTM4	219.81	1033.537	.636	.	.961
RTM5	220.34	1039.696	.572	.	.962
RTM6	219.75	1044.638	.556	.	.962
RTM7	219.31	1050.482	.505	.	.962
RTM8	219.30	1075.287	.043	.	.964
RTM9	219.20	1059.049	.290	.	.963
RTM10	219.44	1076.973	.024	.	.964
RVM1	219.02	1051.893	.538	.	.962
RVM2	219.45	1044.490	.565	.	.962
RVM3	219.29	1045.328	.597	.	.962
RVM4	220.07	1039.020	.620	.	.961
RVM5	219.76	1044.235	.537	.	.962
RVM6	219.18	1053.485	.427	.	.962
RVM7	219.24	1051.889	.440	.	.962
RVM8	219.30	1055.377	.388	.	.962
RVPG1	219.09	1057.646	.458	.	.962
RVPG2	219.29	1050.358	.542	.	.962
RVPG3	219.33	1048.670	.582	.	.962

RVPG4	219.14	1052.587	.566	.	.962
RVPG5	219.22	1047.312	.618	.	.962
RVPG6	219.15	1050.926	.603	.	.962
RVPG7	219.24	1047.280	.617	.	.962
RVPG8	219.29	1047.918	.591	.	.962
RVPG9	219.18	1044.949	.649	.	.961
RVPG10	219.27	1049.503	.570	.	.962
RVPG11	219.01	1056.447	.517	.	.962
RVPG12	219.03	1054.799	.533	.	.962
RVPG13	219.10	1048.693	.599	.	.962
RVPG14	219.17	1050.130	.579	.	.962

Table 4.11: Item analysis per Relationship sub-element

vi. Climate

Climate's cronbach alpha score reflected in Table 4.12 of 0.905 reveals a very high level of internal consistency between the Climate items. This high score does however suggest that the items making up this element could be too uniform (that is, the same).

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.905	.907	18

Table 4.12: Cronbach alpha for Climate

When one considers the "Item-Total Statistics" depicted in Table 4.13, it is evident that items were neither negatively scored nor did they reveal a "Corrected Item-Total Correlation" score of ≤ 0.32 . Thus, using this statistical rule and/or convention, no items are to be considered for deletion from this particular element.

Item-Total Statistics					
Code	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
C1	59.93	99.522	.598	.800	.899

C2	59.97	99.130	.612	.805	.899
C3	60.08	100.149	.524	.488	.901
C4	60.09	99.429	.567	.511	.900
C5	60.03	101.856	.395	.537	.905
C6	60.08	101.011	.462	.595	.903
C7	60.11	101.387	.440	.620	.904
C8	59.99	104.463	.310	.533	.907
C9	60.23	100.256	.614	.812	.899
C10	60.25	100.089	.617	.854	.899
C11	60.26	99.879	.640	.764	.898
C12	60.29	98.583	.635	.585	.898
C13	60.18	97.208	.672	.564	.897
C14	60.54	97.269	.648	.633	.897
C15	60.64	97.162	.626	.522	.898
C16	60.15	97.639	.662	.509	.897
C17	60.49	97.226	.623	.508	.898
C18	60.93	97.308	.506	.333	.903

Table 4.13: Item analysis per Climate sub-element

vii. Item Analysis Summary

To summarise the above item analysis results, Table 4.14 highlights such descriptive statistics as "the number of items", "cronbach alpha", "the mean", "variance" and "standard deviation" per element.

	Elements					
	Leadership	Strategy	Adaptability	Coordination	Relationship	Climate
N of Items	54	38	35	43	63	18
Mean Score	188.58	126.49	120.89	138.21	223.02	63.78
Variance	1748.125	539.204	488.092	570.633	1079.851	110.843
Std. Deviation	41.811	23.221	22.093	23.888	32.861	10.528
Cronbach Alpha	0.981	0.956	0.958	0.935	0.962	0.905

Table 4.14: Descriptive Statistics per Culture Element

According to Nunnally (1978) a minimum level of 0.70 for a cronbach alpha coefficient is recommended. As shown in Tables 4.14, the cronbach alpha values for each of the six core elements and/or constructs, range from 0.905 to 0.981 indicating a high level of internal consistency between items. Thus, the overall reliability of the items per element is highly acceptable.

Table 4.15 provides a summary of the item analysis results of those eleven items that were either negatively scored or scored a "Corrected Item-Total Correlation" of ≤ 0.32 . "Corrected Item-Total Correlations" exceeded ≤ 0.32 for over four-fifths of the 251 items in the survey, which suggest that items significantly represent the content domain (that is, element and/or theoretical construct that it is intended to). Due to the high alpha co-efficient it can be argued that there is a strong degree of overlap between the various items (that is, there is very little variance between items). Put another way, items appear to be measuring only one facet of the element and/or construct. Nevertheless the analysis clearly shows a high level of reliability and it is clear from the findings that specific survey items can be removed.

Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
LS4	185.69	1763.177	-.164	.	.983
CPS7	134.69	571.965	-.049	.266	.938
CPP1	134.61	579.663	-.198	.471	.939
CPP2	134.84	574.278	-.089	.450	.939
CPP6	135.18	566.309	.066	.232	.937
RD13	220.39	1064.198	.203	.	.963
RD17	219.10	1061.918	.275	.	.963
RD18	219.53	1059.726	.312	.	.962
RTM8	219.30	1075.287	.043	.	.964
RTM9	219.20	1059.049	.290	.	.963
RTM10	219.44	1076.973	.024	.	.964

Table 4.15: Item Analysis Statistics Summary

In short, the items with a corrected item total correlation of ≤ 0.32 (using Pearson's correlation technique), which were eliminated from the original survey questionnaire, included:

- One of the initial 54 items from the Leadership construct: LS4
- None of initial 38 items from the Strategy construct
- None of initial 35 items from the Adaptability construct

- Four of initial 43 items from the Coordination construct: CPS7, CPP1, CPP2, and CPP6
- Six of initial 63 items from the Relationship construct: RD13, RD17, RD18, RTM8, RTM9, and RTM10
- None of initial 18 items from the Climate construct

Given the high inter-item correlation values, Smit et al.'s (2006) Organisational Culture Survey Tool can be considered to be reliable. From the statistical data it is clear that the measurement questionnaire has a high degree of internal consistency. This is to say, that the sample group responded to specific items in a particular way.

Despite the findings that were yielded from the item analysis, which suggested the removal of eleven specific items from the item pool, all the items from the original item set were subjected to factor analysis.

4.2.2 Factor Analysis

Exploratory Factor Analysis (EFA) was used to explore the factor structure of Smit et al.'s (2006) Organisational Culture Survey Tool as well as examine its internal reliability.

Even though EFA is generally used when there is no clear hypothesis regarding the nature of the underlying factor structure of a specific measure/instrument, it was deemed necessary to isolate the number of principal factors contained within Smit et al.'s (2006) Organisational Culture Survey Tool. Moreover, given that Smit et al.'s (2006) Organisational Culture Survey Tool was a newly developed organisational culture instrument (which had not yet been subjected to statistical analysis), the decision to conduct an EFA was deemed more appropriate.

To confirm whether it was a good idea to proceed with the EFA for the data, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's Test of sphericity was conducted.

i. KMO and Bartlett's Tests

The KMO measure of sampling adequacy is an indicator of the strength of the relationship among variables. Table 4.16 shows the KMO measure to be greater than 0.90. This large value for the KMO measure suggested that a factor analysis for the data was a good idea.

Another indicator of the strength of the relationship among variables is Bartlett's test of sphericity. Bartlett's test of sphericity is used to test the null hypothesis that the variables in the population correlation matrix are uncorrelated. Given that the observed significance level is 0.000 (as illustrated in Table 4.16), it is small enough to reject the hypothesis. Therefore, it can be concluded that the strength of the relationship among variables is strong and that proceeding with a factor analysis for the data is actually a good idea.

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.915
Bartlett's Test of Sphericity	Approx. Chi-Square	98581.994
	df	31375
	Sig.	.000

Table 4.16: KMO and Bartlett's Test

In light of the above results, the strength of the relationship among the variables could be considered to be strong. Thus, it was deemed appropriate that factor analysis be conducted.

Factor analysis was thus conducted on 251 of the culture survey items in order to explore the pattern of relationships between the observed variables and latent traits that make up the hierarchical structure of the model.

A Principal Component Analysis (PCA) was used to determine the Kaiser eigenvalues, which represents the variance accounted for by each underlying factor. Eigenvalues are not represented by percentages but scores that total to the number of items. For the purposes of this study, Kaiser eigenvalues ≥ 1.0 were used to isolate the number of factors contained within Smit et al.'s (2006) Organisational Culture Survey Tool. The principal components and/or factors were chosen based on the Principal Component Analysis as well as their percentage variance contribution.

Table 4.17 shows the "Eigenvalues and % Variance for 251 items of the item pool". The "Components" are listed in the first column, followed by the "Initial Eigenvalues", and then the "Extraction Sums of Squared Loadings". In short, Table 4.17 shows the Principal Component Analysis that was conducted on the 251 of the 259 items of the culture survey questionnaire which revealed 47 factors with an eigenvalue of ≥ 1.0 . The percentage variance represented in Table 4.17 indicates the possibility of one dominant factor (that is, Component 1) given that all the

other 250 factors have much smaller percentages than the 27.889% as yield by Component 1 (as per the "% of Variance" score).

Total Variance Explained						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	70.002	27.889	27.889	70.002	27.889	27.889
2	19.087	7.604	35.494	19.087	7.604	35.494
3	10.674	4.253	39.746	10.674	4.253	39.746
4	7.852	3.128	42.875	7.852	3.128	42.875
5	5.836	2.325	45.200	5.836	2.325	45.200
6	5.163	2.057	47.257	5.163	2.057	47.257
7	3.849	1.533	48.790	3.849	1.533	48.790
8	3.566	1.421	50.211	3.566	1.421	50.211
9	3.337	1.330	51.540	3.337	1.330	51.540
10	3.004	1.197	52.737	3.004	1.197	52.737
11	2.870	1.143	53.880	2.870	1.143	53.880
12	2.707	1.079	54.959	2.707	1.079	54.959
13	2.581	1.028	55.987	2.581	1.028	55.987
14	2.367	.943	56.931	2.367	.943	56.931
15	2.258	.900	57.830	2.258	.900	57.830
16	2.139	.852	58.682	2.139	.852	58.682
17	2.093	.834	59.516	2.093	.834	59.516
18	2.010	.801	60.317	2.010	.801	60.317
19	1.890	.753	61.070	1.890	.753	61.070
20	1.881	.749	61.819	1.881	.749	61.819
21	1.845	.735	62.554	1.845	.735	62.554
22	1.761	.702	63.256	1.761	.702	63.256

23	1.738	.693	63.949	1.738	.693	63.949
24	1.697	.676	64.624	1.697	.676	64.624
25	1.612	.642	65.267	1.612	.642	65.267
26	1.556	.620	65.887	1.556	.620	65.887
27	1.524	.607	66.494	1.524	.607	66.494
28	1.510	.602	67.096	1.510	.602	67.096
29	1.490	.593	67.689	1.490	.593	67.689
30	1.414	.563	68.252	1.414	.563	68.252
31	1.399	.557	68.810	1.399	.557	68.810
32	1.345	.536	69.346	1.345	.536	69.346
33	1.331	.530	69.876	1.331	.530	69.876
34	1.305	.520	70.396	1.305	.520	70.396
35	1.282	.511	70.907	1.282	.511	70.907
36	1.233	.491	71.398	1.233	.491	71.398
37	1.225	.488	71.886	1.225	.488	71.886
38	1.201	.479	72.365	1.201	.479	72.365
39	1.180	.470	72.835	1.180	.470	72.835
40	1.162	.463	73.298	1.162	.463	73.298
41	1.138	.453	73.751	1.138	.453	73.751
42	1.124	.448	74.199	1.124	.448	74.199
43	1.085	.432	74.631	1.085	.432	74.631
44	1.066	.425	75.056	1.066	.425	75.056
45	1.054	.420	75.476	1.054	.420	75.476
46	1.033	.412	75.887	1.033	.412	75.887
47	1.010	.402	76.290	1.010	.402	76.290
Extraction Method: Principal Component Analysis.						

Table 4.17: Eigenvalues and % Variance for 251 items of the item pool

After conducting the PCA on the 251 items contained in the measurement questionnaire, 47 components emerged for factor analysis (that is, only these 47 components were subjected to further factor analysis). These results were then used to analyse the factor loadings of Smit et al.'s (2006) Organisational Culture Survey Tool. Variables with factor loadings ≤ 0.4 were excluded from the component matrix to improve reliability (without compromising Smit et al.'s (2006) proposed theoretical framework). The PCA results presented in Table 4.18 and 4.19 indicates the factor loadings of the component matrix. These results suggest the emergence of eight specific clusters (as presented in component 1-9).

Component Matrix(a)										
Items	Components									
	1	2	3	4	5	6	7	8	9	47
AIC1	.699									
AOL6	.698									
AIC2	.695									
LV5	.681									
AOL1	.674									
LV4	.673									
ACC7	.671									
ACC5	.670									
RVM4	.668									
LA6	.667	-.455								
SDC6	.662									
CPM8	.656									
ACC3	.655									
CCM6	.651									
ACC4	.647									
CPM9	.647									
LET9	.645	-.559								
AOL5	.643									
AIC6	.642									

LV6	.641	-.437							
SDC7	.640								
LV3	.639	-.494							
LC2	.638	-.450							
LET7	.637	-.428							
CPM2	.637								
AOL4	.636								
AIC4	.634								
RTM1	.633								
LV8	.631								
SA1	.629								
ACC6	.629								
RTM4	.628								
CCM2	.625								
SCM4	.625								
AF3	.624								
SCM8	.624								
LET8	.623	-.453							
AIC3	.622								
SCM7	.621								
CPM10	.621								
ACC2	.621								
RTM5	.621								
LET3	.620	-.427							
CCM4	.619								
SOS1	.617								
SCM10	.617								
LV7	.615	-.467							
CCM3	.614								
LC4	.614	-.445							

SE5	.612										
LS5	.609	-.482									
RTM3	.609										
LA2	.608	-.575									
LET6	.605										
CPP5	.604										
RTO6	.599										
LET1	.599	-.481									
LC3	.596	-.425									
SOS3	.596										
LA3	.595	-.570									
LI3	.595	-.475									
LA4	.594	-.547									
CPM1	.593										
C3	.593										
SCM11	.593										
C13	.591										
C12	.591										
CCM5	.588										
LS3	.588	-.513									
SE3	.587										
C16	.586										
C4	.586										
LA1	.585	-.530									
AF2	.584										
CPP4	.584										
SCM3	.583										
LS1	.583	-.417									
LED6	.582	-.462									
SCM9	.582										

LC5	.581	-.475								
RTO1	.580									
CPS6	.580									
SOS4	.579									
LI2	.579	-.496								
CPM4	.578									
RD11	.578									
LI6	.577	-.515								
LI7	.576	-.531								
COS5	.576									
LET5	.575	-.425								
RD6	.575					-.411				
LC6	.574	-.459								
RD5	.572					-.405				
AOL2	.572									
AF1	.572									
C15	.569									
LI5	.568	-.480								
CPM7	.566									
LED3	.566	-.437								
CPM11	.566									
LC8	.566	-.428								
COS1	.564									
CCM1	.564									
RD8	.563					-.404				
C17	.563									
CPM12	.562									
LS2	.561	-.415								
CPS1	.561									
RC2	.560									

RVM3	.559									
RTO5	.559									
CPS5	.559									
RTM6	.558									
RD2	.556									
RD14	.555									
RD15	.554									
RD1	.553									
AF4	.553									
SCM6	.552									
SOS2	.552									
ACC1	.552									
RVM2	.552									
LED5	.552	-.413								
LV2	.550									
RD4	.547					-.411				
RTO4	.547									
CPM3	.546									
RD9	.545									
C14	.543									
ACF9	.543									
RD7	.543							-.407		
RC5	.540									
RTO3	.538									
CPS2	.536									
AOL3	.535									
C11	.535									
RVPG9	.534		.464							
SE1	.533		-.436							
LI4	.531	-.462								

CPS4	.530									
LET2	.528	-.434								
RC4	.528									
LV1	.527	-.427								
AF6	.525									
C10	.523									
RVM5	.521									
RC1	.520									
RD10	.518					-.402				
CPM5	.517									
SE2	.516	-.439								
SA6	.515									
RC7	.513									
RD16	.512									
RC3	.510									
RTO2	.509									
AIC7	.509									
LC1	.508	-.462								
COS4	.508									
LI1	.503	-.451								
RTM7	.501									
C9	.501									
RD3	.500									
ACF5	.498									
ACF6	.498									
CPM6	.495									
RVPG13	.495		.469							
CPP8	.494									
C2	.493									
COS2	.491									

CPP7	.489									
RD12	.488									
ACF8	.487									
AF5	.486									
C1	.483									
ACF7	.481									
C18	.478									
RVPG3	.477									
SOS5	.472									
SE4	.471									
ACF4	.470									
RVPG7	.469									
RVM1	.464									
SCM14	.462									
SA5	.462									
SA4	.455									
AIC5	.454									
LET4	.450									
SCM15	.448									
LC7	.447									
LS8	.442									
SCM12	.438									
SA2	.436									
CPM13	.435									
RVPG10	.435									
SCM1	.429									
COS6	.428									
CPS3	.416									
COS7	.416									
SCM5	.414									

SDC5	.413									
RTM2	.411									
COS3	.407									
ACF2	.401									
ACF3	.401									
LA5	.558	-.574								
LED4	.534	-.560								
LS6	.537	-.538								
LED2	.477	-.527								
LED1	.478	-.510								
RVPG11			.511							
RVPG12	.419		.508							
RVPG5	.456		.471	.436						
RVPG14	.449		.458							
SCM13			-.432							
RVPG4	.412		.429	.479						
RVPG1				.467						
RVPG8	.447			.461						
SCM2				.458						
RVPG2	.418			.455						
RVPG6	.434			.451						
C6							.585			
C7							.582			
C8							.567			
C5							.530			
RVM6									.419	

Table 4.18: Component Matrix of the 251 items in the item pool

According to the results in Table 4.18, respondents did seem to see things in a particular way (that is, people did respond in such a way that suggested that specific items clustered and/or

loaded around particular elements and/or sub-elements). Thus, the above statistical results provide sufficient empirical support that there are indeed several distinct clusters that people see as separate from each other. A summary of these clusters is illustrated in Table 4.19.

It should be noted that even though the results in Table 4.18 depict factor loadings < 0.5 , these items were not eliminated as it would have impacted the theoretical construct adversely.

Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8
251 items	42 items	12 items	10 items	1 item	7 items	4 items	1 item
General Factor <i>(Assumed to be Culture)</i>	Leadership Factor	Relationship Factor (9 Values items) & Strategy Factor (2 Engagement items & 1 Communicating Meaning item)	Relationship Factor (9 Values items) & Strategy Factor (1 Communicating Meaning item)	Adaptability (1 Client focus item)	Relationship Factor (7 Diversity items)	Climate Factor	Relationship Factor (1 Value items)

Table 4.19: Component Matrix Summary Table

Table 4.19 shows the emergence of eight distinct clusters. These include a general factor (assumed to be culture), Leadership, Relationships, Strategy, Adaptability and Climate. Even though the factor analysis did not disprove the X Model of Organisational Culture's (Smit et al., 2006) underlying structure, it did not confirm the presence of all of the factors (particularly Coordination, which was absent) very clearly (nor all the items that were assumed to denote those elements and/or sub-elements). Although not entirely conclusive, the emergence of the above eight factors does suggest that there is interim support for the questionnaire's underlying theoretical structure. This is to say, that respondents are clearly seeing things in a particular pattern although not in a way that provides a fit for the hypothesized factor structure as proposed by Smit et al. (2006). Put another way, the observed data did not behave in a way that best supports the hypothesized factor structure of the X Model of Organisational Culture (Smit et al., 2006).

Using the small sample of 416 respondents rather than the 2 510 suggested by Nunnally (1978) whom asserts that for factor analysis to be considered conclusive, a minimum of 10 observations

per variable be sought. In light of the small sample group, there is merely interim support for the EFA results. According to the results tabulated in Table 4.19, it is clear that none of the items can be eliminated from the survey questionnaire without compromising the proposed structure of the X Model of Organisational Culture (Smit et al., 2006). Moreover, to further explore the inter-relationships between the various elements (and sub-elements) a more stable questionnaire (with fewer items) needs to be developed. Thus an alternate approach to the statistical analysis needs to be sought.

Additional data that further serves to legitimise the above results can be sourced from the biographical analysis section (as outlined below). The biographical results show a good spread regarding the sample population with respect to departments that were sampled (relative to the bigger population), gender, and salary level.

4.3 Biographical Analysis and Results

The questionnaire was distributed to 416 respondents. With a total population of 58968 individuals, a minimum number of 382 questionnaires needed to be obtained in order for the sample to be considered representative according to the statistical guidelines as suggested by Nowack (1990). Eventhough the statistical analysis reported could be considered relevant and representative of the entire population, the minimum number of 382 is not sufficient for factor analysis. Thus the statistical analysis relating to validity and reliability could merely be considered tenuous rather than conclusive (given the small sample size). Here, Nunnally (1978) asserts that for factor analysis to be considered conclusive, a minimum of 10 observations per variable be required thus making a sample of 2 510 necessary.

The participants were requested to provide demographic information (e.g. gender, salary level, their department), which would be used in the actual organisational culture diagnostic study of the trends within that particular institution.

The responses per department are tabulated in Table 4.20. As shown in Table 4.20, the first column indicates the different departments, followed by the total number of staff in that department, followed by the number individuals sampled from that department, and the last column the indicates the percentage responses per department.

Department	Population	Sample	% Sampled from Population
Department 1	495	60	12.12%
Department 2	672	10	1.49%
Department 3	465	4	0.86%
Department 4	91	16	17.58%
Department 5	216	36	16.67%
Department 6	21826	104	0.48%
Department 7	782	11	1.41%
Department 8	1339	5	0.37%
Department 9	1457	19	1.30%
Department 10	178	20	11.24%
Department 11	31100	98	0.32%
Department 12	347	33	9.51%
Total	58968	416	0.71%

Table 4.20: Responses per Departments

Table 4.21 tabulates the list of responses per gender group. Here, the first column indicates the different gender group, followed by the total number of individuals for that particular gender group, the number of individuals sampled from that gender group, the percentage sampled, and the last column indicates the percentage of the sample relative to the total population. Although 52% of respondents were male compared to the 48% female, these only represented 1.03% of the total male population and 0.53% of the female population respectively.

Gender	Population	Sample	%	% Sampled from Population
Male	21042	216	51.92%	1.03%
Female	37926	200	48.08%	0.53%
Total	58968	416		0.71%

Table 4.21: Responses per Gender Group

Table 4.22 shows the responses for three different salary levels. In Table 4.22, the first column indicates the various salary levels, followed by the total number of individuals in that salary level, the number of individuals sampled from that salary level, the percentage sampled, and the last column highlights the percentage of the sample relative to the total population. According to Table

4.22, the majority of the respondents fell within Salary Level (SL) 1 to 8, yet compared to the population, the sample only tapped 0.43% of the total population. Conversely, SL 13 to 16 ranked the lowest salary group sampled, yet relative to the total population, it scored 15.03%. This could be advantageous since they could provide more accurate responses and/or insight to those survey questions relating to strategy, adaptability, business processes and systems, and leadership.

Salary Level	Population	Sample	%	% Sampled from Population
SL 1 to 8	51484	220	52.88%	0.43%
SL 9 to 12	7198	153	36.78%	2.13%
SL 13 to 16	286	43	10.34%	15.03%
Total	58968	416		0.71%

Table 4.22: Responses per Salary Level

Finally it is worthy to note that even though the minimum number of 382 questionnaires were obtained from the sample population, making this a representative sample (that is, where inferences could be made about the entire population), the purpose was not to report on descriptive statistics (that is, people's perceptions on organisational culture) but rather to explain whether there was sufficient empirical evidence to suggest that Smit et al.'s (2006) Organisational Culture Assessment Tool is both a valid and reliable tool with which to measure organisational culture. To adequately answer these questions, it is prudent that an overview of the hypothesis be provided, with a brief discussion on whether there was any evidence to support or negate them.

4.4 Hypothesis Testing

Table 4.23 summarizes the research hypotheses that were investigated in this study. It should be noted that even though a formal correlation analysis was not conducted, Table 4.23 indicates whether the research hypotheses were supported or rejected.

HYPOTHESES 1	
Ho: The organisational culture assessment tool is not scientifically reliable.	---Rejected---
H1: The organisational culture assessment tool is scientifically reliable	Supported

HYPOTHESIS 2	
Ho: The organisational culture assessment tool is not scientifically valid.	---Provisional Rejection--- (Small sample makes results tenuous)
H ₁ : The organisational culture assessment tool is scientifically valid	---Interim Support--- (Positive signs of validity despite small sample)

Table 4.23: Hypotheses Testing

The item analysis reported in Table 4.14 report cronbach alpha values ranging from 0.905 to 0.981 indicating a high level of internal consistency between items. In other words, the items that are assumed to denote Leadership, Strategy, Adaptability, Relationships, Coordination, and Climate significantly endorse the constructs that they are intended to. The analysis clearly shows a high level of reliability. Thus there is sufficient support for H₁ of Hypothesis 1.

The factor analysis reported in Table 4.19 shows the emergence of eight distinct clusters, which includes a general factor (perhaps Culture), Leadership, Relationships, Strategy, Adaptability and Climate. The emergence of these factors seems to suggest that there is interim support for the questionnaire's underlying theoretical structure. Put another way, there is evidence that 'what' is being measured falls into one of eight distinct clusters (that is, respondents are clearly seeing things in a particular pattern which results in the above clustering). However, 'how' well these factors are being measured remains questionable, especially given that only 416 individuals were sampled as opposed to the agreed statistical convention of 10 observations per variable (that is, a sample of 2 510). Although there is interim support for H₁ of Hypothesis 2, the findings remain inconclusive when it comes to actually validating the underlying theoretical structure.

Even though support for the underlying structure of the X Model of Organisational Culture (Smit et al., 2006), including its specific elements and sub-elements, was not clearly identified by the statistical findings, the literary evidence offered by Smit et al. (2006) proves sufficient to support the framework's structure at this time (until the questionnaire can be refined further and any ambiguous or redundant items removed, as well as distributed to a larger sample group). Applying this refined and potentially more stable instrument, with fewer items, on a larger sample group would allow for a more detailed look at whether the underlying structure of the X Model of Organisational Culture (Smit et al., 2006) is scientifically supported.

4.5 Summary

This chapter provided an overview of the X Model of Organisational Culture's measurement questionnaire's (Smit et al., 2006) validation process.

From the statistical data (particularly the high inter item correlation values) it is clear that the measurement questionnaire has a high degree of internal consistency and can therefore be considered to be reliable instrument for measuring organisational culture (see Table 4.14).

According to the factor loadings that were yield by the validity statistics, it is clear that respondents did seem to see things in a particular way thus providing sufficient empirical support that there are several clusters that people see as separate from each other (see Table 4.19). However, the findings remain inconclusive when comes to actually validating the underlying theoretical structure of the X Model of Organisational Culture (Smit et al., 2006). Given that there was limited support for the underlying factor structure, it is proposed that the validation study be repeated on a larger group, using a less lengthy measurement tool.

Given that the validation study's primary aim was to provide scientific inquiry into the psychometric properties of the X Model of Organisational Culture's Measurement Tool (Smit et al., 2006), it is clear from the findings that there is sufficient empirical evidence to suggest that the measurement instrument is indeed reliable and that it does display positive signs of validity.

The item and factor analysis results reported in Table 4.15 and 4.19 respectively clearly highlighted the deletion of specific items from the survey questionnaire however, it should be noted that merely eliminating these statistically suggested items could adversely impact the theoretical structure and sub-elements of the X Model of Organisational Culture (Smit et al., 2006). Thus caution needs to be exercised when applying these statistical recommendations.

The next chapter consists of the concluding remarks, limitations of this research and further recommendations for future research.

Chapter 5: Conclusion

5.1 Introduction

The primary objective of this study was to present scientific inquiry into the psychometric properties of Smit et al.'s (2006) recently developed Organisational Culture Assessment Tool. By exploring these psychometric properties, this study was intent on:

- Determining whether the organisational culture assessment tool presented as an appropriate means with which to describe and diagnose organisational culture, and
- Make recommendations regarding the refinement and/or stabilisation of Smit et al.'s (2006) Organisational Culture Assessment Tool.

To facilitate answers to the above, this chapter will provide an overview of the study and concluding remarks based on the results of the study.

5.2 Overview of the Study

5.2.1 Literature review

It is evident from the review of the literature that organisational culture theories and models have been well documented and researched. However, there does appear to be a gap in the literature in respect of valid and reliable culture assessment tools. The literature review also reveals that organisational culture theory could be viewed from different perspectives, thus making culture differences commonplace. Even though many of the studies tended to focus on only one of these perspectives (that is, either integration, differentiation, or fragmentation), to fully understand the topic of organisational culture, one would need to draw on the elements of each of these perspectives.

The literature review detailed an investigation into the development of the X Model of Organisational Culture (Smit et al., 2006) that was used as the basis for the culture assessment tool upon which this validation study is based.

5.2.2 Research design and methodology

The research process underlying this study focused on:

- Administering Smit et al.'s (2006) Survey Tool to a development sample (by way of convenience sampling)
- Evaluating the items in the item pool using item analysis
- Optimising the scale length using factor analysis

To facilitate this respondents were required to complete an excel-based survey questionnaire, which was captured electronically and then imported into SPSS for analysis.

The two statistical techniques that were used to explore the reliability and validity of Smit et al.'s (2006) Organisational Culture Assessment Tool included item analysis and exploratory factor analysis. These analyses were used to explore the relationship between the 251 survey items, its internal reliability as well as the underlying factor structure.

5.2.3 Research findings

As indicated by the item analysis results (shown in Table 4.14 of Chapter 4), the cronbach alpha values for each of the six core elements that were explored (that is, Leadership, Strategy, Adaptability, Coordination, Relationship and Climate), ranged from 0.905 to 0.981 indicating a high level of internal consistency between items. Thus items that were assumed to denote Leadership, Strategy, Adaptability, Coordination, Relationship and Climate were found to significantly represent those respective constructs and/or elements. There is therefore empirical support to suggest that the survey items significantly represent the content domain being investigated. However, due to the high alpha co-efficient it could be argued that there is a strong degree of overlap between the various items (that is, that items are too uniform). Nevertheless the item analysis clearly shows a high level of reliability thus answering one of the research questions (that is, that the organisational culture assessment tool is scientifically reliable).

As denoted by the exploratory factor analysis results (presented in Table 4.18 and 4.19 of Chapter 4), only 47 of the 251 items surveyed emerged as components for further factor analysis.

These results show the emergence of eight distinct clusters. These include a general factor (assumed to denote Culture), Leadership, Relationships, Strategy, Adaptability and Climate. Even though the factor analysis did not disprove the X Model of Organisational Culture's (Smit et al., 2006) underlying structure, it did not confirm the presence of all of the factors (particularly Coordination, which was absent) very clearly (nor all the items that were assumed to denote both the element and its sub-elements). The emergence of these factors suggests that respondents are clearly seeing things in a particular pattern although not in a way that provides a fit for the hypothesized factor structure proposed by Smit et al. (2006). Here, the small sample size also suggests that these emerging factors need to be seen as provisional rather than conclusive. Thus, even though the factor analysis results show support for the second research question (that is, that the organisational culture assessment tool is scientifically valid), the results are tenuous.

The above analyses also highlighted certain survey items that could potentially be deleted from the item pool as they added the least amount of value to the survey tool. However, by deleting these potentially "weak" items, the original questionnaire would significantly be compromised given that different item sets emerged (see Table 4.19 of Chapter 4). It should be noted that re-arranging the statistically suggested items (as per the factor analysis results) could adversely impact the theoretical structure and sub-elements of the X Model of Organisational Culture (Smit et al., 2006). Thus caution needs to be exercised when applying these statistical recommendations reported in Table 4.19 of Chapter 4. A similar cautionary note can be seen in Denison et al.'s (2005) statistical validation wherein one of the five items that were designed to tap "capability development" scored an item total correlation of 0.23 (highlighting a potentially weak item). However, the item was not omitted from the questionnaire as the researchers felt it necessary to keep it in the final questionnaire. Moreover, when one considers that Denison et al.'s (2005) Goodness of Fit Index yielded a score of 0.85 and 0.88 (as per their first and second order analysis respectively), one could argue that it fell short of the 0.9 benchmark which would have been indicative of a good fit between the data and the hypothesized structure. Despite this, Denison and his team kept the questionnaire as is.

Given that this study's primary aim was to provide scientific inquiry into the psychometric properties of Smit et al.'s (2006) X Model of Organisational Culture's Measurement Tool, it is clear that there is sufficient empirical evidence to suggest that the measurement instrument is indeed reliable and that it does display positive signs of validity.

5.3 Contributions of the Research

Even though this study did not focus on actually developing an organisational culture assessment tool, the empirical information does position Smit et al.'s (2006) X Model of Organisational Culture Measurement Tool as a holistic assessment tool, which can be used as both a diagnostic, and a developmental tool. The availability of this assessment tool could enable organisations to assess and/or diagnose their current organisational culture and identify gaps for improvement. Moreover, organisations that are intent on assessing their present organisational capability with respect to such areas as Leadership, Strategy, Adaptability, Coordination, Relationship and Climate could use Smit et al.'s (2006) Organisational Culture Tool to identify areas for development. Organisations could invariably address these areas if they were intent on becoming more successful.

With empirical information at its disposal, the target organisation is in a position to confirm whether its assessment tool actually measures the construct it purports to measure. Using the results from the statistical analyses, the target organisation could also refine and further stabilize the assessment tool. With a more refined tool, practitioners within the target organisation could conduct organisational culture assessments with increased levels of accuracy and a greater degree of certainty (regarding their cultural assumptions). This would in turn allow for more effective diagnosis and the proposition of more appropriate development interventions.

Given that this particular organisational culture assessment tool was developed for a specific industry, it could be used in similar public sector organisations. Here, gaps can be identified and actions facilitated to improve the organisation's culture.

In general there are several entities that are able to derive benefit from this research study, namely:

- The target organisation that is now in possession of a customized, and scientifically validated tool with which to describe and assess their organisational culture and, where necessary, make recommendations for future actions.
- The organisational development practitioners and human resource personnel within the target organisation as they would be in possession of an organisational culture assessment tool that they could re-use, thus allowing them to manage and monitor organisational culture changes.
- The South African public service sector given that they too would be in possession of an organisational culture model for which norms could be generated, thereby allowing for the

comparison between various public sector organisations and ultimately the highlighting of trends across these various organisations.

In short, this research makes an important contribution towards understanding the many nuances of organisational culture that are prevalent within organisations today. It could therefore be argued that the body of knowledge surrounding organisational culture has ultimately been expanded due to the findings in this research and thus it could essentially serve as a valuable contribution to the theory and research base of industrial psychology and organisational behaviour at large.

5.4 Limitations of the Research

Although this study did provide insight into the validity and reliability of Smit et al.'s (2006) Organisational Culture Assessment Tool within the South African public service context, it is important that following limitations associated with this study be recognised:

- The aim of this research was to determine whether Smit et al.'s (2006) Organisational Culture Assessment Tool is a scientifically valid and reliable means with which to measure culture. The theoretical structure posited by the X Model was therefore not tested. More specifically, the structural assumptions and relationships between the underlying elements of the X Model were not tested. As a result, no causal links could be inferred by the assessment tools' diagnosis. In other words, no "if X then Y" inferences could be made regarding specific cultural elements.
- Due to the small sample size of 416 respondents, further causal research that would have helped elucidate the links between the model's underlying cultural elements and sub-elements (using co-variance structure analysis) could not be explored.
- The limited sample sizes per department were not representative therefore caution is necessary in making generalisations to about that department's organisational culture without additional empirical tests.
- The use of such a lengthy questionnaire could also be considered another inherent limitation. Here, respondents may have tended to answer more uniformly than was desired thus skewing the validation results. In short, the respondents' measure of central

tendency and uniformity with which they responded to the items contained in the questionnaire could have had an adverse impact on the tool's internal reliability and validity statistics.

- Given that this study made use of a South African public sector sample group, Smit et al.'s (2006) survey tool cannot be considered a reliable tool in countries (and/or industry sectors) other than the one reflected in the sample population. Thus findings of this research cannot be generalised to other industries or to the wider South African population.
- By using the structural equation modelling software LISREL 8.72 (as opposed to SPSS) one would have been able to examine how well the observed data fits the hypothesized structure by way of several statistics (namely, the chi-squared statistic, the root mean square error of approximation, the goodness of fit index and the comparative fit index). In short, Smit et al.'s (2006) X Model of Organisational Culture's Measurement Tool could benefit by conducting further validation studies using the above confirmatory analysis techniques.

The recommended strategies for future research as well as for future study presented below, will attempt to elaborate on some of the above limitations, and more specifically, ways to overcome them.

5.5 Recommendations

Although the research does provide empirical support for Smit et al.'s (2006) Organisational Culture Assessment Tool, which could help organisations' better understand, assess and manage their organisational cultures', it should be noted that this research serves merely as a building block for both future research and study into organisational culture. The discussion of recommendations will be divided into two subsections, namely:

- Recommendations for immediate improvement of the tool
- Recommendations for further research

5.5.1 Recommendations for immediate improvement of the tool

- Upon face value, it is recommended that the measurement questionnaire be laid out in a user-friendlier manner. This potential improvement speaks directly to the instrument design and format. Developing an automated information technology solution could help facilitate this. Here, having each item linked to a check box, and these in turn linked to a central database, could help eliminate the degree of consistency and/or uniformity with which respondents tended to answer. Moreover, this automated solution could also help limit possible data capturing errors.
- With only eleven items being eliminated from the item pool, further refinement and/or reduction of survey items (using a focus group of organisational culture experts who applied the content validity approach to delete ambiguous, complicated and duplicated items) would definitely be a worthwhile consideration as the questionnaire still presents as an extremely lengthy survey tool.
- Unless there is a credible enough reason as to why certain sections (that is, Leadership, Strategy, Adaptability, Coordination, Relationships, Climate, Performance Indicators, and Forces) of the questionnaire are longer than others, it would be advisable to manage the balance between these sections so as to further streamline the questionnaire.
- Repeat the item and factor analysis on a bigger sample group (using a more stable questionnaire, with fewer items) in order to refine Smit et al.'s (2006) Organisational Culture Questionnaire even further (that is, further refine the original item subsets by removing any ambiguous or redundant items from the original set of items). In short, use further item and factor analysis statistics to delete specific items.
- Further exploratory factor analysis to confirm the underlying factor structure using principal factor extraction as well as promax oblique rotation (that is, to allow factors to be correlated with each other) could also be employed in an effort to improve the validity statistics.
- Further exploratory factor analysis on a sample of at least 2 510 respondents be conducted such that the factor analysis results be considered more conclusive rather than tenuous.

- Further statistical analysis using the structural equation modelling software LISREL 8.72, which would allow one to examine how well the observed data, fits the hypothesized structure of the X Model of Organisational Culture (Smit et al., 2006) could also be used to help improve this study's' current validity statistics.
- In the absence of norm groups, the inclusion of an importance rating and/or scale (for each of the items contained in the questionnaire) could prove rather useful. Doing this would help researchers and practitioners to compare the perceived culture rating with the importance rating and thus determine a gap (if any). Moreover, this would allow the target organisation to prioritise those areas, which they deem more and/or less, important.
- Without any norm group as a basis for comparison, rephrasing the questions in the questionnaire in such a way that it requires participants to respond along two separate scales (that is, a scale that relates to their "actual score" for the item versus their "preferred ideal score" for that item) could also prove rather beneficial. Thus, the "actual" rating can be compared with the "preferred" to yield a gap. These gaps could provide clients with several practical development options with which to start moving their culture.

5.5.2 Recommendations for further research

- Capture and store data on a central database such that norm tables can be produced (provided that the same survey tool is used). This would allow for comparisons between different organisations and perhaps even the emergence of a possible benchmark (per industry).
- Conducting co-variance structure analysis on a bigger sample group (using a more stable questionnaire, with fewer items) would help to lift out the relationships between the various elements underlying the actual model (that is, exploring the links between Leadership, Strategy, Adaptability, Coordination, Relationships, Climate, Business Performance Indicators, and Forces).
- Further statistical analysis regarding the relationship between Leadership and specific cultural elements needs to be explored (that is, investigating the link between Leadership and Culture). If the relationship were found to be statistically significant, then the data collected from that organisation's culture assessment would help to identify those

elements of Leadership, which would have the most impact on that organisations' culture. Thus, by leveraging specific elements of its leadership capacity, the organisation would be in a position to strengthen its organisational culture.

- Another relationship that is worthwhile to explore is the link between Climate and Culture. If empirical evidence were found to support the notion that Climate is in fact the manifestation of that organisation's culture, then one could begin to isolate those cultural dimensions, which have the strongest impact on Climate. By doing so, organisations could tap the discretionary effort of their employees', which would allow them to engender support and enthusiasm for future cultural endeavours.
- The expansion of this study to a global sample so as to position the Organisational Culture Assessment Tool (Smit et al., 2006) as a globally relevant one and thereby allowing it to contribute significantly to a more global market would also be advised. This would mean that individuals other than those in the South African public service sector could use the tool.

5.6 Concluding Remarks

It is evident that despite there being sufficient empirical support to suggest that Smit et al.'s (2006) Measurement Tool does in fact tap the construct of organisational culture (that is, that the survey tool displays positive signs of validity and reliability), findings remain inconclusive when comes to actually validating the underlying theoretical structure.

The statistical analysis clearly indicates that there is not such a good fit between the way in which the data behaved and the original hypothesized structure of the X Model of Organisational Culture (Smit et al., 2006). In some cases the original structure appeared to fit rather well (like in the case of Leadership) and in other cases not (like in case of the Coordination which did not even appear in the component matrix). The findings suggest that the measurement instrument could be improved by refining the item sets even further.

Here it needs to be stressed that using the statistically suggested items as the basis for item refinement could prove to have an adverse impact on the theoretical structure and sub-elements of the X Model of Organisational Culture (Smit et al., 2006).

In short, this study suggests that there is provisional support to accept that Smit et al's (2006) Organisational Culture Assessment Tool displays positive signs of reliability as well as validity. Thus, this study arguably contributes to the body of knowledge surrounding organisational culture by introducing the tool's psychometric properties to the industrial psychology and organisational behaviour fraternity. In light of this study's findings regarding Smit et al.'s (2006) X Model of Organisational Culture, it could also be seen to offer a guide to practitioners with regards to developing a more effective and efficient culture assessment instrument.

The findings of this study provide valuable insights into the theory of organisational culture and it is expected that the above recommendations be taken further in order that Smit et al's (2006) Organisational Culture Assessment Tool be developed further, and ultimately mature into a scientifically sound (and stable) assessment instrument.



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The Organisational Culture Measurement Questionnaire - Biographical Items

Section 1

1. Department
2. Salary level
3. Gender
4. Language
5. Years of service
6. Academic qualification
7. Age
8. Disability
9. Location

The Organisational Culture Measurement Questionnaire - Culture Items by element & sub-element

Element	Sub-element	Code	Item
Leadership (Section 2)	Energy demonstration	LED1	1. My immediate supervisor exhibits passion for his/her work
		LED2	2. My immediate supervisor puts in a lot of effort to meet targets and deadlines on time
		LED3	3. My immediate supervisor is quick to act on issues that arise in the workplace
		LED4	4. My immediate supervisor sets high performance standards for him/herself and others
		LED5	5. My immediate supervisor is enthusiastic about his/her job
		LED6	6. My immediate supervisor exhibits a positive attitude regarding his/her work
	Energy transference	LET1	1. My immediate supervisor gets my team excited about new work assignments
		LET2	2. My immediate supervisor constantly interacts with staff and clients
		LET3	3. My immediate supervisor makes work fun and exciting

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		LET4	4. My immediate supervisor takes us on regular team building exercises
		LET5	5. My immediate supervisor encourages us to move beyond our comfort zones
		LET6	6. My immediate supervisor encourages us to become more creative in our work
		LET7	7. My immediate supervisor motivates us to go the extra mile when things get tough
		LET8	8. My immediate supervisor listens to us and our clients in a way that ensures open, two-way communication
		LET9	9. My immediate supervisor's attitude helps motivate us to meet targets and deadlines
	Vision	LV1	1. My immediate supervisor explains to us the relationship between our <i>Business Unit</i> and the rest of our Department (<i>item adapted for the purpose of client anonymity</i>)
		LV2	2. My immediate supervisor helps us to understand where we fit into the Organisation's <i>overall vision</i> (<i>item adapted for the purpose of client anonymity</i>)
		LV3	3. My immediate supervisor provides us with a sense of direction and purpose
		LV4	4. My immediate supervisor helps us to see meaning in the Department's vision and strategy
		LV5	5. My immediate supervisor helps us to see meaning in our <i>Business Unit's</i> vision and strategy (<i>item adapted for the purpose of client anonymity</i>)
		LV6	6. My immediate supervisor provides feedback to us on how our individual work assignments fit in with the Department's bigger picture
		LV7	7. My immediate supervisor provides feedback to us on how our individual work assignments fit in with our <i>Business Unit's</i> bigger picture (<i>item adapted for the purpose of client anonymity</i>)
		LV8	8. My immediate supervisor spends time clarifying the link between each individual's role and the Department's key outputs
	Integrity	LI1	1. My immediate supervisor conducts himself/herself in accordance with the Code of Conduct for the Public Service
		LI2	2. My immediate supervisor is honest and trustworthy
		LI3	3. My immediate supervisor keeps his/her promises
		LI4	4. My immediate supervisor treats all staff with equal respect
		LI5	5. My immediate supervisor can be trusted to honour the confidentiality of private, personal discussions
		LI6	6. My immediate supervisor shares information openly and transparently
		LI7	7. My immediate supervisor practices what she/he preaches (i.e. does what she/he says)

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Honesty/Candour	LC1	1. My immediate supervisor relies on facts rather than emotions when faced with a decision
	LC2	2. My immediate supervisor practices and encourages straight talk
	LC3	3. My immediate supervisor always clarifies the reasons for making his/her decisions
	LC4	4. My immediate supervisor clarifies exactly what she/he expects from us
	LC5	5. My immediate supervisor makes tough decisions when necessary
	LC6	6. My immediate supervisor creates the space where people can disagree
	LC7	7. My immediate supervisor is not afraid to discipline me or my colleagues when required
	LC8	8. My immediate supervisor disciplines his/her subordinates fairly and without discrimination
Action	LA1	1. My immediate supervisor makes things happen rather than wait for things to happen
	LA2	2. My immediate supervisor turns decisions into actions
	LA3	3. My immediate supervisor manages our team's priorities in order to produce results
	LA4	4. My immediate supervisor is goal and output focused
	LA5	5. My immediate supervisor is determined to get things done
	LA6	6. My immediate supervisor ensures that new ideas get implemented
Style	LS1	1. My immediate supervisor can adapt his/her leadership style to different people and situations in <i>Business Unit</i> (item adapted for the purpose of client anonymity)
	LS2	2. My immediate supervisor will adapt his/her style in order to connect with others
	LS3	3. My immediate supervisor defines the roles and tasks of his/her people and supervises them closely (i.e. telling style)
	LS4	4. My immediate supervisor encourages a "one-way" or "top-down" style of communication (i.e. telling style)
	LS5	5. My immediate supervisor defines roles and tasks for us and seeks our ideas and suggestions (i.e. coaching style)
	LS6	6. My immediate supervisor encourages a "two-way" style of communication (i.e. coaching style)
	LS7	7. My immediate supervisor involves him/herself in decision making and problem-solving, but the final decision ultimately rests with us (i.e. delegating style)
	LS8	8. My immediate supervisor encourages an environment where we decide when and how to involve him/her (i.e. delegating style)
	LS9	9. My immediate supervisor lets us make day-to-day decisions regarding task allocation and process implementation (i.e. supporting style)
	LS10	10. My immediate supervisor facilitates and takes part in decisions, but control rests with us (i.e. supporting style)

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Strategy (Section 3)	Direction creation	SDC1	1. The <i>Organisation</i> has clear long term direction and purpose (<i>item adapted for the purpose of client anonymity</i>)
		SDC2	2. The <i>Organisation</i> has created a meaningful long-term vision (<i>item adapted for the purpose of client anonymity</i>)
		SDC3	3. The <i>Organisation</i> has created meaningful long-term strategies (<i>item adapted for the purpose of client anonymity</i>)
		SDC4	4. I know what is important to ensure future success for the <i>Organisation</i> (<i>item adapted for the purpose of client anonymity</i>)
		SDC5	5. I understand the purpose of my <i>Business Unit</i> and know exactly how I contribute to it (<i>item adapted for the purpose of client anonymity</i>)
		SDC6	6. My team is given direction in order to help us realise the <i>Organisation's</i> strategic objectives (<i>item adapted for the purpose of client anonymity</i>)
		SDC7	7. My team is given direction in order to help us realise our <i>Business Unit's</i> strategic objectives (<i>item adapted for the purpose of client anonymity</i>)
	Objective setting	SOS1	1. My <i>Business Unit</i> has a clear direction in its work through concrete goals and objectives (<i>item adapted for the purpose of client anonymity</i>)
		SOS2	2. The strategy of the <i>Organisation</i> has been converted into concrete goals in my Department (<i>item adapted for the purpose of client anonymity</i>)
		SOS3	3. My Department has a breakdown of goals for all <i>Business Units</i> in the Department to help everyone see how their contributions fit into the bigger picture (<i>item adapted for the purpose of client anonymity</i>)
		SOS4	4. We know what the Department's objectives are
		SOS5	5. The <i>Organisation</i> has created concrete goals and objectives from its vision (<i>item adapted for the purpose of client anonymity</i>)
	Engagement	SE1	1. There is organisation-wide consultation when strategy is formulated
		SE2	2. The right people within the organisation are involved when strategy is formulated
		SE3	3. My Department encourages everyone to come up with good ideas when formulating strategy
		SE4	4. Everybody are, to some degree, involved in the process of creating operational plans
		SE5	5. My immediate supervisor consults with our team when compiling objectives for the <i>Business Unit</i> (<i>item adapted for the purpose of client anonymity</i>)
	Communicating meaning	SCM1	1. The vision of the <i>Organisation</i> gets communicated in clear and understandable terms (<i>item adapted for the purpose of client anonymity</i>)
		SCM2	2. The strategy of the <i>Organisation</i> was explained to me in a clear and understandable manner (<i>item adapted for the purpose of client anonymity</i>)

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	SCM3	3. The vision of my Department gets communicated in clear and understandable terms
	SCM4	4. The vision of my <i>Business Unit</i> gets communicated in clear and understandable terms (<i>item adapted for the purpose of client anonymity</i>)
	SCM5	5. I have read my Department's latest strategic plan
	SCM6	6. Somebody has explained the contents of our Department's latest strategic plan to me in clear and understandable terms
	SCM7	7. In our <i>Business Unit</i> everyone understands why we do things and where we are going (<i>item adapted for the purpose of client anonymity</i>)
	SCM8	8. There are regular meetings to explain what our <i>Business Unit's</i> aims are, who we are, where we are going (<i>item adapted for the purpose of client anonymity</i>)
	SCM9	9. My Department regularly communicates information that is important to me
	SCM10	10. My Department is constantly looking for innovative ways of communicating with staff and our clients to convey information that are important and meaningful to them
	SCM11	11. My Department communicates information in such a way that it creates synergy among the staff
	SCM12	12. The <i>Organisation</i> communicates its vision in such a way that it creates understanding among all its staff (<i>item adapted for the purpose of client anonymity</i>)
	SCM13	13. The <i>Organisation</i> communicates its vision in such a way that it creates acceptance among all its staff (<i>item adapted for the purpose of client anonymity</i>)
	SCM14	14. The <i>Organisation</i> communicates its vision in such a way that staff are energised to deliver (<i>item adapted for the purpose of client anonymity</i>)
	SCM15	15. The <i>Organisation</i> communicates its vision to staff in such a way that it helps them see meaning in their work (<i>item adapted for the purpose of client anonymity</i>)
Alignment	SA1	1. Staff of the Department understand how their job relates to the vision and strategic direction of the Department
	SA2	2. My job delivers important input for the Department's output (contributes to service delivery)
	SA3	3. As the Department's objectives change, so do my responsibilities (i.e. job description)
	SA4	4. I understand how the work I do is aligned to the <i>Organisation's</i> strategy (<i>item adapted for the purpose of client anonymity</i>)
	SA5	5. The Department's goals are achieved by aligning the various functions of the different <i>Business Units</i> (<i>item adapted for the purpose of client anonymity</i>)
	SA6	6. I know how my job fits into the operational plans of my <i>Business Unit</i> (<i>item adapted for the purpose of client anonymity</i>)

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Adaptability (Section 4)	Client focus	ACF1	1. I know who my <i>Business Unit's</i> clients are (<i>item adapted for the purpose of client anonymity</i>)
		ACF2	2. I understand my <i>Business Unit's</i> clients and their needs (<i>item adapted for the purpose of client anonymity</i>)
		ACF3	3. Our clients always come first
		ACF4	4. My <i>Business Unit's</i> clients are satisfied with our services (<i>item adapted for the purpose of client anonymity</i>)
		ACF5	5. My <i>Business Unit's</i> clients are satisfied with the manner in which we respond to their needs (<i>item adapted for the purpose of client anonymity</i>)
		ACF6	6. My <i>Business Unit's</i> clients have their problems sorted out quickly (<i>item adapted for the purpose of client anonymity</i>)
		ACF7	7. Each individual in my <i>Business Unit</i> takes personal responsibility in solving client problems (<i>item adapted for the purpose of client anonymity</i>)
		ACF8	8. Staff in my <i>Business Unit</i> are generally very concerned about the needs of our clients (<i>item adapted for the purpose of client anonymity</i>)
		ACF9	9. Internal work processes (the way we work) are designed to improve client service
	Creating change	ACC1	1. My <i>Business Unit</i> is able to respond quickly to the changing needs of its clients (<i>item adapted for the purpose of client anonymity</i>)
		ACC2	2. My <i>Business Unit</i> is able to predict changes in the environment and react to them (<i>item adapted for the purpose of client anonymity</i>)
		ACC3	3. My <i>Business Unit</i> is able to respond quickly to any changes that it encounters within the Public Sector environment (<i>item adapted for the purpose of client anonymity</i>)
		ACC4	4. My Department understands what is going on in the external environment and is able to respond quickly to changes
		ACC5	5. Management in my Department uses all available mechanisms within the public sector to drive and implement change efforts
		ACC6	6. My Department proactively seeks new opportunities for change to improve our service delivery
		ACC7	7. When we do change the way in which we work, my Department knows how to make the change fun and exciting
	Organisational learning	AOL1	1. My <i>Business Unit</i> is good at learning from its staff's experiences and applying the new knowledge (<i>item adapted for the purpose of client anonymity</i>)
		AOL2	2. When staff in other <i>Business Units</i> of the Department learn something new, it is shared with others (<i>item adapted for the purpose of client anonymity</i>)
		AOL3	3. Staff in my <i>Business Unit</i> don't make the same mistakes twice (<i>item adapted for the purpose of client anonymity</i>)
		AOL4	4. My Department knows how to share knowledge, information and experience among all its staff

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		AOL5	5. My Department creates opportunities for me to learn new things and share it with my colleagues
		AOL6	6. My immediate supervisor spends time with staff of my <i>Business Unit</i> to raise their awareness of new developments in the Department <i>(item adapted for the purpose of client anonymity)</i>
	Innovation and creativity	AIC1	1. My immediate supervisor encourages us to be innovative when we are faced with problems and/or opportunities
		AIC2	2. My immediate supervisor encourages us to be creative when we are faced with problems and/or opportunities
		AIC3	3. When staff in my <i>Business Unit</i> come up with creative ideas, it is normally considered and taken into account <i>(item adapted for the purpose of client anonymity)</i>
		AIC4	4. My Department rewards a questioning mindset
		AIC5	5. My Department tolerates experimentation and mistakes
		AIC6	6. An individual's creativity is highly valued in my <i>Business Unit</i> <i>(item adapted for the purpose of client anonymity)</i>
		AIC7	7. My colleagues and me are constantly looking for new and creative ways of delivering service to our clients
	Flexibility	AF1	1. Staff in my Department apply policies, rules and regulations to create opportunities rather than barriers
		AF2	2. My <i>Business Unit</i> applies policies, rules, regulations and beliefs in a way that enables change <i>(item adapted for the purpose of client anonymity)</i>
		AF3	3. Staff in my <i>Business Unit</i> are encouraged to change their own behaviour or approach in order to deliver a better service to the client <i>(item adapted for the purpose of client anonymity)</i>
		AF4	4. Staff in my <i>Business Unit</i> apply policies, rules and regulations in a manner that accommodates the client, without breaking the rules <i>(item adapted for the purpose of client anonymity)</i>
		AF5	5. Policies, rules and regulations are often used to make things happen within the organisation
		AF6	6. Staff in my <i>Business Unit</i> understand the policies of the Department and apply them to get things done, rather than see them as barriers <i>(item adapted for the purpose of client anonymity)</i>
Coordination (Section 5)	Organisational structure	COS1	1. My <i>Business Unit</i> is structured in such a way that it can best serve the client <i>(item adapted for the purpose of client anonymity)</i>
		COS2	2. My Department's structure makes it easy to coordinate work across different parts of the Department
		COS3	3. The structure of the Department is difficult to understand
		COS4	4. My Department's structure can be improved to encourage staff to work more across organisational <i>Business Units</i> or functional silos <i>(item adapted for the purpose of client anonymity)</i>
		COS5	5. This Department carefully plans and organises its <i>Business Unit's</i> in a way that supports service delivery <i>(item adapted for the purpose of client anonymity)</i>

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		COS6	6. The capacity to deliver efficient service seldom suffers due to the various lines of reporting
		COS7	7. I have a clear, single line of reporting
	Processes and systems	CPS1	1. The work systems and processes we use in my <i>Business Unit</i> make it easy for me to serve our clients (<i>item adapted for the purpose of client anonymity</i>)
		CPS2	2. The work systems and processes we use in my <i>Business Unit</i> ensure that our clients receive good service (<i>item adapted for the purpose of client anonymity</i>)
		CPS3	3. My colleagues and I constantly challenge the way we do things in order to serve the client better
		CPS4	4. My <i>Business Unit</i> is focussed on getting rid of complex business processes (i.e. simplifying the way things get done) (<i>item adapted for the purpose of client anonymity</i>)
		CPS5	5. My <i>Business Unit</i> is focussed on "keeping everything simple" in order to serve clients efficiently (<i>item adapted for the purpose of client anonymity</i>)
		CPS6	6. My <i>Business Unit's</i> clients get the best service because our systems and processes are designed to support service delivery (<i>item adapted for the purpose of client anonymity</i>)
		CPS7	7. I have good ideas on how we, without lots of money, can make my <i>Business Unit's</i> work more simple, better and/or faster if only somebody will listen to me and take my ideas seriously (<i>item adapted for the purpose of client anonymity</i>)
	Positional power	CPP1	1. Position creates power within my <i>Business Unit</i> and Department (<i>item adapted for the purpose of client anonymity</i>)
		CPP2	2. My rank or salary level determines my position, influence and value in my <i>Business Unit</i> and Department (<i>item adapted for the purpose of client anonymity</i>)
		CPP3	3. The fact that we have staff on so many levels in my Department does not create distance and gaps in the service delivery process
		CPP4	4. My supervisor respects the value my colleagues and I can bring to the service delivery process (i.e. the individual's contribution towards serving the client)
		CPP5	5. My immediate supervisor does not abuse his/her position, but rather uses it to co-ordinate service delivery
		CPP6	6. My immediate supervisor uses his/her position to give or withhold information in order that she/he may gain a positive result
		CPP7	7. There isn't much of a communication gap between top management and lower level staff in my Department
		CPP8	8. In my Department staff place more emphasis on their position and status in the Department than on service delivery
	Performance management	CPM1	1. My <i>Business Unit</i> has a system in place which regularly measures the work that the <i>Business Unit</i> does (<i>item adapted for the purpose of client anonymity</i>)

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		CPM2	2. My colleagues and I receive regular feedback regarding our <i>Business Unit's</i> performance (<i>item adapted for the purpose of client anonymity</i>)
		CPM3	3. I have regular discussions with my immediate supervisor on my own performance
		CPM4	4. My colleagues and I get recognised for the good work that we do
		CPM5	5. My Department ensures that the right people get rewarded for good performance
		CPM6	6. Average performance is not tolerated in my work group
		CPM7	7. My immediate supervisor acknowledges staff for doing good work
		CPM8	8. My immediate supervisor helps me set performance goals for myself to ensure that I stay on the right track
		CPM9	9. The performance goals set by my immediate supervisor are very challenging
		CPM10	10. The performance goals set by my immediate supervisor are monitored regularly
		CPM11	11. My Department actively manages the performance and/or non-performance of its staff
		CPM12	12. My Department aligns its performance management systems with service delivery outputs
		CPM13	13. Salaries and incentives are generally related to job performance
		CPM14	14. Promotions normally go to the top performers within the Department
	Communication management	CCM1	1. Proper communication channels are in place to deal with problems within our Department
		CCM2	2. Proper communication channels are in place to deal with problems within our <i>Organisation</i> (<i>item adapted for the purpose of client anonymity</i>)
		CCM3	3. My immediate supervisor always informs me about decisions
		CCM4	4. My Department delivers messages in a manner that gains support, commitment and agreement
		CCM5	5. Communication channels encourages participation and mutual understanding
		CCM6	6. My Department communicates to my colleagues and me in interesting and motivating ways
		CCM7	7. I had a proper induction course when I started working for this <i>Organisation</i> (<i>item adapted for the purpose of client anonymity</i>)
Relationships (Section 6)	Team orientation (in teams)	RT01	1. My <i>Business Unit</i> identifies team objectives (<i>item adapted for the purpose of client anonymity</i>)
		RT02	2. Staff in my <i>Business Unit</i> willingly co-operate with each other in order to get work done (<i>item adapted for the purpose of client anonymity</i>)
		RT03	3. Staff in my <i>Business Unit</i> arrange regular meetings with the different members of the team (<i>item adapted for the purpose of client anonymity</i>)

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		RT04	4. Staff in my <i>Business Unit</i> talk positively about each other (<i>item adapted for the purpose of client anonymity</i>)
		RT05	5. Staff in my <i>Business Unit</i> respect each others roles in the <i>Business Unit</i> (<i>item adapted for the purpose of client anonymity</i>)
		RT06	6. Staff in my <i>Business Unit</i> come together and agree upon common goals (<i>item adapted for the purpose of client anonymity</i>)
Cooperation (between teams & organisational units & levels)		RC1	1. <i>Individuals</i> from different departments continuously build partnerships with other departments to improve service delivery (<i>item adapted for the purpose of client anonymity</i>)
		RC2	2. Inter departmental teams work together towards a common goal
		RC3	3. Departments within this <i>Organisation</i> readily share relevant or useful information (<i>item adapted for the purpose of client anonymity</i>)
		RC4	4. Departments create shared goals across boundaries (i.e. set joint targets)
		RC5	5. <i>Individuals</i> from different departments hold regular feedback sessions to identify areas of improvements between themselves (i.e. to improve inter-departmental functioning) (<i>item adapted for the purpose of client anonymity</i>)
		RC6	6. My colleagues and I recognise assistance received from colleagues in other <i>Business Units</i> (<i>item adapted for the purpose of client anonymity</i>)
		RC7	7. Teams from different <i>Business Units</i> willingly co-operate with each other in order to get work done (<i>item adapted for the purpose of client anonymity</i>)
Diversity		RD1	1. My Department appreciates and embraces cultural and other differences between its <i>Individuals</i> as an organisational strength (<i>item adapted for the purpose of client anonymity</i>)
		RD2	2. My Department actively encourages greater understanding and tolerance among <i>Individuals</i> from different groups (e.g. race, gender, language, etc) (<i>item adapted for the purpose of client anonymity</i>)
		RD3	3. In my Department, there are no cliques based on group differences (e.g. race, gender, language, etc), which impact job performance
		RD4	4. <i>Individuals</i> of my <i>Business Unit</i> are treated equally regardless of race (<i>item adapted for the purpose of client anonymity</i>)
		RD5	5. <i>Individuals</i> of my <i>Business Unit</i> are treated equally regardless of gender (<i>item adapted for the purpose of client anonymity</i>)
		RD6	6. <i>Individuals</i> of my <i>Business Unit</i> are treated equally regardless of age (<i>item adapted for the purpose of client anonymity</i>)
		RD7	7. <i>Individuals</i> of my <i>Business Unit</i> are treated equally regardless of religious beliefs (<i>item adapted for the purpose of client anonymity</i>)
		RD8	8. <i>Individuals</i> of my <i>Business Unit</i> are treated equally regardless of disability (<i>item adapted for the purpose of client anonymity</i>)
		RD9	9. <i>Individuals</i> of my <i>Business Unit</i> are treated equally regardless of sexual orientation (<i>item adapted for the purpose of client anonymity</i>)

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		RD10	10. <i>Individuals of my Business Unit are treated equally regardless of language (item adapted for the purpose of client anonymity)</i>
		RD11	11. <i>Individuals of my Business Unit are treated equally regardless of economic status (i.e. salary level) (item adapted for the purpose of client anonymity)</i>
		RD12	12. <i>Individuals of my Business Unit are treated equally regardless of academic qualification (item adapted for the purpose of client anonymity)</i>
		RD13	13. I find that my work environment is sympathetic towards me because I am a member of a specific group (e.g. race, gender, language, etc)
		RD14	14. I do not experience any discrimination in my work place
		RD15	15. In my <i>Business Unit</i> different people can express different points of view without any fear of victimisation or reprisal <i>(item adapted for the purpose of client anonymity)</i>
		RD16	16. In my <i>Business Unit's</i> service delivery to clients, we do not discriminate against any individual or group <i>(item adapted for the purpose of client anonymity)</i>
		RD17	17. I understand and accept the need to redress the imbalances of the past through Black Economic Empowerment, Employment Equity and Affirmative Action
		RD18	18. Diversity workshops enabled me to better understand and embrace difference in the workplace
	Talent management	RTM1	1. <i>My Business Unit is able to attract and retain the right people for the right job (item adapted for the purpose of client anonymity)</i>
		RTM2	2. My colleagues and I have the necessary knowledge, skill and competencies to render a high quality service to our clients
		RTM3	3. My knowledge, skills and competencies are constantly being developed through training and development
		RTM4	4. My Department invests in the skills of its people
		RTM5	5. My Department knows how to manage and support its talented employees
		RTM6	6. My Department strives to build competencies that are key to meeting the service delivery challenges within the public sector
		RTM7	7. Most of the training that I receive is relevant to my work and assists me in better service delivery
		RTM8	8. I will further my academic studies if my Department grants me a bursary
		RTM9	9. I am correctly placed in my current job
		RTM10	10. My knowledge, skills, competencies and experience are much higher than what my current job requires
	Values (Model Specific Section)	RVM1	1. My colleagues and I embrace the <i>Organisation's</i> belief set – “ <i>Belief 1</i> ”, “ <i>Belief 2</i> ”, and “ <i>Belief 3</i> ”) <i>(item adapted for the purpose of client anonymity)</i>

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	RVM2	2. Besides the <i>Organisation's</i> belief set, there is a clear and consistent set of values in my Department that governs the way <i>Individuals</i> conduct themselves (<i>item adapted for the purpose of client anonymity</i>)
	RVM3	3. My Department publicly supports the Code of Conduct for the Public Service as an important ethical code that helps <i>Individuals</i> to discern between the right and wrong way of doing things within the Department (<i>item adapted for the purpose of client anonymity</i>)
	RVM4	4. <i>Individuals</i> "practice what they preach" (i.e. people do what they say) (<i>item adapted for the purpose of client anonymity</i>)
	RVM5	5. <i>Individuals</i> who do not behave according to the Code of Conduct for the Public Service are disciplined (<i>item adapted for the purpose of client anonymity</i>)
	RVM6	6. I know that this <i>Organisation</i> does not tolerate fraud and corruption and that transgressors will be prosecuted (<i>item adapted for the purpose of client anonymity</i>)
	RVM7	7. I know where and how to report suspected cases of fraud and corruption
	RVM8	8. I know about whistle blowing and the protection of whistle blowers
Values (Client Specific Section)	RVPG1	1. My colleagues and I know what the <i>Organisation's</i> belief set is all about (<i>item adapted for the purpose of client anonymity</i>)
	RVPG2	2. My colleagues and I know what is meant by " <i>Belief 1</i> " (<i>item adapted for the purpose of client anonymity</i>)
	RVPG3	3. My colleagues and I embrace the notion of " <i>Belief 1</i> " (<i>item adapted for the purpose of client anonymity</i>)
	RVPG4	4. My colleagues and I know what is meant by " <i>Belief 3</i> " (<i>item adapted for the purpose of client anonymity</i>)
	RVPG5	5. My colleagues and I embrace the notion of " <i>Belief 3</i> " (<i>item adapted for the purpose of client anonymity</i>)
	RVPG6	6. My colleagues and I know what is meant by " <i>Belief 2</i> " (<i>item adapted for the purpose of client anonymity</i>)
	RVPG7	7. My colleagues and I embrace the notion of " <i>Belief 2</i> " (<i>item adapted for the purpose of client anonymity</i>)
	RVPG8	8. My colleagues and I understand the link between " <i>Belief 1</i> " and such concepts as "access and openness" (<i>item adapted for the purpose of client anonymity</i>)
	RVPG9	9. My colleagues and I believe in creating a culture of collaboration (working together)
	RVPG10	10. My colleagues and I understand the link between " <i>Belief 2</i> " and concepts such as "consultation, redress and courtesy" (<i>item adapted for the purpose of client anonymity</i>)
	RVPG11	11. My colleagues and I actively listen to customers' problems
RVPG12	12. My colleagues and I apologize when necessary	
RVPG13	13. My colleagues and I deliver service with a smile	

		RVPG14	14. My colleagues and I understand the link between "Belief 3" and concepts such as "service standards, information, and value for money" (item adapted for the purpose of client anonymity)
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The Organisational Culture Measurement Questionnaire - Climate Items

Element	Code	Items
Climate (Section 7)	C1	1. There is a friendly atmosphere among the people within my work group
	C2	2. People in my work group are warm and friendly to each other
	C3	3. There is a good relationship between our team and our immediate supervisor
	C4	4. There is a strong relationship in the way our work group is led and the atmosphere within it (i.e. the "vibe" among the people)
	C5	5. My immediate supervisor's behaviour impacts the way I feel about my work
	C6	6. My immediate supervisor has a strong impact on the way we do things around here
	C7	7. My immediate supervisor has a strong impact on the way we feel about things around here
	C8	8. My immediate supervisor's leadership style impacts the atmosphere within my work group
	C9	9. People in my work group seem positive about the <i>Organisation's</i> new agenda (i.e. the <i>Organisational vision and strategy</i>) (item adapted for the purpose of client anonymity)
	C10	10. People in my work group seem committed to the <i>Organisation's</i> new agenda (i.e. the <i>Organisational vision and strategy</i>) (item adapted for the purpose of client anonymity)
	C11	11. There is strong motivation among the <i>Individuals</i> in my <i>Business Unit</i> to deliver on the organisation's new agenda (i.e. the <i>Organisational vision and strategy</i>) (item adapted for the purpose of client anonymity)
	C12	12. My colleagues and I feel proud to belong to our Department
	C13	13. My colleagues and I almost always speak well of our <i>Business Unit</i> (item adapted for the purpose of client anonymity)
	C14	14. My colleagues and I almost always speak well of our Department
	C15	15. My colleagues and I feel safe and secure in our <i>Business Unit</i> and Department (item adapted for the purpose of client anonymity)
	C16	16. My colleagues and I feel motivated to go out of our way to make our <i>Business Unit</i> successful (item adapted for the purpose of client anonymity)
	C17	17. There is not much personal loyalty to our Department

	C18	18. There is not much gossip or backbiting in our <i>Business Unit</i> (item adapted for the purpose of client anonymity)
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The Organisational Culture Measurement Questionnaire - Business Performance Indicator Items

Element	Code	Items
Business Performance Indicators (Section 8)	BPI1	1. My <i>Business Unit</i> has a positive work climate (item adapted for the purpose of client anonymity)
	BPI2	2. My <i>Business Unit</i> delivers a high quality of service to its clients (item adapted for the purpose of client anonymity)
	BPI3	3. My <i>Business Unit</i> delivers a high quantity of service to its clients (item adapted for the purpose of client anonymity)
	BPI4	4. My <i>Business Unit</i> delivers its services quickly and efficiently (i.e. known for its quick service delivery) (item adapted for the purpose of client anonymity)
	BPI5	5. My <i>Business Unit</i> has a high degree of client satisfaction (i.e. many happy clients) (item adapted for the purpose of client anonymity)

The Organisational Culture Measurement Questionnaire - Forces items (qualitative)

Element		Code	Items
Forces (Section 9)	Hidden Forces	FHF1	1. What are some of the other factors/forces that impact the way you do things at the <i>Organisation</i> (include those things which may have happened in the past, and which still impact your <i>Business Unit</i> today)? (item adapted for the purpose of client anonymity)
	Motivational Factors	FMF1	2. Highlight those factors which motivate you at work (be specific)?