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Gordon Institute
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The evolution of organisational culture in a successful South African airline

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A research project submitted to the Gordon Institute of Business Science, University of Pretoria, in partial fulfilment of the requirements for the degree of Master of Business Administration.

10 November 2014

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ABSTRACT

There are many divergent opinions on the nature of organisational culture and organisational climate and the relationship between these two constructs. This study was conducted to assess the level of change in organisational culture as measured by an externally administered survey, the organisational climate as measured by an internal survey, and the development in financial performance over the same period. The subject was Comair Ltd, a successful airline operating out of South Africa.

The research was conducted in three sections; firstly the organisational culture was examined using the Denison Organisational Culture Survey as administered by Denison Consulting in the USA. The author compared a pre-existing survey from 2011 which contained 53 responses, and a newly commissioned survey in 2014 for which there were 24 responses. Secondly, the author compared the internally administered Comair Think Vision Climate Survey over a period of three years – 2012 to 2014. The response rate for the latest survey was 96% of all Comair employees. Lastly an analysis was conducted of the company's key financial ratios over an extended period.

Notwithstanding concerns regarding the practical significance of the Think Vision data, all three areas showed marked improvements. The financial performance of the company improved dramatically since 2012 and both the culture and the climate survey demonstrated increases. Of interest was the fact that both surveys independently indicated a move towards a more structured, mission oriented company. This development can be traced back to specific developments taking place in the company over the same period.

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KEYWORDS

Organisational culture; climate; performance

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DECLARATION

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other university. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

_____

Lachlan James Harris 10 November 2014

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NOTE TO THE EXAMINER

This research project has been prepared as a Journal Article as part a project piloted by GIBS. The Journal chosen is The Journal of Business Venturing which is part of the Elsevier Publishing Group.

The article has been formatted in accordance with the guidelines provided by the journal. In addition to the article, Chapters 8 and 9, the Literature Review and Research Methodology, have been included specifically as a requirement of GIBS. However given that the article must be read and understood in isolation, much of the material included in chapters 8 and 9 can be found in the article as well. Chapters 8 and 9 do however contain more detailed references and definitions.

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Gordon Institute of Business Science
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Prof Shepherd

The Editor

Journal of Business Venturing

Submission of Article: The evolution of organisational culture in a successful South African airline

Attached please find an article "*The evolution of organisational culture in a successful South African airline"* for consideration in the Journal of Business Venturing. The article deals with the organisational culture, organisational climate and the profitability of an airline company in South Africa. Multiple sources were examined including an externally administered organisational culture survey, an internally conducted climate survey and the financial result of the organisation. The paper is unique in comparing the results of a culture survey and a climate survey, and in relating the two back to the performance of the company.

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Kind regards

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JOURNAL ARTICLE

The evolution of organisational culture in a successful South African airline

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Keywords: Organisational culture, Climate, Performance

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1. Introduction

Following the research of early pioneers in the field of organisational culture in the 1980's, much has been done to further define and understand the concept. Research has also examined organisational climate and whether changes in either of these constructs can be related to other facets of a business such as performance.

Schein (1983) defines organisational culture as the pattern of basic assumptions that a given group has invented, discovered, or developed in learning to cope with its problems of external adaption and internal integration (Schein, 1985).

The terms organisational climate and organisational culture are often used interchangeably. However opinions differ on whether they are in fact similar constructs and in the event that they are similar, in what manner. Moran and Volkwein (1992) propose that climate consists of shared perceptions of an organisation whereas culture is made up of shared assumptions. Wallace, Hunt, and Richards (1999) write that while similar, there is a fundamental difference between the two in that climate is derived from internal influences while culture results from a large number of both internal and external factors.

While there is an abundance of research linking organisational culture to company performance, the same cannot be said for organisational climate. Similarly there does not appear to be research on whether there is any correlation between the two constructs. If we accept that culture and climate are indeed different constructs, and that there is in fact a relationship between the two, then can any changes in either be linked to changes in an organisation's performance?

This article examines whether there are changes in organisational climate and organisational culture, the former being measured through an internal survey and the latter through an independent analysis. We will then examine the performance of the organisation.

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2. Background

2.1. International Background

The 1st of January 2014 marked the centenary of the scheduled commercial aviation industry. Aviation has become an essential part of global infrastructure and was a significant catalyst for change in the 20th Century. It has transformed our world into a global community allowing the exchange of ideas, cultures and experiences not possible before (IATA, 2014).

Following the First World War, the Convention Relating to the Regulation of Aerial Navigation (from the Paris Convention of 1919) recognised the "complete and exclusive national sovereignty over the air space above a nation's territory" (Lyth, 1997). This early move paved the way for the regulation of the airline industry. Apart from the USA, flag carriers were state owned and usually heavily subsidised, and regulation protected incumbents from new competition and price wars, creating an oligopolistic structure (Luke & Walters, 2013).

Airline deregulation started in the USA with the Airline Deregulation Act of 1978. Europe followed between 1988 and 1997 and other parts of the world saw the industry deregulate more recently. The skies over South East Asia were opened up in 2009 and in 2012 Brazil joined the signatories of the Latin American Civil Aviation Commission (LACAC).

While deregulation had different effects on different markets, Levine (1987) pointed out that mergers and consolidations, vertical integration, the development of hub-and-spoke systems, frequent flier programmes, new market casualties and increasingly complex fare structures were among the results seen due to deregulation. Luke and Walters quote Fu, Oum, and Zhang (2010) saying that air transport liberalisation had the effect of stimulating economies as a whole.

Globally the airline industry continues to face tough times. The price of fuel and a fragile world economy continue to impact heavily on the industry; in 2013 jet fuel accounted for 31% of airline costs. According to Tony Tyler, CEO of the International Air Transport Association (IATA), the industry made a collective profit of US$ 12.9 billion on revenues of US$ 708 billion. This equates to a net profit margin of just 1.8% or approximately US$ 4 profit per passenger carried (Creamer's Engineering News,

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2013) (IATA, 2014). Twenty-nine million flights took place across the globe in 2013.

2.2. South African Context

As a signatory to the Paris Convention in 1919 (as part of the British Empire) the South African air transport regulatory environment was also based on air sovereignty (Lyth, 1997) (Luke & Walters, 2013). Government-owned South African Airways was established in 1934, and as the flag carrier, was protected from competition for more than 40 years (Luke & Walters, 2013).

Prior to deregulation, only four airlines were active in South Africa:

- South African Airways (1934)
- Comair (1946)
- Link Airways (later S A Airlink) (1978)
- Bop Air (later Sun Air) (1979)

With the advent of democracy in South Africa in 1994 and the subsequent inclusion of the country in world economic and commercial affairs, South African businesses were required to evolve in order to stay competitive. The changes coincided with a period of deregulation in the country which opened up the doors to greatly increased competition. Deregulation of the air industry in South Africa started with the Margo Commission in 1979 and culminated with the publication of the Domestic Air Transport Policy in 1990. The policy was legislated in the Air Services Licensing Act, Act No. 115 of 1990 which came into effect in July 1991. At the time of deregulation, SAA had an estimated domestic market share of 90% of all scheduled passengers with 75% of those passengers travelling the so-called “Golden Triangle” routes between Johannesburg, Cape Town and Durban. The ensuing years saw a number of entries and exits in the industry (Luke & Walters, 2013).

From 2001 the market was further stimulated by the new entry of the budget carriers which resulted in structural changes in the market and more choice for passengers (Luke & Walters, 2013). Erik Venter, the CEO of Comair, speaking through Finweek in September 2007 estimated that air travel in South Africa had increased by some 70% due largely to the proliferation of low-cost airlines following the deregulation of the industry in the 1990’s (Finweek, 2007).

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One such airline was Comair which had existed since 1946 but which had previously been excluded from main-stream passenger air services. As a result of the changes referred to above, Comair was faced with the need for urgent change in order to secure its position in the rapidly changing business. A strategic review of the organisation was conducted in 2010 and the leadership at Comair decided to implement an integrated system to replace the previously disparate set of systems that had developed over the past 50 years (Glaser, Schneider, & Van der Ryst, 2012).

2.3. The Need for Change

In 2011, Comair selected Sabre Airline Solutions (Sabre) to provide a comprehensive, integrated operating solution. Apart from integrating systems, the platform was intended to improve customer service, integrate with third party systems, improve its distribution network and ultimately improve company profitability. However such a significant overhaul of platforms presented many other attitudinal and behavioural challenges. Management acknowledged these difficulties and secured the services of gothamCulture to facilitate the change management in the organisation (Glaser et al., 2012).

In an intervention lasting more than a year, gothamCulture developed and executed the integrated change management programme which included the following:

- Re-developing Comair's vision, mission and strategy
- Formulating plans and implementation support for Sabre
- Formulating mitigation plans and tactics to address risks associated with the process
- Developing a comprehensive communication plan and tactics
- Revisiting the role, behaviours and attitudes of the leaders

As a component of the intervention, gothamCulture made use of Denison Consulting to conduct a thorough organisational culture survey, the results of which were used as an analysis tool to aid in the change management programme.

The project was co-ordinated under the umbrella of "Operation Crossover". The operation culminated in a smooth and successful systems change-over on the 23rd of June 2012 (Glaser et al., 2012).

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3. Theory

3.1. Understanding Organisational Culture

Edgar Schein (1983) was one of the first academics to analyse organisational culture. He believes that culture does not relate to overt behaviour or visible artefacts that are apparent to the outside visitor to a company, but rather to the assumptions that underlie the values and which determine behaviour patterns.

Schein (1983) goes on to say that culture also consists of visible artefacts such as architecture, office layout, dress codes and so on. He continues "organizational (sic) culture, then, is the pattern of basic assumptions that a given group has invented, discovered, or developed in learning to cope with its problems of external adaption and internal integration" (p.14). This pattern should work well enough to be considered valid and therefore form the basis of integration for new members into the organisation (Schein, 1983).

Schein expands his theory in his book "Organizational Culture and Leadership" where he points out that "to understand a group's culture, one must attempt to get at its shared basic assumptions and one must understand the learning process by which such assumptions come to be" (Schein, 2010, pg. 36).

Kotter and Heskett (2008) in their book Corporate Culture and Performance define culture as the qualities of any specific human group that are passed from one generation to the next. They further distinguish between two levels of culture:

- at a deeper less visible level culture consists of values that are shared by people in a group and that tend to persist over time, even when group membership changes. This level of culture can be very difficult to change and often exists at a subconscious level.
- at a more visible level culture consists of the behaviour patterns or style of an organisation that new employees are automatically encouraged to follow by fellow employees. This level of culture exists at a conscious level and while still difficult to change is easier than the former level (Kotter & Heskett, 2008).

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3.2. Organisational Culture versus Climate

The term organisational climate is often used interchangeably with culture, and it needs to be determined whether this is a valid substitution, or whether these are distinctly different concepts.

Wallace, Hunt and Richards (1999) in their paper "The relationship between organisational culture, organisational climate and managerial values" argue that there is a close and sometimes ambiguous relationship between climate and culture which until their research, had often been overlooked in literature at the time (Wallace et al., 1999). In their article they draw on the work of a number of authors including Schein (1985) who proposed that culture is widely understood to be made up of a collection of fundamental values and belief systems which give meaning to organisations. It is thus argued to be a more implicit concept than organisational climate.

Organisational climate on the other hand consists of more empirically accessible elements such as behavioural and attitudinal characteristics (Moran & Volkwein, 1992). They go on to explain that a further distinction lies in the fact that the climate of an organisation consists mainly of shared perceptions whereas culture of an organisation is made up of shared assumptions (Wallace et al., 1999). Similarly Moran & Volkwein (1992) suggest that climate consists of attitudes and values alone, whereas culture exists as a collection of basic assumptions, in addition to attitudes and values.

A more accessible definition of climate is put forward by Hemmelgarn, Glisson and James (2006) who propose that climate (specifically psychological climate) is the individual employee's perception of the psychological impact of the work environment on his or her own well-being. Put simply an employee assesses whether or not one's work environment is good or bad for one's own personal well-being (Hemmelgarn et al., 2006).

Wallace et al. (1999) go on to examine the relationship between culture, climate and values. Though closely related to culture, organisational climate holds several important differences. Climate refers to a summary perception of how an organisation deals with its members and environments and thus develops specifically from internal factors primarily under managerial influence (Ostroff & Schmitt, 1993). Organisational culture on the other hand is created from a broad range of internal and external influences, some of which lie beyond management control (Alvesson, 1991). The

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authors point out that it has been strongly contended that culture, climate and managerial values are instrumental in predicting levels of managerial and organisational effectiveness, although insufficient empirical testing of this hypothesis has been conducted (Wallace et al., 1999).

Denison (1996) in his study "What is the Difference between Organizational Culture and Organizational Climate?" attempts to further explain the difference between the two constructs. He examines the alternate viewpoints that on the one hand culture and climate represent two entirely separate phenomena, and on the other whether they represent closely related phenomena that are simply being examined from different perspectives. He goes on to suggest that both perspectives could in fact be regarded as examining the internal social psychological environment of organisations and the relationship of that environment to individual meaning and organisational adaption.

On review of the available literature, Denison (1996) proposes that on the surface the distinction between organisational climate and organisational culture may appear to be quite clear: Climate refers to a situation and its link to thoughts, feelings and behaviours of organisational members. Therefore it is temporal, subjective and often subject to direct manipulation by people with power and influence. Culture on the other hand refers to an evolved context (within which a situation may be embedded). Thus it is rooted in history, collectively held and sufficiently complex to resist direct manipulation.

Ostroff, Kinicki, and Tamkins, (2003) while citing Denison, define climate as a perceptually based description of the organisation and what it is like in terms of practices, policies, procedures and routines. On the other hand they submit that culture helps define the underlying reasons and mechanisms for why these things occur in an organisation based on fundamental ideologies, assumptions, values and artefacts (Ostroff et al., 2003).

Climate has also been described as a social-cognitive construct (Zohar & Luria, 2004). Because climate perceptions concern the types of role behaviour likely to be rewarded and supported, the authors argue that the most significant information on the organisation's climate will be derived from events that reveal managerial policies and practices. Such events serve as climate indicators that can reveal the priority of key facets which may in fact differ from formal declarations concerning the same issues. For example if merit bonuses are awarded to workers who prioritise productivity over

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safety, workers will infer low safety priority, even if management's overt policy is that safety is a top priority (Zohar & Luria, 2004).

Authors Patterson, West, Shackleton, Dawson, Lawthom, Maitlis, Robinson and Wallace (2005) developed and validated a multi-dimensional measure of organisational climate, the Organizational (sic) Climate Measure (OCM). Interestingly however it is also based on the competing values model of Quinn and Rohrbaugh used elsewhere as a foundation for measuring organisational culture. The authors point out that the dominant approach had been to define climate as employees' shared perceptions of organisational events, practices and procedures.

Patterson et al. (2005) also submit that the terms culture and climate are often used interchangeably. They further point out that in their view there is no doubt that climate and culture are similar concepts in that they both measure employees' experiences of their organisations. Drawing on the work of Schneider (2000) the authors propose that organisational climate represents the things that happen to employees in an organisation and is behaviorally orientated. Organisational culture, in contrast, comes to light when employees are asked why these patterns exist. This question is answered in relation to shared values, common assumptions and patterns of belief held by the organisation's members (Patterson et al., 2005).

So it can be seen from the literature that culture and climate are often used interchangeably, and moreover are even confused as constructs. However the general consensus seems to be that organisational climate refers to behavioural and attitudinal tendencies whereas culture consists of more fundamental values and belief systems. While we will go on to explore the literature examining the effect of culture on various performance measures, it is not apparent whether there is a direct correlation between movements in culture and movements in climate within an organisation. This paper intends to pursue that link.

In his book " Coaching on the axis; working with complexity in business and executive coaching" Kahn (2014) refers to the complexity of culture, and quotes Schein by saying that cultural forces are powerful because they operate outside of our awareness.

Kahn proposes the generalist view that culture relates to all aspects of organised life and justifies this by aligning it with systems thinking. He states that culture is something that an organisation is; it emerges from social interactions, as the product of

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negotiated and shared symbols and meanings" (Kahn, 2014).

Kahn goes on to point out that although not all systems are cultures, all cultures can in fact be viewed as complex systems, and so "systems theory and cultural theory prove excellent siblings" (Kahn, 2014, pg 23). He then draws on Schein (2004) to explain that culture evolves from the human process of learning and problem solving, by addressing two problems:

- External adaption – surviving in the external environment
- Internal integration – the capacity of the group to work together to maintain itself into the future

He concludes saying that "strong organisations tend to be high performing and more cohesive in that strategy is more aligned across business units, employees intrinsically motivated and talent more committed and loyal" (Kahn, 2014, pg 29). It is this principle that serves as the foundation of organisational culture surveys, including the Denison Survey.

3.3. Does Organisational Culture Impact on the Performance of the Organisation?

From a business effectiveness point of view, it is important to relate organisational culture, the effect thereof, and it's measurement to the performance of an organisation. Each of the following facets of organisational culture has been the subject of research.

3.3.1. Relationship between Organisational Culture and Performance

Shahzad, Iqbal and Gulzar (2013) examined the link between organisational culture and employee performance, albeit in software houses in Pakistan. Analysing both primary and secondary data they came to the conclusion that there is a positive relationship between organisational culture and employee performance.

Kim Jean Lee and Yu (2004) sought to investigate the possible relationships between corporate culture and organisational performance. Their research was two-fold, firstly to assess the validity of the culture construct, and secondly to examine the link between performance and culture. The results of their factor analysis and reliability tests found that a distinct set of cultural dimensions did exist and that furthermore they

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could be operationalised along distinct, repeatable dimensions. Regarding the link between culture and performance, while they concluded that organisational culture does indeed influence performance, surprisingly the link could only be established in certain industries (Kim Jean Lee & Yu, 2004).

In his own research notes, Daniel Denison sets out to prove the link between organisation culture and performance, submitting that an effective organisational culture can provide a competitive advantage to an organisation. Using the data collected by Denison Consulting from 127 public companies, they found a definite correlation between culture and performance. The top 25% of performers in culture had an average Return on Assets (ROA) of 3.5%, sales growth of 24.8% and a market to book ratio of 4.0. On the other hand the bottom 25% of companies surveyed had an ROA of only 1.2%, sales growth of 7.5% and a market to book ratio of 2.5, all scores significantly lower. This trend was monitored over a period of four years after the Denison Survey was conducted and the same results held true over that period. The conclusion drawn by the author was that culture has not only a short-term impact on performance, but that lasting effects are evident as well (Denison, 2012).

In their study "Managing knowledge: the link between organizational culture and learning", Lopez, Peon and Ordas (2004) sought to understand how the organisation's culture influenced knowledge management, organisational learning and ultimately company performance. The study was conducted among 195 Spanish firms and their findings were positive. They found that a collaborative culture encouraged organisational learning which in turn had a positive effect on the performance of the business. However in expressing possible limitations they did admit that they had assumed a casual flow from collaborative culture to improved performance. It was entirely possible that the process could have occurred in the reverse, in that good company performance may have resulted in a collaborative culture.

Xenikou and Simosi (2006) examined the relationship between transformational leadership and organisational culture on business unit performance. In a study carried out in the Greek financial sector, they found a direct relationship between adaptive cultural orientations and performance. Moreover they established that transformational leadership created an achievement orientation which in turn led to an improvement in company performance.

This was supported by a study conducted by Slater, Olson, and Finnegan (2011) who,

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using configuration theory, showed that cultural orientations may play a role in creating superior performance. Their study specifically showed that a match between the culture of the marketing organisation and the firm's business strategy is in fact associated with superior performance of the company.

There are however a number of studies that find the link between organisational culture and performance weak if not non-existent.

Most recently, Shehu and Mahmood (2014) researched the effect of, among other things, organisational culture on the performance of small and medium enterprises (SMEs). In their quantitative study surveying 640 respondents in Nigerian SMEs they could find no link between organisational culture and business performance. They did however point out that the study had limitations in that the data were only collected at a point in time. They noted that a different result may have been reached in a longitudinal study.

Cho, Kim, Park and Cho (2013), found that there is a significant causal relationship between learning orientation, organisational learning and service quality. It is their assertion that employees exhibit an active learning behaviour when they are aware of the importance of learning and further commit to it when there is a common vision shared among members towards learning. Based on this they contend that there is a relationship between organisational culture and service quality (Cho, Kim, Park, & Cho, 2013).

Further work on the relationship between organisational culture and customer relationship management has recently been carried out in Australia. Iriana, Buttle and Ang (2013) surveyed 99 different organisations with customer relationship management (CRM) systems and concluded that organisational culture is a significant driver of CRM outcomes. These were measured in terms of a number of financial matrices which exhibited positive outcomes associated with improved CRM results (Iriana, Buttle, & Ang, 2013).

The positive effect of organisational culture is not limited to CRM or service quality. Similar recent studies have been conducted into the link between culture and manufacturing efficiency. Su, Yang and Yang (2012) conducted research on this link and were able to conclude that the fit between organisational culture and manufacturing strategy is not only critical to the success of the firm, but provides an

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important predictor of firm performance (Su, Yang, & Yang, 2012).

3.3.2. Organisational Culture and Leadership

With regard to the actual characteristics of a leader and the link to organisational culture, Giberson, Resick, Dickson, Mitchelson, Randall and Clark (2009) contended that while the relationship between leadership and culture is a fundamental assumption in organisational behaviour, there was little empirical evidence to back this up. They set out to research the link between a Chief Executive Officer's characteristics and the organisational culture of his firm and concluded that several of the CEO's personality traits were significantly related to cultural values held by employees. Specifically agreeableness and emotional stability appeared to have important links to cultural values (Giberson et al., 2009).

Cardon (2008) develops the proposal that passion is a central element in the entrepreneurial process. In her research she develops a model that demonstrates that passion can be transferred from the entrepreneur to employees. "Passion has been argued to have strong effects on the creativity, persistence, and absorption of entrepreneurs" (Cardon, 2008). She does not however consider the impact of the withdrawal of the entrepreneur, and whether this has a negative impact on the creativity and persistence of employees.

Interestingly enough, Detert, Schroeder and Murial (2000) set out to establish a conceptual framework linking culture and improvement initiatives in organisations. In so doing they provided a comprehensive synthesis of organisational culture literature and developed a framework of culture dimensions. However by their own admission the work was far from complete and they appealed to academics to "replace anecdotes, intuition and vague statements with more formal theory and empirical evidence" (Detert, Schroeder, & Mauriel, 2000, p.859).

3.4. Measurement of Organisational Culture

One of the seminal authors who proposed a framework for the measurement of organisational culture was Quinn (1988) whose work "Beyond rational management: Mastering the paradoxes and competing demands of high performance" first proposed the Competing Values Framework. This model has been adapted and updated, and used repeatedly in the measurement of organisational culture in various contexts.

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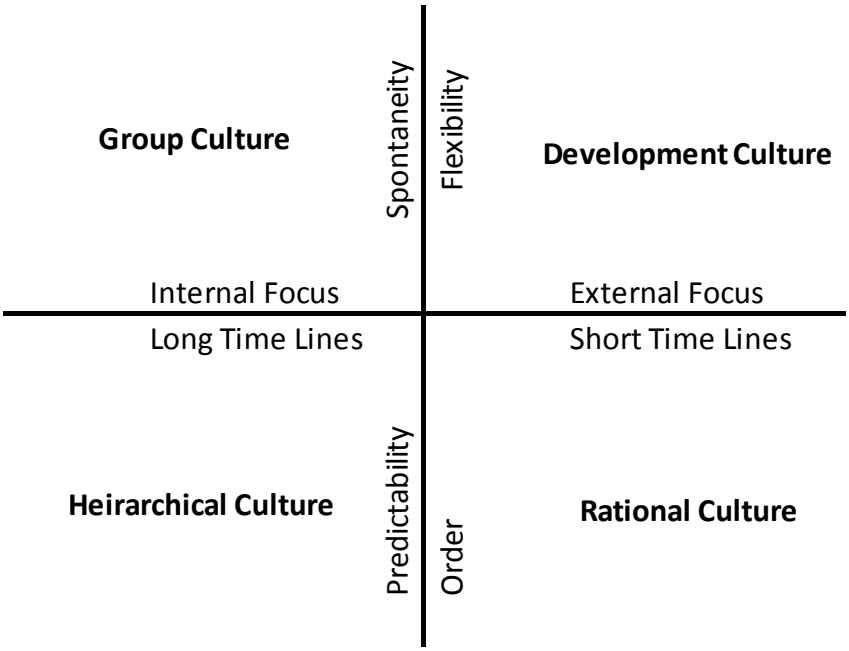
Quinn (1988) explained that there are competing tensions and conflicts in any human system. Primarily there is conflict between stability and change, as well as between the internal organisation and the external environment.

The concept can be better illustrated in an update proposed by Denison and Spreitzer (1991) who presented four studies of organisational culture that are rooted in the Competing Values Model (Quinn, 1988). Denison *et al* built on the hypothesis that there is a link between "underlying values, organisational structures and individual meaning" (pg 2) which must first be understood before examining the changes within the organisation. Denison *et al* further portrayed the Conflicting Values Model along two primary axes with opposing cultural constructs on either end of the axes. This resulted in the four distinct cultural grouping quadrants that are represented in Figure 1 below.

Figure 1: Competing Values Model by Denison *et al*



Adapted from Denison *et al* (1991)

From Figure 1 it can clearly be seen that in terms of the Competing Values Model, an organisation can be categorised in one of the four cultural quadrants, being group, development, hierarchical and rational in culture, these classifications being dependent on whether an organisation is considered orderly or flexible, and whether they are classified as internally or externally focused.

The Competing Values Model was taken a step further by van Muijen (1999) who

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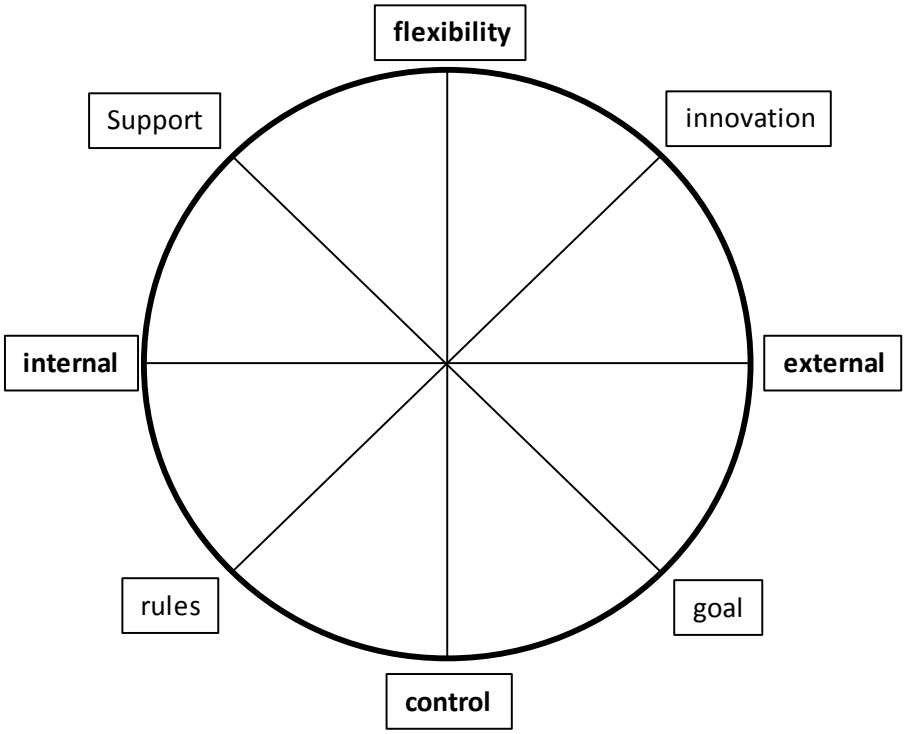
proposed the Focus Questionnaire as a means of measuring organisational culture. Although the terminology differs slightly, van Muijen proposed a very similar structure to Denison et al. Where the latter refers to group, development, hierarchical and rational cultures, van Muijen talks about support, innovation, rules and goal orientation. However the sentiment contained in each is similar enough as to be considered interchangeable.

Figure 2: Competing Values Model by van Muijen



Source: van Muijen (1999)

3.5. Reliability of Measures of Organisational Culture

It is acknowledged that the quality of instruments available to assess organisational culture varies widely. Denison, Nieminen, and Kotrba (2014) described three specific tests needed to establish a tool's reliability and validity:

1. **Psychometrics:** the test must demonstrate that the items function appropriately and that the data supports the structuring of the items into the specific dimensions being measured.

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2. **Aggregation:** the tool being used must demonstrate a strong agreement and reliability between individual measures of culture and the aggregated measure for the whole organisation.
3. **Link to performance:** where a tool is designed to demonstrate the link between organisational culture and performance, this link needs to be supported by statistical relationships between these two constructs.

Using these criteria the authors put forward evidence supporting the validity of the Denison Model (Denison et al., 2014). It should be noted however that the authors (including Denison) are all consultants with Denison consulting, and while there is no reason to doubt the validity of their assertions, a reader should nevertheless be aware of the potential for bias.

3.6. Measuring Organisational Climate

According to Patterson et al. (2005), there is a significant lack of theoretical bases for many climate instruments, and this has resulted in much variation in climate dimensions employed. They add that climate surveys tend to focus only on managerial positions and that any measure used should assess the experiences of all employees at all levels in the organisation.

The authors also draw on the Competing Values Model as a classical theoretical framework on which to build a measure of organisational climate. They then identified four climate dimensions based on four major schools of study of organisational effectiveness, and then related a number of sub-dimensions to each quadrant:

- The Human Relations Model (internal focus, flexible orientation)
    - Employee welfare
    - Autonomy
    - Participation
    - Communication
    - Emphasis on training
    - Integration
    - Supervisory support

- The Internal Processes Model (internal focus , control orientation)
    - Formalisation

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- Tradition

- The Open Systems Model (external focus and flexible orientation)
  - Flexibility
  - Innovation
  - Outward focus
  - Reflexivity

- The Rational Goal Model (external focus and control orientation)
  - Clarity of organisational goals
  - Effort
  - Efficiency
  - Quality
  - Pressure to produce
  - Performance feedback

These dimensions were combined into the Organisational Climate Model (OCD) (Patterson et al., 2005). It can be observed that the above overall quadrants are the same as those used in the Denison Model to measure organisational culture. This supports our earlier assertion that organisational climate can be regarded as a sub-set of organisational culture, or part of the overall "system".

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4. Methodology

4.1. Introduction

This research study was intended to explore the changes in organisational culture, organisational climate and the performance of an organisation. To understand this we performed a longitudinal investigation into changes in company culture and/or climate over time, as well as the performance of the organisation. The study was conducted on an exploratory basis using both descriptive analysis as well as quantitative analysis.

In the context of this study, the population consisted of all airlines or similar companies operating in Southern Africa. It is anticipated that the lessons learned from the study of our subject could be used to make inferences about changes in organisational culture and climate in other, similar organisations and any effect it may have on the performance of the organisation.

4.2. Data Sources

The researcher relied on five sources of data for this research, three of which were secondary (pre-existing) data and two of which were primary (new) data.

1. The first source of secondary data was the Denison Organisational Culture Survey conducted by Denison Consulting at Comair in 2011.
2. The second source of secondary data were the Comair Think Vision Surveys which measured the internal climate at Comair since 2007.
3. A Denison Organisational Culture Survey commissioned by the author in 2014 served as the third source of data.
4. The research also made use of the publically available Annual Reports of Comair.
5. And lastly the researcher supplemented the above with interviews conducted with senior personnel at Comair.

4.3. The Denison Organisational Culture Survey

The Denison Organisational Culture Survey (DOCS) is conducted by Denison Consulting based in Ann Arbour, Michigan in the USA. Denison Consulting was founded by Dr Daniel Denison and William S Neale in 1998 (Denison Consulting, 2014).

The DOCS is designed to assess an organisation's strengths and weaknesses as they

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apply to organisational performance. The survey has 60 items that measure specific aspects of an organisation's culture in each of the four traits and twelve management practices outlined in the Denison Model The model follows the structure of the Competing Values Model developed by Quinn (Quinn, 1988). However it is important to note that the Denison Model does not propose that the four traits are mutually exclusive, but rather that a successful company will exhibit higher scores in all spheres. For a complete list of the questions contained in the survey, refer to Appendix A.

Denison then uses normative scoring to present survey results. The normative database provides clients with information about how their organisation scored on the DOCS relative to other organisations. The scores are provided in the form of percentiles which indicate the percent of organisations in the database that scored the same or lower than the target organisation on a given item or index. This method enables the company to benchmark its culture scores against other higher and lower-performing organisations worldwide (Denison Consulting, 2013).

As of 2013, there were 1084 organisations, rated by over 480 000 respondents included in the database from a wide variety of industries including manufacturing, professional services, financial services, health care, educational institutions, government and non-profit. The database includes 40 Fortune 500 companies and 291 multinational organisations (Denison Consulting, 2013).

The DOCS is presented using four main traits each of which is broken down into a further three management practices.

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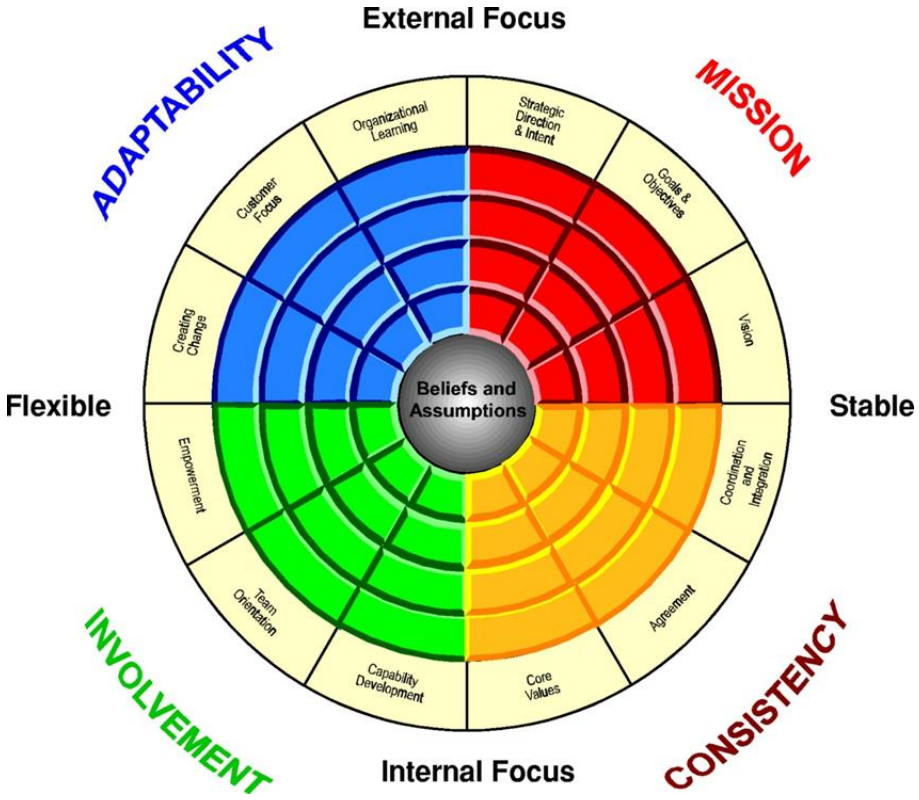
Figure 3 Denison Organisational Culture Survey Model



(Denison Consulting, 2014)

The four quadrants represent the four fundamental traits found in all successful organisations. Each quadrant is sub-divided into sub-traits or management practices:

a. **Adaptability**: represents the organisations ability to perceive and adapt to a changing environment.
    i. **Creating change:** the organisation welcomes new ideas and is willing to try new approaches.
    ii. **Customer focus:** employees recognise the need to serve both internal and external customers and continually seek ways to improve this.
    iii. **Organisational learning:** "thoughtful" risk taking is encouraged and lessons will be learned from both successes and failures.

b. **Mission:** high performing organisations have a clear mission that tells employees why they are doing the work they do and how the work they do contributes to the why.
    i. **Strategic direction and intent:** refers to the presence of multi-year strategies.
    ii. **Goals and objectives:** short term, specific goals that connect

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employees' every-day activities to the vision and strategy.

iii. Vision: the ultimate reason you are in business, shows what you intend to achieve

c. **Consistency**: provides a central source of integration, coordination and control. It helps an organisation develop systems that create an internal system of governance based on consensual support.
    i. **Core values:** refers to the presence of a clear set of core values that enable consistent decisions and behaviour.
    ii. **Agreement:** by engaging in dialogue and getting multiple perspectives on the table, a team can reach agreement.
    iii. **Coordination and integration**: Employees understand the impact of their work and make sure that it is integrated and coordinated to serve the organisation as a whole.

d. **Involvement**: represents the sense of ownership and responsibility. This leads to greater commitment to the organisation and an increased capacity for autonomy.
    i. **Empowerment:** they clarify those areas where employees can make decisions, have input, or those areas that are beyond their scope of responsibility.
    ii. **Team orientation:** teamwork is encouraged so that creative ideas are captured and employees support one another in implementation.
    iii. **Capability development:** includes training, coaching and giving employees exposure to new roles and responsibilities. (Denison Consulting, 2014)

Denison himself tested the correlation between organisation culture and economic performance the details of which are published in his Research Notes. He found that there was a positive correlation between the performance of an organisation and the ranking on the Denison Model and that this trend endured over time (Denison, 2012).

4.3.1. Sampling Method and Size – Denison Organisational Culture Survey

The 2011 Denison Organisational Culture Survey is a pre-existing survey with no implications for sampling. The sample response rate for DOCS 2011 was 53 employees (Gotham Culture, 2011).

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For the 2014 DOCS, the decision was to survey senior levels within the company as these employees were the most likely to have been impacted in the Sabre implementation in 2011/12, and as such would have been involved in the first DOCS. Accordingly the author obtained a complete list of all employees at Comair that fall into either the Executive Grouping, or the Direct Report Grouping. A random sample of 30 employees was selected from this list and was forwarded to Denison Consulting for the survey. A response was received from 25 participants. Note that due to the confidential nature of this survey and the fact that it is administered by an outside party, it was not possible to determine which employees responded to either the 2011 or the 2014 survey. It was therefore not possible to establish whether the two surveys were dependent or independent.

Specifically concerning the DOCS 2014, the survey was administered by Denison Consulting from their offices in Anne Arbour, Michigan. The sample selected was forwarded to Denison Consulting together with the e mail addresses of these employees. Denison Consulting then mailed out a link to their website which took the employee directly to the proprietary survey. Care was taken to ensure that the survey conducted in 2014 contained the same questions as that conducted in 2011 (See Appendix A).

Denison consulting does not generally provide raw data or specific detail for their surveys. However given the academic nature of this research, Denison agreed to provide the raw data on signature of a non-disclosure agreement (attached at Appendix G). It must also be noted that the raw data does not include information from the Denison normative database and as such no inferences about Comair's results should be drawn in relation to other companies present in the database from this raw data. In order to assess Comair against its peers on the database, the actual Denison reports were also compared.

4.3.2. Methodology: Denison Organisational Culture Survey

We wished to assess whether the organisational culture at Comair as measured through the DOCS, an externally administered survey, had changed significantly in the period under review.

Hypothesis 1: *The organisational culture at Comair as measured externally using the DOCS changed in the period under review.*

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The first step in analysing the DOCS data was to calculate the Cronbach's Alpha for each variable. The Cronbach's Alpha's is a measure of the internal consistency or reliability of a set of items. As a general rule, an alpha of between 0.6 and 0.7 is regarded as acceptable reliability and 0.8 and above is considered good reliability (Salkind, 2010). In the case of the Denison Survey data the alphas for each variable were all above 0.6. The results are contained at Appendix C.

Following this, each sub-construct of the survey was analysed and a mean, standard deviation, 25th percentile, median and 75th percentile were calculated. The mean is also known as the average, and is calculated by summing all the scores and dividing the total by the numbers of scores.

In order to obtain a meaningful comparison between the 2011 data and the 2014 data, the means of each construct were compared, as well as the means of each of the four fundamental traits displayed in Denison's model.

Finally, the results reported by Denison themselves in 2011 and 2014 were compared. These reports were prepared using the Denison normative database, hence the additional comparison.

4.4. Comair Think Vision Climate Survey

The Comair Think Vision Survey (CTVCS) is an internal survey within the company that has been running since 2007. From 2007 until 2010 it was administered by an external consultant, Blueprint Consulting, but as from 2011 it was brought in-house and administered internally (Van der Ryst, 2014).

The survey was developed in conjunction with employees through workshops and focus groups at all levels. Through a process of dialogue the participants came up 28 behaviours, 14 of which were positive and 14 of which were negative. These were arranged into a formula in which the positive attributes (of which they desired more) are represented in the numerator, and the negative attributes (of which they desired less) were placed in the denominator (Liebetrau, 2014)(Van der Ryst, 2014). The net result generates a value attributable to the company.

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Figure 4: Comair Climate Principles Equation

It is acknowledged that the diagram is too small to be clearly legible and is reproduced here purely for the purpose of illustrating the equation. The principles or attributes are listed below:

- Top line principles – those of which we desire more:
  - Safety first
  - A great place to work
  - A passion for service
  - Financially sound
  - Dignity and respect
  - Teamwork
  - Socially responsible
  - Market leaders
  - High-performing professional people
  - Expansion and growth
  - Pursue operational excellence
  - Inspiring leadership
  - Leveraging leading technology
  - Accountable and responsible

- Bottom line principles – those of which we desire less
  - Arrogance
  - Negative attitudes
  - Bureaucracy
  - Bad planning
  - Damaging our reputation
  - Dropping our standards
  - Dishonesty
  - Inflexible
  - Lack of compliance
  - Accepting mediocrity

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- Broken communication
- Backstabbing and gossip
- Not enough of the right resources
- Favouritism

Further details of each attribute in the equation are contained in Appendix B.

The staff are surveyed annually using a basic Likert scale for each attribute where the options are “yes, neutral or no”. It is worth noting that the response rate for the Think Vision survey conducted in 2014 was 96%, and has not fallen below 85% since 2009 (Comair, 2014b).

4.4.1. Sampling Method and Size – Comair Think Vision Climate Survey

The Think Vision Survey is a pre-existing, or secondary, dataset and as such there is no sampling implication. The 2014 survey elicited 1801 responses out of a pool of approximately 2000 employees (Comair, 2014b).

4.4.2. Methodology – Comair Think Vision Climate Survey

We wished to assess whether the climate at Comair as measured through the CTVCS had changed significantly in the period under review.

Hypothesis 2: *The climate at Comair as measured internally using the CTVCS changed in the period under review.*

A spreadsheet containing the raw data collected in the CTVCS from 2011 to 2014 was obtained as secondary data. As the 2011 data contained no personal information, this data was discarded as it was not possible to determine whether the samples for this year were dependent or independent of those in the following years. The data for years 2012 to 2014 did contain personal identifiers so it was possible to determine that many of the same employees had answered the survey in each of the successive years. Dependent data exists when we measure the same item (or person) in subsequent surveys or analyses, and the responses generated in subsequent surveys are dependent on responses given by that person previously (Flom, 2014). For this reason we could therefore consider the data from the three consecutive surveys as dependent.

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To assess whether there was a meaningful change in climate from one year to another, the t-test for dependent samples was conducted. The t-test for dependent samples is used when a single group of the same subjects is being studied under two conditions, or at different points in time (Salkind, 2010).

This test was done for each construct showing the difference in score between 2012 and 2013, 2013 and 2014, and finally 2012 and 2014.

$H_0: \mu_{diff} = 0$ (the mean difference between ratings of individuals does not differ from zero)
$H_1: \mu_{diff} \neq 0$ (the mean difference between ratings of individuals differs from zero)

The level of risk was set at 0.05. This means that there is a probability of less than 5% on any one test that the null hypothesis was rejected in error (Salkind, 2010). The t-statistic was calculated and the p-value was calculated based on the t-statistic. Therefore if the p-value was less than 0.05, H_0 was rejected. (there was a statistically significant difference between ratings). If the p-value was greater than 0.05, H_0 was not rejected. (the differences between ratings were not statistically significant).

However it must be noted that the samples in the CTVCS were very large which could impact on the results of the test. Even though a result is statistically significant, it may be of low practical significance. In order to be certain that the results were significant Cohen's d statistic was calculated for each item.

d=0.2 (small effect) - low practical significance.
d=0.5 (medium effect) - medium practical significance
d=0.8 (large effect) - high practical significance

Secondly descriptive statistics were extracted from the raw data of the survey. For each variable, the mean, the standard deviation, the 25th percentile, the median and the 75th percentile were calculated. Figure 4 is an example of the calculation of one principle.

Figure 5 Example of descriptive statistics for CTVCS

No	Principle	N	Mean	Std Dev	25th Pctl	Median	75th Pctl
TL1	Safety first	1639	2.5631483	0.6458349	2.00	3.00	3.00

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In order to assess the trend for each principle, the mean of each was compared over the period of three years, 2012, 2013 and 2014. In addition, the percentage change was calculated between 2012 and 2014. Given that the means were also available for the total top-line construct as well as the total bottom line construct, the same calculations were performed for these as well. For a full table of results please refer to Appendix D. The findings are represented graphically in chapter 5 of the journal article.

4.5. Comair Annual Financial Reports

The financial statistics used for the research were gleaned from the publically available and audited Comair Annual Reports.

In order to establish key trends, a summary of the headline numbers was extracted and key financial ratios calculated. The summary of Comair's key financial results is contained at Appendix F.

Hypothesis 3: *Key financial results at Comair changed in the period under review.*

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5. Results

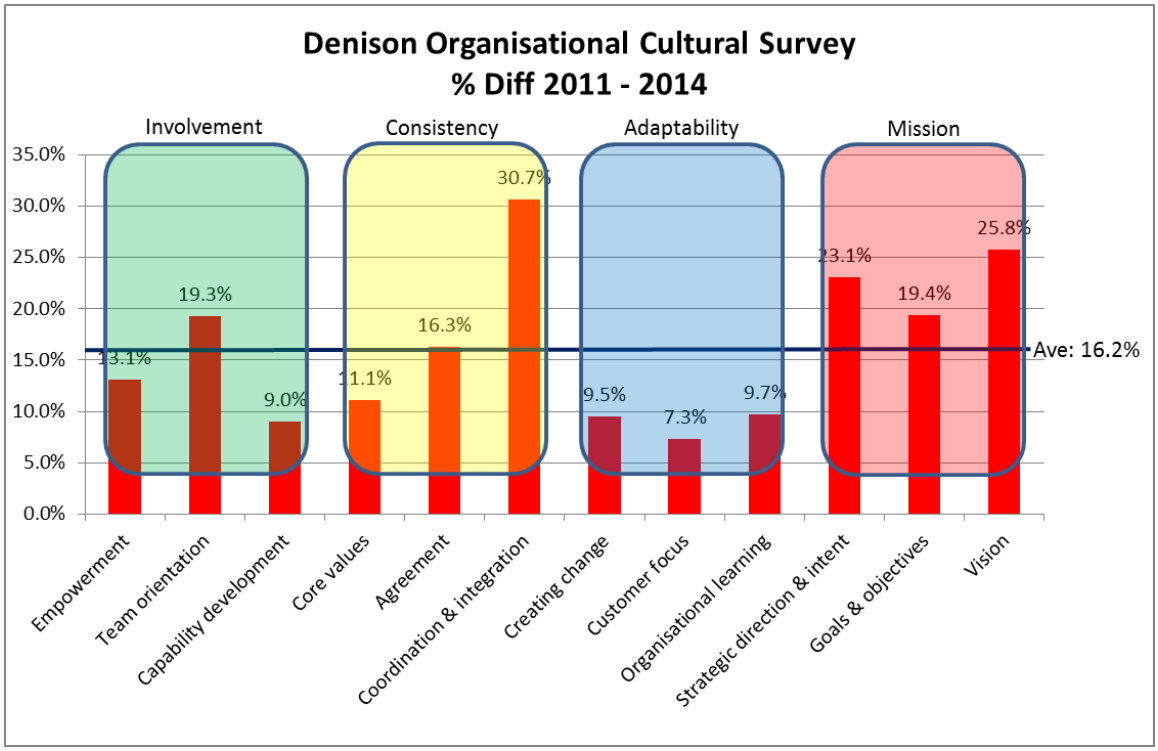
5.1. Denison Organisational Climate Survey

The DOCS conducted in 2011 had 53 respondents while the survey completed in 2014 was answered by 25 employees.

The raw data from each survey was assessed for internal consistency and reliability using Cronbach's Alpha. The surveyed data presented alphas for each variable of at least 0.6 or above. This indicates that the data for each construct as well as for the four overall constructs are considered at least of an acceptable reliability. The results are contained at Appendix C.

Once satisfied that the constructs were reliable, an analysis was prepared of the differences in the means for each construct between 2011 and 2014. The results are represented graphically in Figure 6 below.

Figure 6: DOCS percentage changes from 2011 to 2014.



In addition to the analysis above, the movement in the scores of the essential traits were calculated. The results are contained in Figure 7 below.

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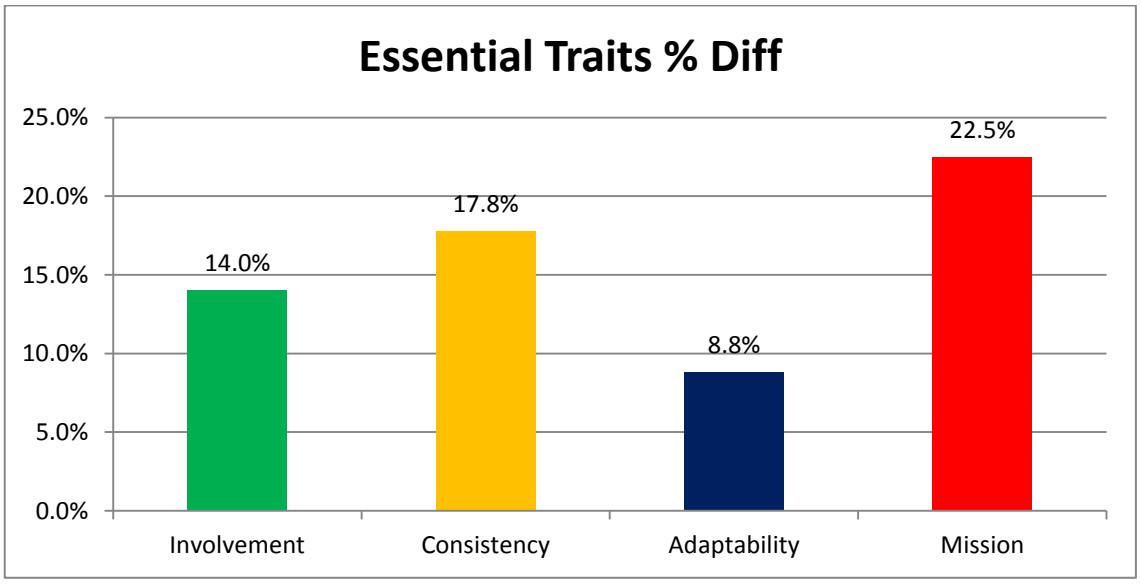
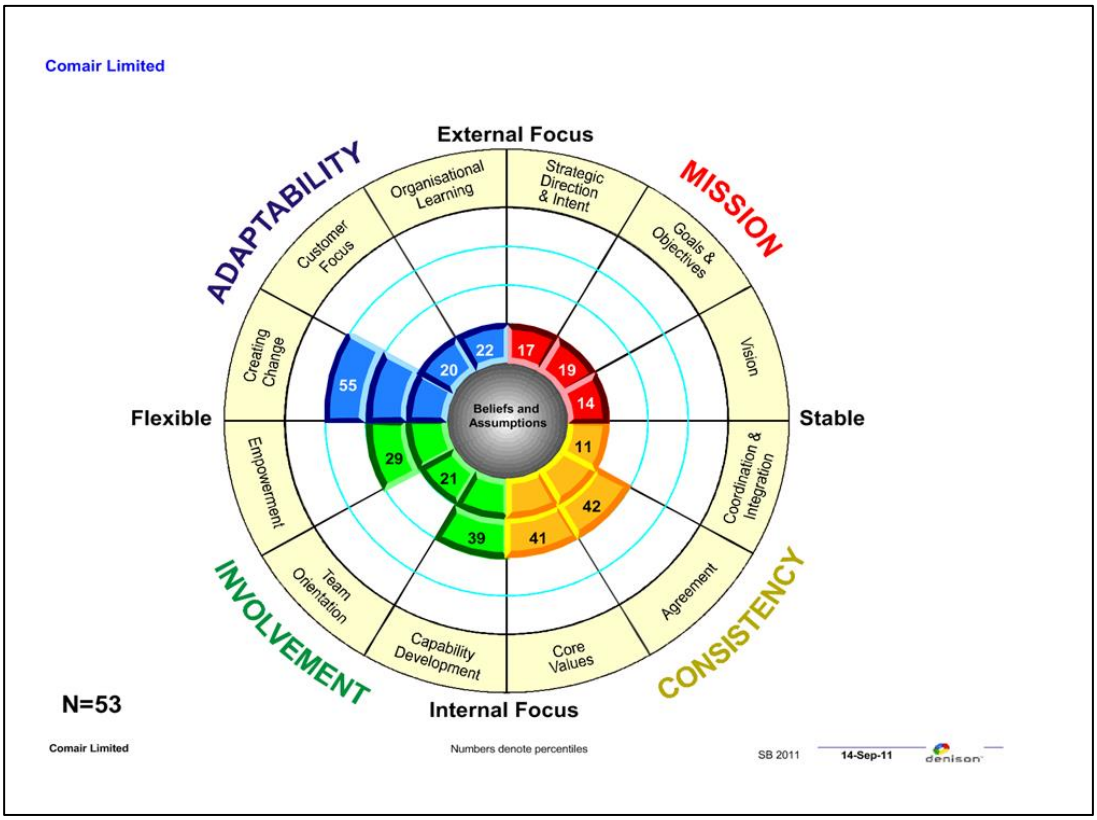
Figure 7: DOCS Essential Traits % Difference



Because the raw data presented in figures 6 and 7 do not make use of the Denison normative database, the findings of Denison are presented below. These are the results of the surveys in 2011 and 2014 respectively and are compiled with reference to their normative database.

Figure 8 Denison Survey 2011



Source: Denison Consulting Comair Survey 2011

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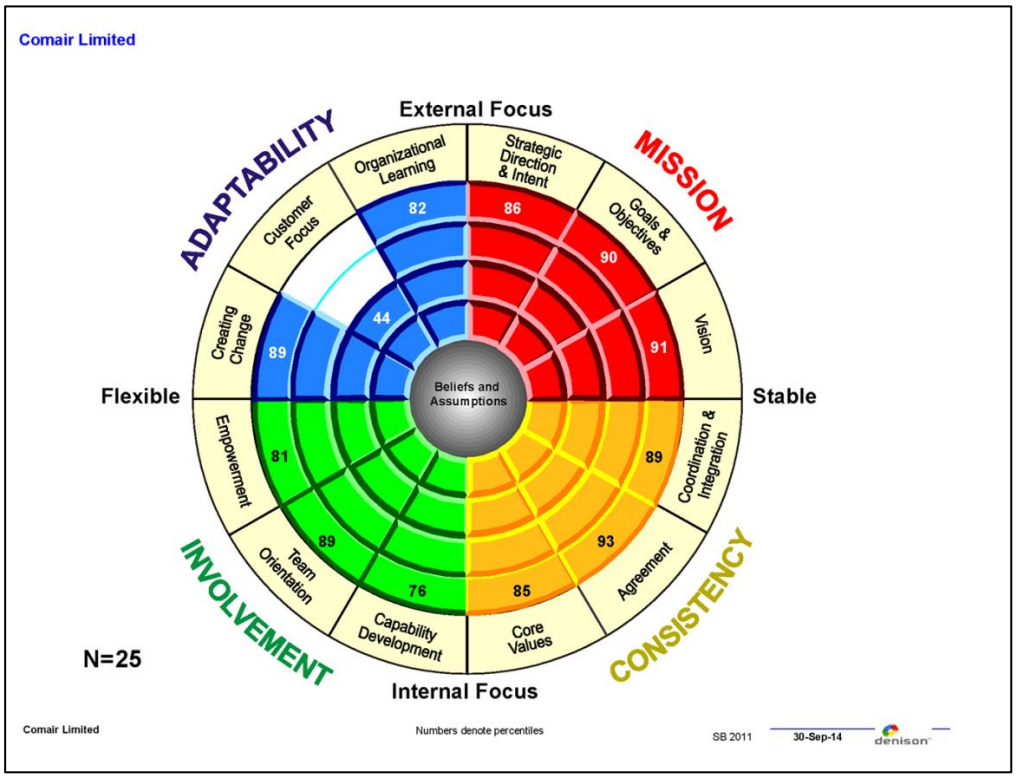
Figure 9: Denison Survey 2014



Source: Denison Consulting Comair Survey 2014

Table 1 Summary of Differences – DOCS 2011 vs 2014

Sphere	Variable	2011	2014	Diff
Involvement	Empowerment	29	81	52
	Team orientation	21	89	68
	Capability development	39	76	37
Consistency	Core values	41	85	44
	Agreement	42	93	51
	Coordination & integration	11	89	78
Adaptability	Creating change	55	89	34
	Customer focus	20	44	24
	Organisational learning	22	82	60
Mission	Strategic direction & intent	17	86	69
	Goals & objectives	19	90	71
	Vision	14	91	77

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5.2. Comair Think Vision Climate Survey

The t-statistic for dependent data was calculated for the data obtained in the three sets from the CTVCS. Ninety t-tests were done on the data, comparing each individual construct for each of the three years to the same construct in each of the other years. Of the 90 tests, 34 constructs presented a p-value of 0.05 or more. Therefore for these 34 constructs we can accept the null hypothesis that there have been no statistically valid differences between the ratings measured.

$H_0: \mu_{diff} = 0$ *(the mean difference between ratings of individuals does not differ from zero)*

For the balance of the 56 constructs measured, a p-value of less than 0.05 was obtained and for that reason we can reject the null hypothesis that there was no statistically valid difference between the ratings (in other words, the construct measured did change in a statistically valid way).

$H_1: \mu_{diff} \neq 0$ *(the mean difference between ratings of individuals differs from zero)*

However as explained in the methodology, the very large sample sizes could have impacted on the results obtained in the t-test. For this reason an additional test was conducted; Cohen's d.

d = 0.2 (small effect) – low practical significance.

d = 0.5 (medium effect) – medium practical significance

d = 0.8 (large effect) – high practical significance.

Of the 56 tests which obtained a p-value of less than 0.05, only 12 had a Cohen's d of more than 0.2. and none presented a value of more than 0.5. We must therefore conclude that the 78 of the 90 tests conducted had no practical significance, and only eight had a low practical significance.

An example of this data is shown in Figure 11:

Figure 10 Example of t-test and Cohen's d

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Variable	Principle	Diff	N	Mean	Std Dev	Std Error	t Value	Pr > |t|	Cohen's d
tl1dif23	Safety first	2012 - 2013	1379	-0.06672	0.672852	0.018119	-3.68	0.0002	0.09915

In this example it can be seen that although the p-value is lower than 0.05, i.e. we reject the null hypothesis that there is no change in this construct, the Cohen's d score of 0.099 indicates that this statistic is considered below the lowest practical significance. The full table is contained in Appendix E. Those lines marked in green have both an acceptable p-value as well as a Cohen's d above 0.2. They are therefore considered between low and medium practical significance.

Understanding the limitations expressed above, the author nevertheless analysed the mean score for each construct for each of the three years. These scores are shown in figures 7 and 8 below:

Figure 11: CTVCS Top line principle trends

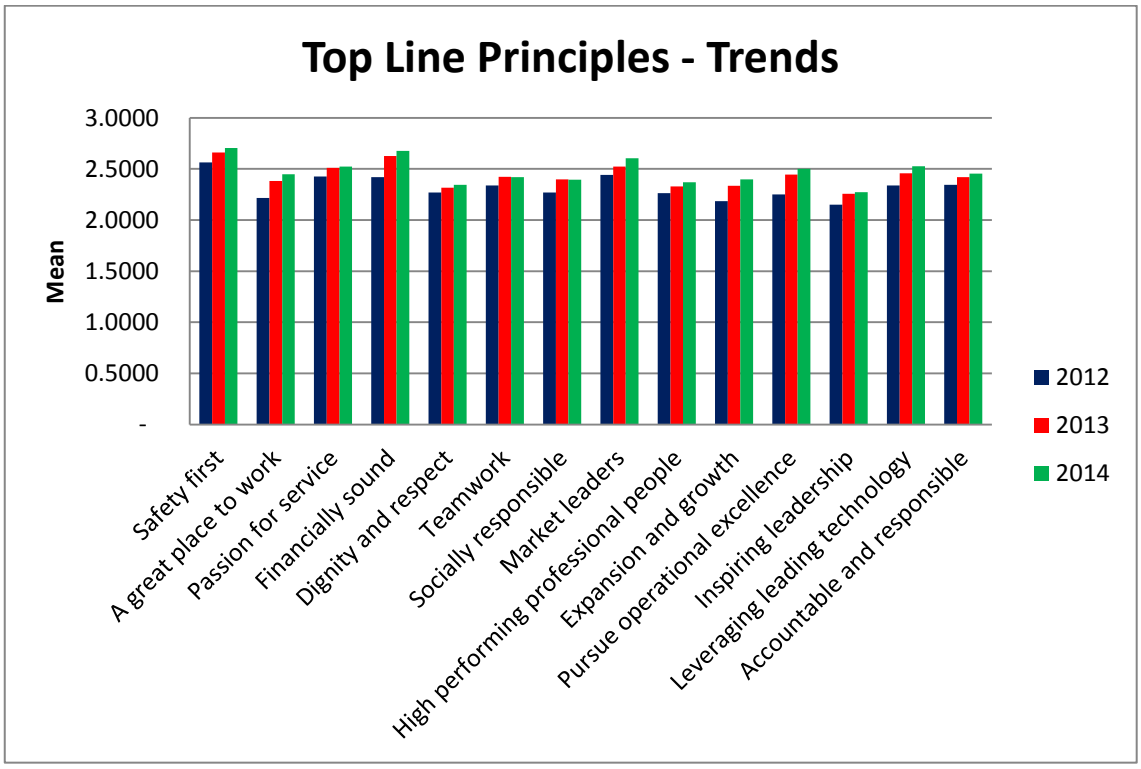

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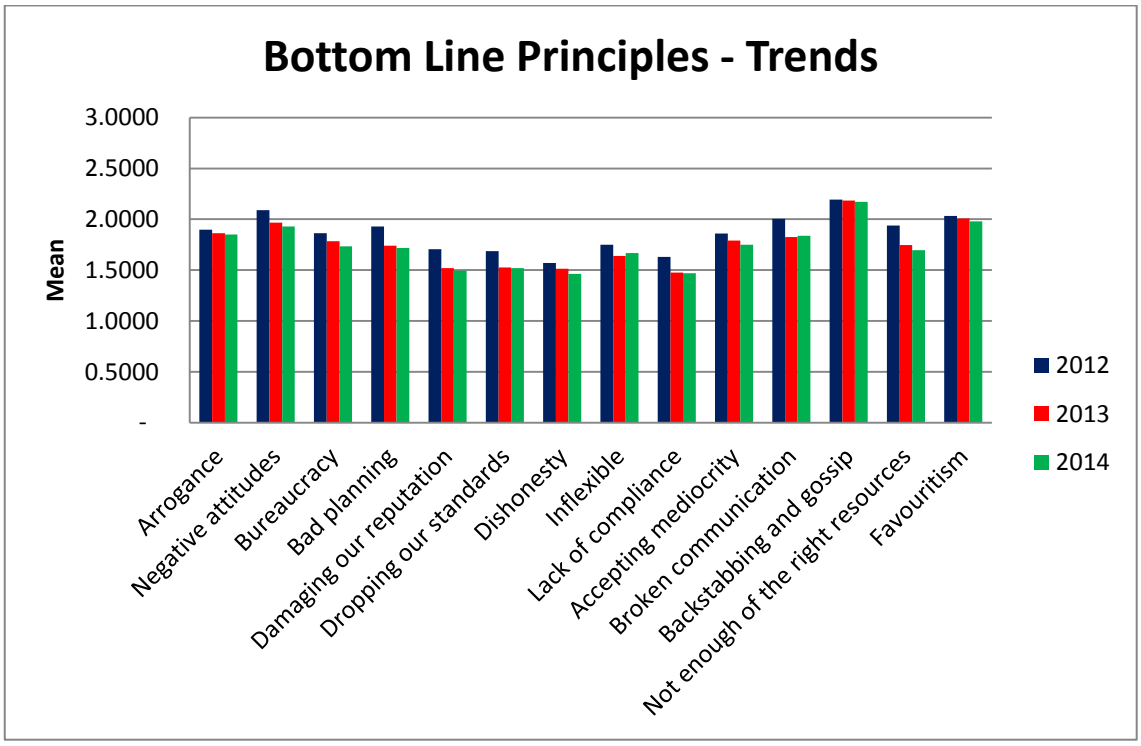
Figure 12: CTVCS Bottom line principle trends



It should be remembered that the principles contained in the CTVCS bottom line are those that the respondents desire less of. Therefore a lower score indicates a lower presence of this negative trait. The decrease over time is therefore a positive development.

In order to further understand developments in the constructs, the difference in the means for each construct were compared from 2012 to 2014. These results are presented in figures 14 and 15 below:

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Figure 13 Top line principles - % improvement

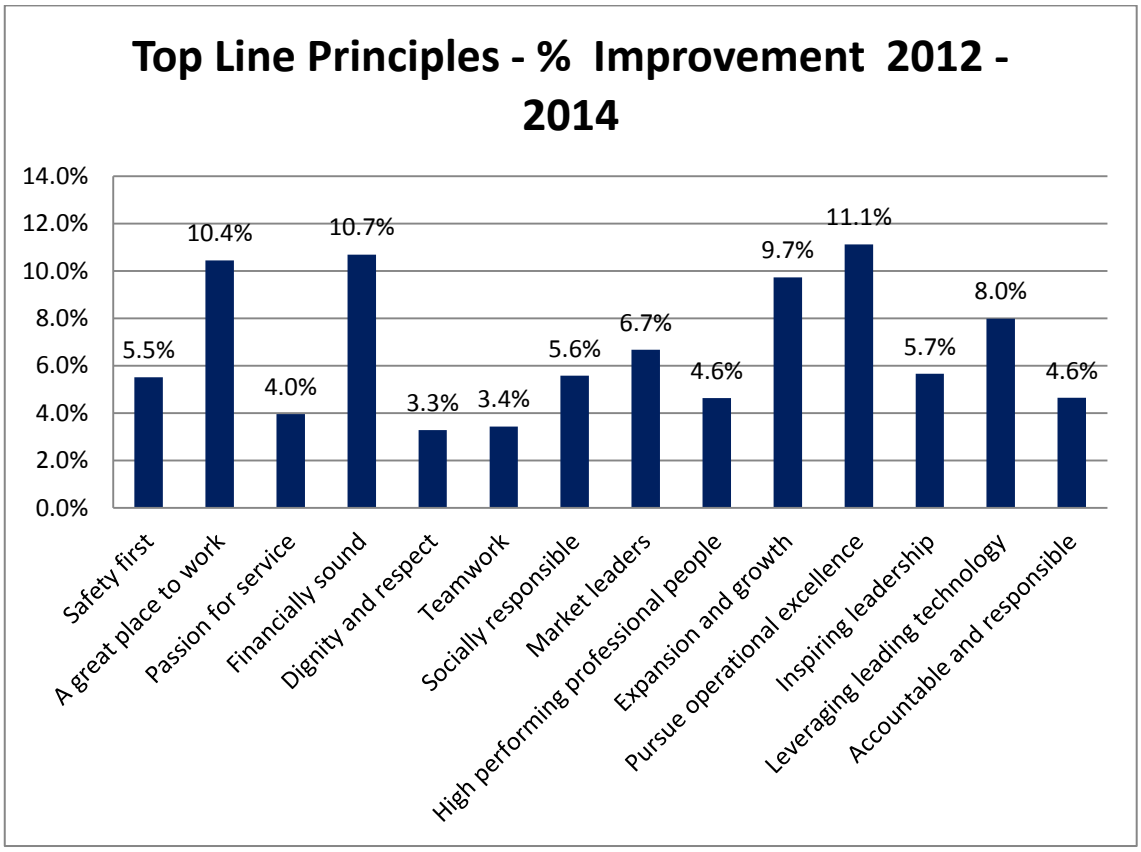
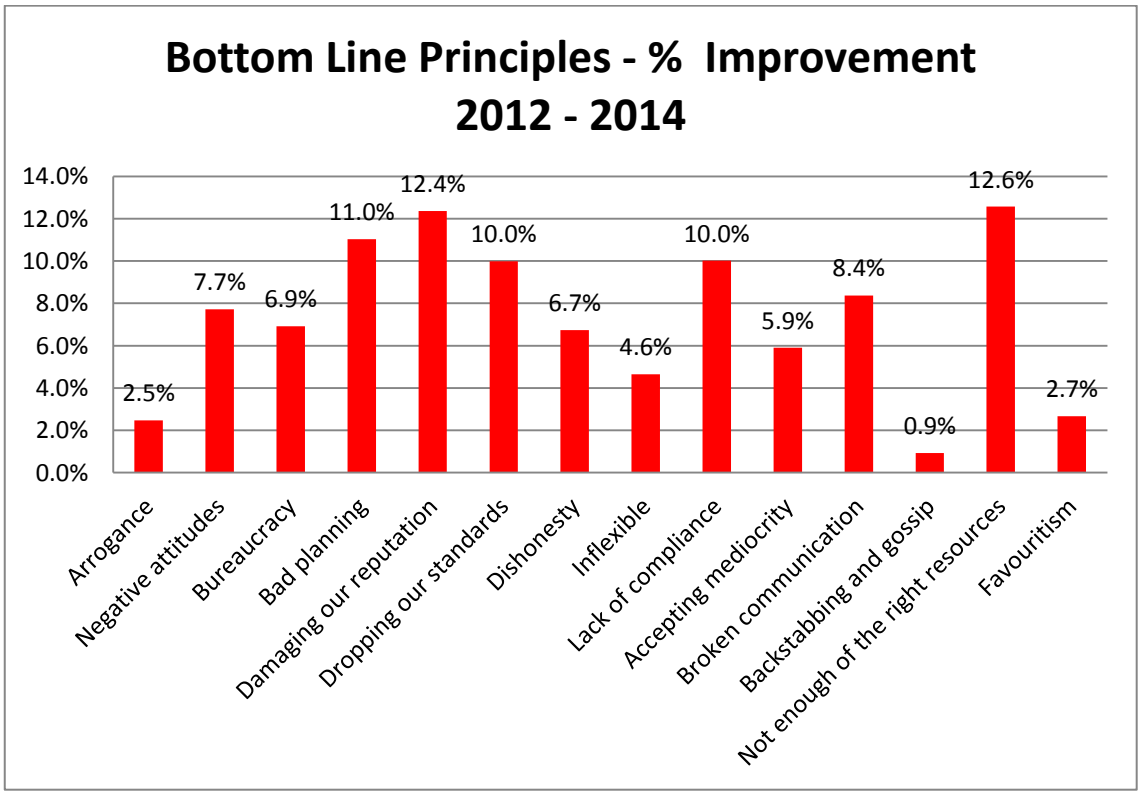


Figure 14: Bottom line principles - % improvement



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The same exercise was repeated for the total top line and bottom line scores:

Figure 15: CTVCS Overall trends

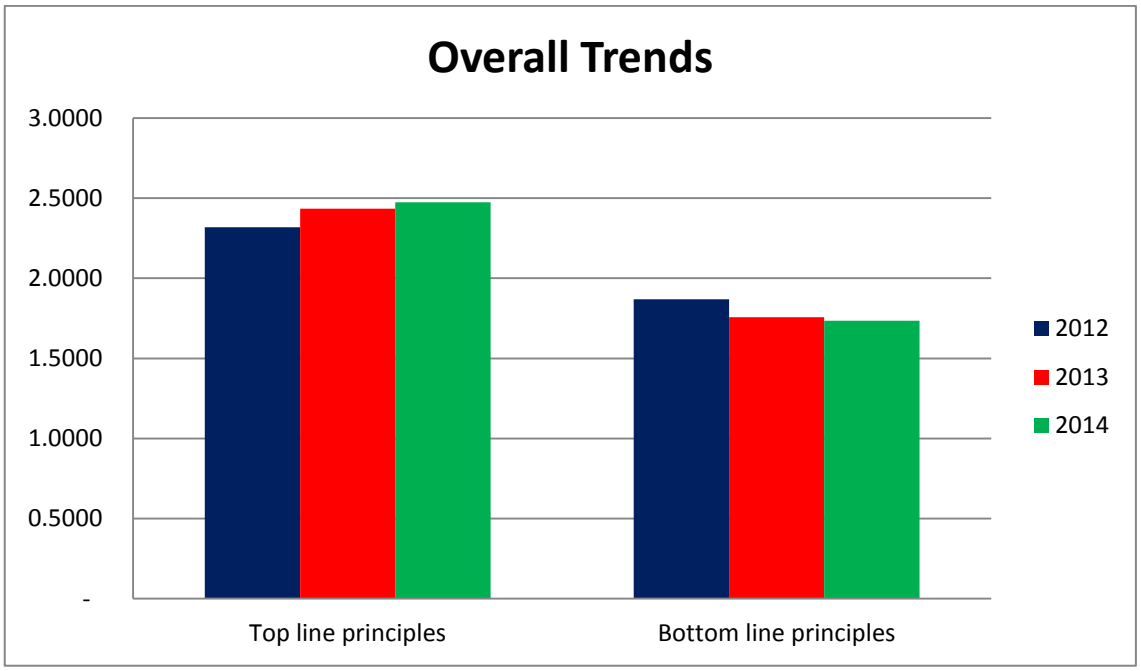
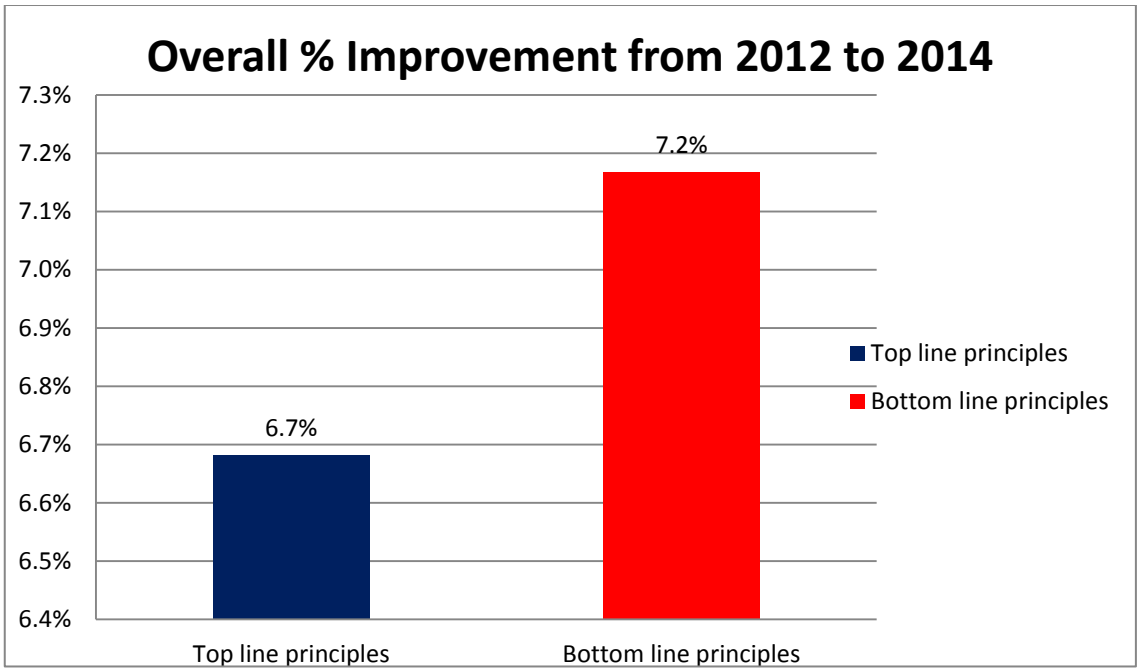


Figure 16: CTVCS Overall % improvements



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5.3. Comair Financial Analysis

The headline numbers for Comair were extracted from the publically available Annual Reports and are reproduced in Appendix F. It should be noted that while the behavioural data ranges from 2011 to 2014, the financial information has been extracted back to 2007. This will enable a proper assessment of trends prior to and during the period under study. From this data, key financial ratios were calculated and these are presented in Table 1 below.

Table 2: Comair headline results

	Comair Ltd							
Key Ratios	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Operating Profit %	7.7%	4.2%	4.2%	4.8%	3.3%	0.5%	6.9%	6.6%
Net Profit %	4.9%	2.3%	2.4%	3.0%	2.1%	0.2%	4.2%	4.2%
Current Ratio			0.87	0.85	0.84	0.59	0.95	0.91
Return on Assets %	N/A	4.8%	4.6%	4.8%	3.7%	0.4%	7.8%	6.9%
Return on Equity %	N/A	14.0%	14.9%	14.4%	10.1%	1.0%	24.8%	25.4%
Debt Ratio	0.63	0.68	0.70	0.64	0.62	0.63	0.72	0.73
Debt Equity Ratio	1.69	2.14	2.29	1.79	1.63	1.71	2.53	2.77

In order to better assess the trends, these ratios have been presented graphically:

Figure 17 Comair revenue

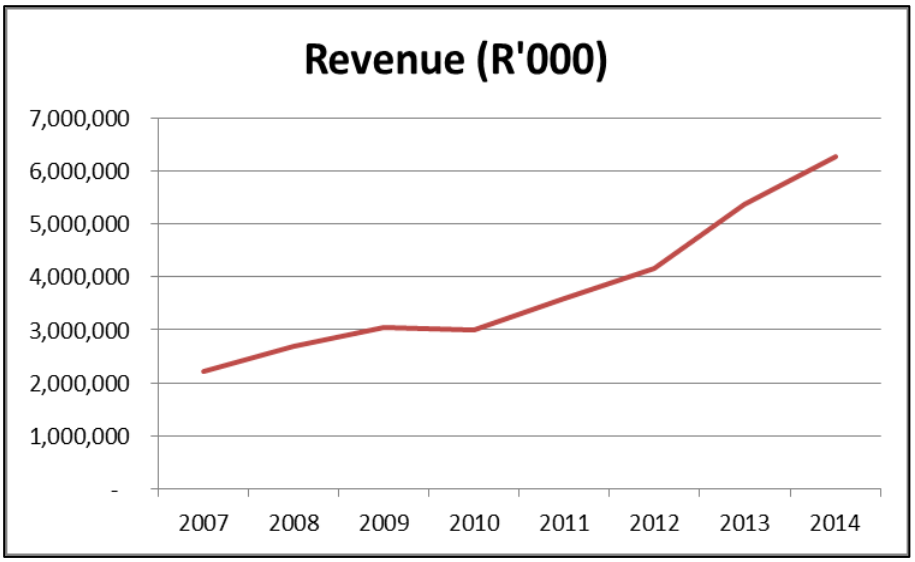

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Figure 18: Comair profit from operations

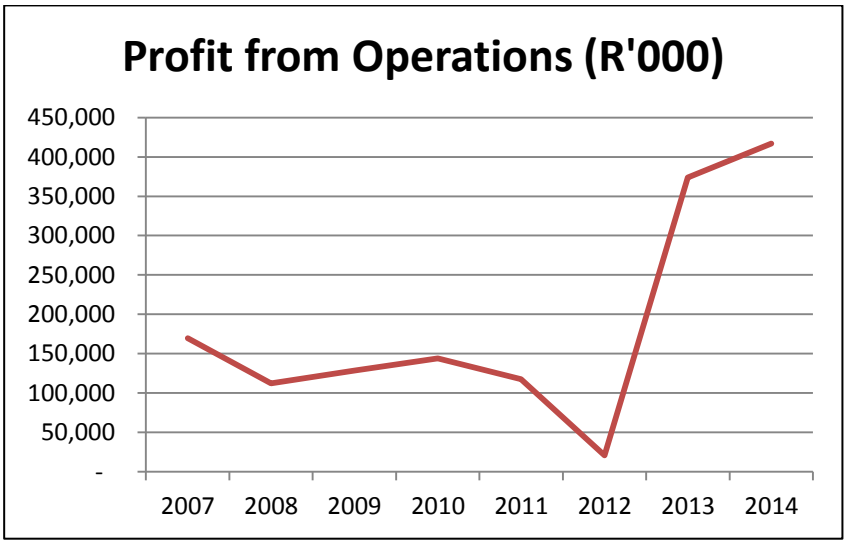

Figure 19: Comair profit after tax

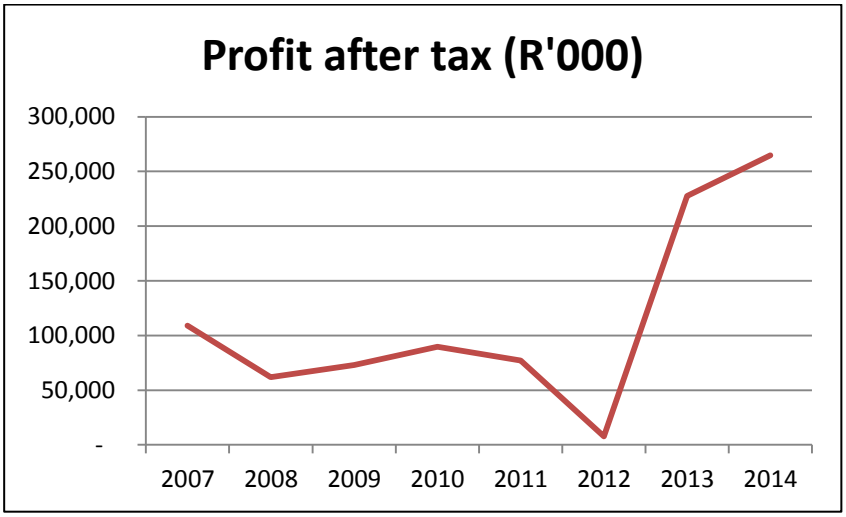

Figure 20: Comair operating profit %

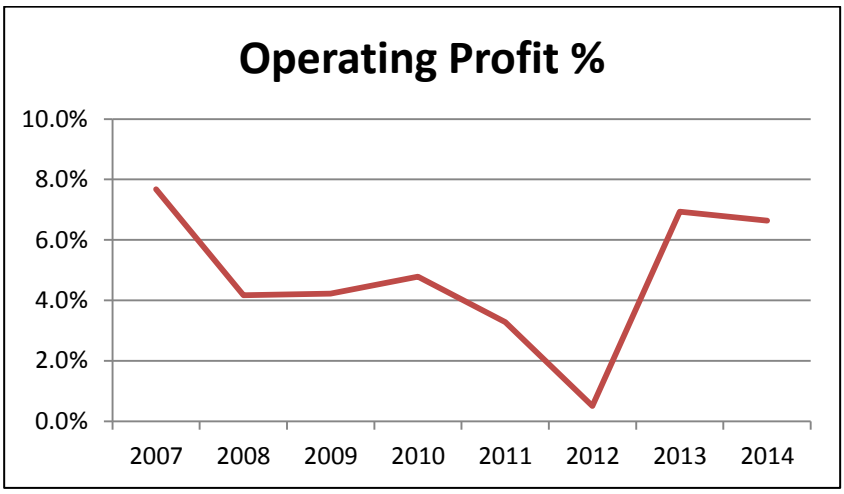

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Figure 21: Comair net profit %

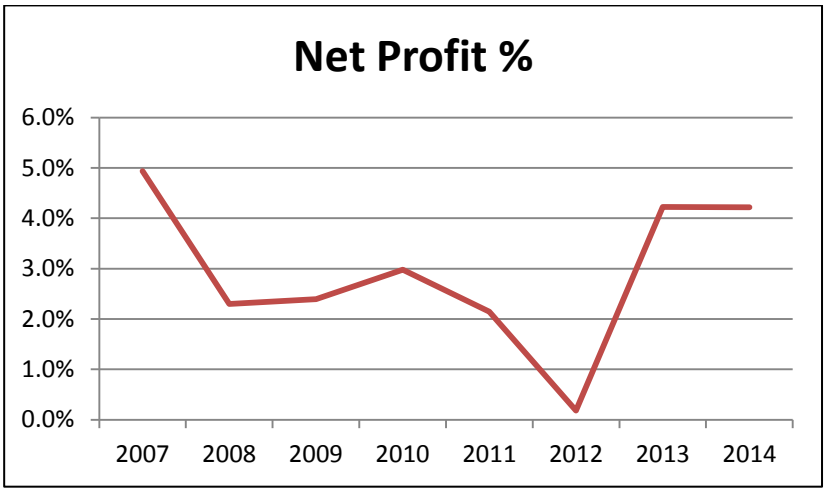


Figure 22: Comair return on assets %

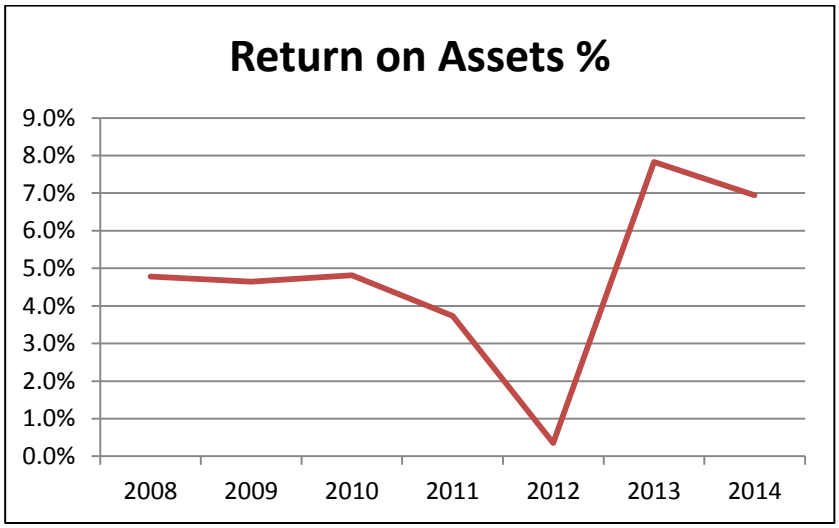
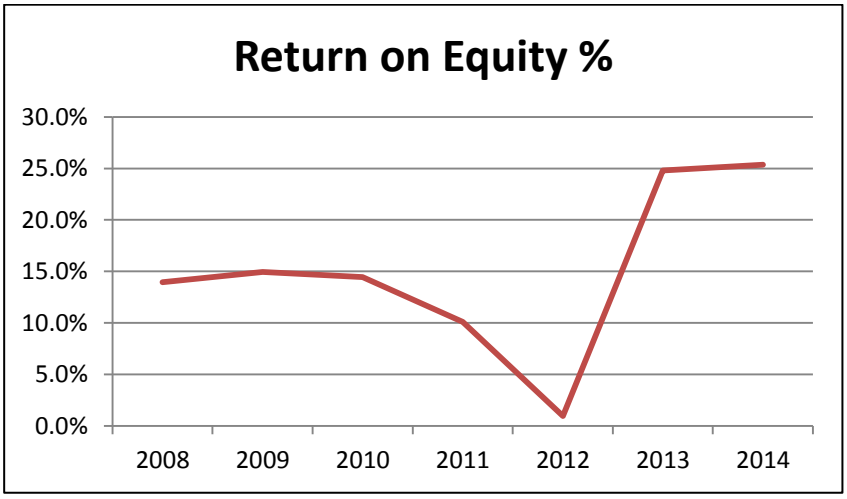


Figure 23: Comair return on equity %



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6. Discussion

The purpose of this study was to explore whether there had been changes in the organisational climate as measured through the externally administered Denison Organisational Culture Survey, the climate as measured in the internal Comair Think Vision Climate Survey, and the financial performance of the company.

6.1. Denison Organisational Culture Survey

Hypothesis 1: *The organisational culture at Comair as measured externally using the DOCS changed in the period under review.*

Turning first to the Denison survey, this data was studied using two different approaches. Firstly the raw data was assessed for consistency using Cronbach's Alpha and then the means of each main construct as well as the sub-constructs were compared. It must be noted that all measures showed an improvement over the period studied. However comparing the levels of improvement relative to one another will indicate where the surveyed employees feel that the most and/or least progress is being made.

The three areas showing the largest improvements in the study of the raw data were:

- Coordination and integration – an improvement of 30.7%,
- Vision – an improvement of 25.8% and
- Strategic direction and intention – an improvement of 23.1%

The three areas showing the lowest improvements were:

- Customer focus – an improvement of only 7.3%,
- Capability development – an improvement of 9.0% and
- Creating change – an improvement of 9.5%

Of the four main constructs, Mission fared the best with an overall improvement of 22.5%, while adaptability improved the least by only 8.8% overall.

Comparing this to the results obtained by Denison using their normative database, the outcomes are not dissimilar. Bearing in mind that the Denison report is expressed in

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percentiles, the three most improved areas were:

- Coordination and integration – increased by 78 points,
- Vision – increased by 77 points and
- Goals and objectives – increased by 71 points.

The three measures showing the least improvement were the same as those using the raw data, i.e.:

- Customer focus – increased by only 24 points,
- Creating change – increased by 34 points, and
- Capability development – increased by 37 points.

Using the normative database, the main construct to improve the most was Mission while that which improved least was Adaptability, the same results as those found using the raw data.

From the analysis of the Denison surveys, it is quite apparent that the first hypothesis has been proven in that the culture measured by Denison has changed and in fact improved across all areas measured. However there are some areas that have improved more than others and these would seem to indicate a shift towards a more mission oriented company while at the same time the company's adaptability to changing circumstances has not improved at the same pace. It is pleasing to note that the results observed in the Denison Survey using the Denison normative database were similar to those obtained when analysing the raw survey data.

6.2. Comair Think Vision Climate Survey

Hypothesis 2: *The climate at Comair as measured internally using the CTVCS changed in the period under review.*

Turning to the internal CTVCS, we must first note the statistical limitations found in the raw data. Through the use of the t-test for dependent samples, many of the individual constructs were shown to have changed over the three consecutive surveys. However because of the large sample sizes and on further examination through the use of Cohen's d, we established that out of 90 measurements, only 12 could be considered of low practical significance, while the balance fell below this threshold.

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While we note the limitations of this data, the author has nevertheless used descriptive statistics to examine the movement in the means of the constructs over time, and in particular the percentage change from 2012 to 2014. The details are to be found in figures 14 and 15.

In the top line principles, in other words those which the employees would like to see more of, the biggest improvements can be seen in:

- Pursue operational excellence which improved 11.1%,
- Financially sound which improved 10.7% and
- A great place to work which improved 10.4%

Those positive traits that improved the least over the three years were:

- Dignity and respect, which only improved 3.3%,
- Teamwork which improved 3.4% and
- Passion for service which improved 4.0%

The bottom line principles, in other words those which the employees desired less of also improved. Remembering that a decrease represents an improvement, the biggest improvement was seen in:

- Not enough of the right resources which decreased by 12.6%,
- Damaging our reputation which decreased by 12.4% and
- Bad planning which decreased by 11.0%

On the other hand, the negative traits that showed the least improvement were:

- Backstabbing and gossip which only decreased by 0.9% which indicates that respondents feel that it exists at a level in 2014 not dissimilar to 2012,
- Arrogance which decreased by 2.5% and
- Favouritism which decreased by 2.7%

From these results it can be observed that the areas showing the most improvement related to structure and performance of the company. Those traits that showed the least improvement generally related more to interpersonal behavioural issues such as gossip and backstabbing. It is further interesting to note that passion for service

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showed the lowest improvement among the positive traits, a trend that could be related to the finding in the Denison data where customer loyalty showed the lowest increase between the two surveys.

On average, the negative traits showed a greater improvement at 7.2% compared to the positive traits which overall improved 6.7%.

While noting the statistical limitations referred to elsewhere, the descriptive statistics show that the organisational climate at the company as measured through their internal survey did in fact change for the better in the period under review.

6.3. Comair Key Financial Indicators

A review of the key financial indicators shows a steady increase in revenue (Figure 18) from R2.2bn in 2007 to R6.3bn in 2014. The only notable exception was 2010 when revenue did not grow compared to the previous year.

By contrast every other key number showed a sharp decline in 2012 followed by a remarkable recovery thereafter. Profit from operations in Figure 19 shows that the group narrowly missed reporting a loss in 2012, and this trend affects all other key ratios. The operating profit percentage, the net profit percentage, the return on assets and the return on equity were all affected as a result. However what is clear from this analysis is that every key financial measure has improved dramatically since 2012. It must be noted that operating profit percentage reduced slightly in 2014 due to an overall 18% weakening of the exchange rate during the year (Comair, 2014).

6.4. Commentary

Erik Venter, the CEO of Comair provided insight into the trends observed in the three analyses above.

Starting with the financial results, Venter reported that 2012 was the watershed year for Comair. It followed immediately on the change of leadership in the company, with Venter taking over, and was a year that saw tumultuous change. In Venter's words: "Never waste a good crisis!"(Venter, 2014).

The change in leadership had resulted from disagreement over the direction and

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overall management of the company. Venter strongly believed that the asset base and the operating systems were in need of an overhaul and on assuming leadership he embarked on an extensive programme of changes. The two most notable changes were the acquisition of new aircraft and the purchase of the Sabre operating system. Further details are contained in chapter 2.

Venter indicated that the Board of Comair were sceptical about the extent of investment required and effect it would have on profitability and return on assets. In fact the concerns proved to be groundless as indicated in the data, and the company grew from strength to strength. Venter attributes the financial growth to the introduction of structure and stability through Sabre, and the disciplines imposed by a more formalised working environment (Venter, 2014).

Turning to the Denison surveys, Venter commented that the movement from 2011 to 2014 was in line with his expectations. The improvement in the "Mission" characteristic is directly as a result of improved control and structure since 2012.

This contrasts with the relatively lower improvement in the "Adaptability" characteristic. When questioned, Venter indicated that this was also to be expected. The introduction of improved systems and controls meant that much of the ability to solve problems on the spot and "make a plan" was curtailed. This is particularly evident in the lower score for customer focus, and is believed to be because employees now have less ability to short-cut a system or compromise the company in order to satisfy the customer (Venter, 2014).

When examining the comparisons of the Think Vision Climate Surveys, many of the same trends are evident. The large improvements in the principles "financially sound", expansion and growth" and "pursue operational excellence" would correlate with the results of the Denison survey and indicate an organisation that has transitioned into a more mature, structured entity. The improved perception of sufficient resources, compliance and managing reputation would also indicate a company that is trending positively.

The low improvements in "passion for service", "teamwork", "inflexible" corroborate the Denison Survey and in line with Venter's observations above.

When asked about the low improvements seen in "teamwork", "dignity and respect",

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“arrogance”, backstabbing and gossip” and “favouritism”, Venter commented that this was symptomatic of air crew and ground staff having extended quiet times between activities, and therefore a resulting tendency for politics (Venter, 2014).

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7. Conclusion

This article set out to examine different measures of internal characteristics seen in Comair Ltd as measured by the externally administered Denison Organisational Culture Survey and the internally managed Comair Think Vision Climate Survey. In addition the financial trends of the company were analysed.

In conducting the research it was evident that both the organisational culture as well as the climate had improved significantly since 2011/12. Moreover the changes in both cases indicated a move from a younger less-structured environment to a more mature, structured and better controlled environment. Principles relating to planning, vision and overall leadership improved while some characteristics relating to customer service and freedom to serve did not improve to the same extent. These findings were corroborated by the CEO, Erik Venter who indicated that they followed closely on developments in the company.

Moreover an examination of the key financial indicators showed a dramatic return to profitability post-2012 with a resulting improvement in all key measures such as return on assets and return on equity.

While it was not the intention of this article to relate these changes to developments in the company, in retrospect there is certainly a great deal of correspondence between developments that took place in the company, such as new leadership, investment in fleet and implementation in new systems, and the observed improvements in organisational culture, climate and overall financial performance.

Comair has journeyed from a family owned entrepreneurial entity to its position today as a successful listed corporation. In so doing it has seen not only improvements in culture and climate, but a clear swing towards a more mission oriented entity which has lost some of the adaptability associated with its past.

7.1. Areas for future research

This article provides some indication of similar trends being evident in both organisational culture and climate under the same set of circumstances. It is apparent that this relationship should be explored further and in so doing, the body of knowledge linking culture to climate could be developed further.

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In the conclusion mention is made of the changes in culture and climate which occurred as the company progressed through phases of maturity, from an entrepreneurial environment to a structured, formalised corporation. Further research should be conducted on both organisational culture and climate and they way they change or develop as a company passes through various stages in its lifecycle, and particularly the development from an entrepreneurial venture to an established corporation.

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8. GIBS Literature Review

8.1. Understanding Organisational Culture

Organisational culture was first referred to by Elliot Jacques in 1951. He described culture as informal social structures and suggested that it could be responsible for the failure of formal policies and procedures to resolve the unproductive dynamic between managers and employees in a company that he was examining (Jaques, 1951).

Edgar Schein (1983) was one of the pioneers in understanding organisational culture. He makes it clear that culture does not relate to overt behaviour or visible artefacts that are apparent to the outside visitor to a company, but it is rather the assumption that underlies the values and which determine behaviour patterns. He goes on to express his belief that the founder of an organisation brings many of these assumptions with them.

According to Schein (1983) “culture consists of the assumptions that underlie the values and determine not only behaviour patterns, but also such visible artefacts as architecture, office layout, dress codes and so on”. He goes on to say that “organizational (sic) culture, then, is the pattern of basic assumptions that a given group has invented, discovered, or developed in learning to cope with its problems of external adaption and internal integration” (p.14). This pattern should work well enough to be considered valid and therefore form the basis of integration for new members into the organisation (Schein, 1983).

A new company needs to develop shared assumptions about the nature of the world in which it exists and how to survive in it. It uses these to integrate internal relationships in order to operate effectively. The first assumptions are typically inculcated from the beliefs of the founder who will often base the organisation on his or her own personal biases (Schein, 1983).

Schein expands his theory in his book “Organizational Culture and Leadership” where he points out that “to understand a group’s culture, one must attempt to get at its shared basic assumptions and one must understand the learning process by which such assumptions come to be” (Schein, 2010, pg. 36).

Kotter and Heskett (2008) in their book Corporate Culture and Performance define

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culture as the qualities of any specific human group that are passed from one generation to the next. They further distinguish between two levels of culture:

- at a deeper less visible level culture consists of values that are shared by people in a group and that tend to persist over time, even when group membership changes. This level of culture can be very difficult to change and often exists at a subconscious level.
- at a more visible level culture consists of the behaviour patterns or style of an organisation that new employees are automatically encouraged to follow by fellow employees. This level of culture exists at a conscious level and while still difficult to change is easier than the former level (Kotter & Heskett, 2008).

8.2. Organisational Culture versus Climate

The term organisational climate is often used interchangeably with culture, and it needs to be determined whether this is a valid substitution, or whether these are distinctly different concepts.

Wallace, Hunt, and Richards (1999) in their paper "The relationship between organisational culture, organisational climate and managerial values" explore the matter in some depth. They argue that there is a close and sometimes ambiguous relationship between climate and culture which until their research, had often been overlooked in literature at the time (Wallace et al., 1999). In their article they draw on the work of a number of authors including Schein (1985) who proposed that culture is widely understood to be made up of a collection of fundamental values and belief systems which give meaning to organisations. It is thus argued to be a more implicit concept than organisational climate.

Organisational climate on the other hand consists of more empirically accessible elements such as behavioural and attitudinal characteristics (Moran & Volkwein, 1992). They go on to explain that a further distinction lies in the fact that the climate of an organisation consists mainly of shared perceptions whereas culture of an organisation is made up of shared assumptions (Wallace et al., 1999). Similarly Moran & Volkwein (1992) suggest that climate consists of attitudes and values alone, whereas culture exists as a collection of basic assumptions, in addition to attitudes and values.

A more accessible definition of climate is put forward by Hemmelgarn, Glisson, and James (2006) who propose that climate (specifically psychological climate) is the

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individual employees perception of the psychological impact of the work environment on his or her own well-being. Put simply an employee assesses whether or not one's work environment is good or bad for one's own well-being (Hemmelgarn et al., 2006).

Wallace et al. (1999) go on to add a third construct, that of values. Hofstede, Neuijen, Ohayv, and Sanders (1990) describe values as consisting of non-specific feelings of good and evil, beauty and ugliness, normality and abnormality, rationality and irrationality. They assert that values themselves cannot be observed directly but can be inferred from their manifestations in alternatives of behaviour.

Their article then goes on to examine the relationship between culture, climate and values. Though closely related to culture, organisational climate holds several important differences. Climate refers to a summary perception of how an organisation deals with its members and environments and thus develops specifically from internal factors primarily under managerial influence (Ostroff & Schmitt, 1993). Organisational culture on the other hand is created from a broad range of internal and external influences, some of which lie beyond management control (Alvesson, 1991). The authors point out that it has been strongly contended that culture, climate and managerial values are instrumental in predicting levels of managerial and organisational effectiveness, although insufficient empirical testing of this hypothesis has been conducted (Wallace et al., 1999).

Denison (1996) in his study "What is the Difference between Organizational Culture and Organizational Climate?" attempts to further investigate the difference between the two constructs. He examines the alternate viewpoints that on the one hand culture and climate represent two entirely separate phenomena, and on the other whether they represent closely related phenomena that are simply being examined from different perspectives. He goes on to suggest that both perspectives could in fact be regarded as examining the internal social psychological environment of organisations and the relationship of that environment to individual meaning and organisational adaption.

On review of the available literature, Denison (1996) proposes that on the surface the distinction between organisational climate and organisational culture may appear to be quite clear: Climate refers to a situation and its link to thoughts, feelings and behaviours of organisational members. Therefore it is temporal, subjective and often subject to direct manipulation by people with power and influence. Culture on the other hand refers to an evolved context (within which a situation may be embedded). Thus it

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is rooted in history, collectively held and sufficiently complex to resist direct manipulation.

Ostroff, Kinicki, and Tamkins, (2003) while citing Denison, further define the constructs while investigating the roles they play in understanding individual as well as collective attitudes, behaviour and performance. They define climate as a perceptually based description of the organisation and what it is like in terms of practices, policies, procedures and routines. On the other hand they submit that culture helps define the underlying reasons and mechanisms for why these things occur in an organisation based on fundamental ideologies, assumptions, values and artefacts (Ostroff et al., 2003).

Climate has also been described as a social-cognitive construct (Zohar & Luria, 2004). Because climate perceptions concern the types of role behaviour likely to be rewarded and supported, the authors argue that the most significant information on the organisation's climate will be derived from events that reveal managerial policies and practices. Such events serve as climate indicators that can reveal the priority of key facets which may in fact differ from formal declarations concerning the same issues. For example if merit bonuses are awarded to workers who prioritise productivity over safety, workers will infer low safety priority, even if management's overt policy is that safety is a top priority (Zohar & Luria, 2004).

Authors Patterson, West, Shackleton, Dawson, Lawthom, Maitlis, Robinson and Wallace (2005) developed and validated a multi-dimensional measure of organisational climate, the Organizational (sic) Climate Measure (OCM). Interestingly however it is also based on the competing values model of Quinn and Rohrbaugh used elsewhere as a foundation for measuring organisational culture. The authors point out that the dominant approach had been to define climate as employees' shared perceptions of organisational events, practices and procedures. These perceptions were primarily descriptive rather than effective or evaluative. However more recent research contradicts this view suggesting instead strong evaluative and effective components. Most studies use an aggregated unit of analysis such as department, division or even company. Individual scores are typically aggregated up to the appropriate level using the mean score to represent climate at that level.

Patterson et al. (2005) go on to say that the terms culture and climate are often used interchangeably. They further point out that there is no doubt that climate and culture

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are similar concepts in that they both measure employees' experiences of their organisations. Drawing on the work of Schneider (2000) the authors propose that organisational climate represents the things that happen to employees in an organisation and is behaviorally orientated. Organisational culture, in contrast, comes to light when employees are asked why these patterns exist. This question is answered in relation to shared values, common assumptions and patterns of belief held by the organisation's members (Patterson et al., 2005).

So it can be seen from the literature that culture and climate are often used interchangeably, and moreover are even confused as constructs. However the general consensus seems to be that organisational climate refers to behavioural and attitudinal tendencies whereas culture consists of more fundamental values and belief systems. While we will go on to explore the literature examining the effect of culture on various performance measures, it is not apparent whether there is a direct correlation between movements in culture and movements in climate within an organisation. This paper intends to pursue that link.

8.3. Does Organisational Culture Impact on the Performance of the Organisation?

But why is organisational culture so important? Why do we need to understand if it is in fact affected by changes within the company? Organisational culture plays many roles in the development and success or otherwise of young companies. Recent research has provided mixed results when seeking a link between organisational culture and company performance.

8.3.1. Relationship between Organisational Culture and Performance

The watershed event that precipitated the focus on organisational culture at Comair was the introduction of the Sabre Management System in 2012. Interestingly enough Senarathna, Warren, Yeoh, and Salzman (2014) have written a paper discussing the influence of organisational culture on the adoption of e-commerce. While Sabre is not an e-commerce solution in the purest sense, it did represent a significant step forward in the use of integrated computerised management systems at Comair. For this reason the findings in the paper of Senarathna et al. (2014) are of interest. Their research indicates that there is a positive correlation between an adhocracy culture and e-commerce adoption. However firms with hierarchy cultural characteristics show

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a negative correlation in relation to e-commerce adoption. They propose that the organisational culture differences are responsible for these issues.

Shahzad, Iqbal and Gulzar (2013) examined the link between organisational culture and employee performance, albeit in software houses in Pakistan. Analysing both primary and secondary data they came to the conclusion that there is a positive relationship between organisational culture and employee performance.

Kim Jean Lee and Yu (2004) sought to investigate the possible relationships between corporate culture and organisational performance. Their research was two-fold, firstly to assess the validity of the culture construct, and secondly to examine the link between performance and culture. The results of their factor analysis and reliability tests found that a distinct set of cultural dimensions did exist and that furthermore they could be operationalised along distinct, repeatable dimensions. Regarding the link between culture and performance, while they concluded that organisational culture does indeed influence performance, surprisingly the link could only be established in certain industries (Kim Jean Lee & Yu, 2004).

In his own research notes, Daniel Denison sets out to prove the link between organisation culture and performance, submitting that an effective organisation culture can provide a competitive advantage to an organisation. Using the data collected by Denison Consulting from 127 public companies, they found a definite correlation between culture and performance. The top 25% of performers in culture had an average Return on Assets (ROA) of 3.5%, sales growth of 24.8% and a market to book ratio of 4.0. On the other hand the bottom 25% of companies surveyed had an ROA of only 1.2%, sales growth of 7.5% and a market to book ration of 2.5, all scores significantly lower. This trend was monitored over a period of four years after the Denison Survey was conducted and the same results held true over that period. The conclusion drawn by the author was that culture has not only a short-term impact on performance, but that lasting effects are evident as well (Denison, 2012).

In their study “Managing knowledge: the link between organizational culture and learning”, Lopez, Peon and Ordas (2004) sought to understand how the organisation’s culture influenced knowledge management, organisational learning and ultimately company performance. The study was conducted among 195 Spanish firms and their findings were positive. They found that a collaborative culture encouraged organisational learning which in turn had a positive effect on the performance of the

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business. However in expressing possible limitations they did admit that they had assumed a casual flow from collaborative culture to improved performance. It was entirely possible that the process could have occurred in the reverse, in that good company performance may have resulted in a collaborative culture.

Xenikou and Simosi (2006) examined the relationship between transformational leadership and organisational culture on business unit performance. In a study carried out in the Greek financial sector, they found a direct relationship between adaptive cultural orientations and performance. Moreover they established that transformational leadership created an achievement orientation which in turn led to an improvement in company performance.

This was supported by a study conducted by (Slater et al., 2011), who using configuration theory showed that cultural orientations may play a role in creating superior performance. Their study specifically showed that a match between the culture of the marketing organisation and the firm's business strategy is in fact associated with superior performance of the company.

There are however a number of studies that find the link between organisational culture and performance weak if not non-existent.

Most recently, Shehu and Mahmood (2014) researched the effect of, among other things, organisational culture on the performance of SMEs. In their quantitative study surveying 640 respondents in Nigerian SMEs they could find no link between organisational culture and business performance. They did however point out that the study had limitations in that the data were only collected at a point in time. They proposed that a different result may have been reached in a longitudinal study.

Cho, Kim, Park and Cho (2013), found that there is a significant causal relationship between learning orientation, organisational learning and service quality. It is their assertion that employees exhibit an active learning behaviour when they are aware of the importance of learning and further commit to it when there is a common vision shared among members towards learning. Based on this they contend that there is a relationship between organisational culture and service quality (Cho et al., 2013).

Further work on the relationship between organisational culture and customer relationship management has recently been carried out in Australia. Iriana, Buttle and

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Ang (2013) surveyed 99 different organisations with customer relationship management (CRM) systems and concluded that organisational culture is a significant driver of CRM outcomes. These were measured in terms of a number of financial matrices which exhibited positive outcomes associated with improved CRM results (Iriana et al., 2013).

The positive effect of organisational culture is not limited to CRM or service quality. Similar recent studies have been conducted into the link between culture and manufacturing efficiency. Su, Yang and Yang (2012) conducted research on this link and were able to conclude that the fit between organisational culture and manufacturing strategy is not only critical to the success of the firm, but provides an important predictor of firm performance (Su et al., 2012).

8.3.2. Organisational Culture and Transition

Given the profound effect of the founder on culture, one of the first major challenges faced by any new company is the hand-over by the founder to a professional management team or a newly appointed CEO. Serra and Borzillo (2013) have studied the process of founder succession in new ventures. According to them, first-time succession of the leader represents a particularly critical moment in the early years of young companies. They have identified six factors that shape a successful first-time succession:

- the case for change
- procedural fairness
- the inclusion of top management
- the soft skill of the new CEO
- the timing
- and lastly the relationship between the outgoing and the incoming CEO

The relative importance of each factor is dependent on who initiated the event; the founder-CEO himself, top management or the board. Specifically, the authors note that the relationship between the new CEO and the outgoing CEO has a signalling effect, promoting confidence in the process and acceptance of the changes (Serra & Borzillo, 2013).

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8.3.3. Organisational Culture and Leadership

With regard to the actual characteristics of a leader and the link to organisational culture, Giberson, Resick, Dickson, Mitchelson, Randall and Clark (2009) contended that while the relationship between leadership and culture is a fundamental assumption in organisational behaviour, there was little empirical evidence to back this up. They set out to research the link between a CEO's characteristics and the organisational culture of his firm and concluded that several of the CEO's personality traits were significantly related to cultural values held by employees. Specifically agreeableness and emotional stability appeared to have important links to culture values. (Giberson et al., 2009).

Cardon (2008) develops the proposal that passion is a central element in the entrepreneurial process. In her research she develops a model that demonstrates that passion can be transferred from the entrepreneur to employees. "Passion has been argued to have strong effects on the creativity, persistence, and absorption of entrepreneurs" (Cardon, 2008). She does not however consider the impact of the withdrawal of the entrepreneur, and whether this has a negative impact on the creativity and persistence of employees.

Interestingly enough, Detert, Schroeder and Murial (2000) set out to establish a conceptual framework linking culture and improvement initiatives in organisations. In so doing they provided a comprehensive synthesis of organisational culture literature and developed a framework of culture dimensions. However by their own admission the work was far from complete and they appealed to academics to "replace anecdotes, intuition and vague statements with more formal theory and empirical evidence" (Detert et al., 2000).

8.4. Measurement of Organisational Culture

One of the seminal authors who proposed a framework for the measurement of organisational culture was Quinn (1988) whose work "Beyond rational management: Mastering the paradoxes and competing demands of high performance" first proposed the Competing Values Framework. This model has been adapted and updated by and used repeatedly in the measurement of organisational culture in various contexts.

Quinn (1988) explained that there are competing tensions and conflicts in any human

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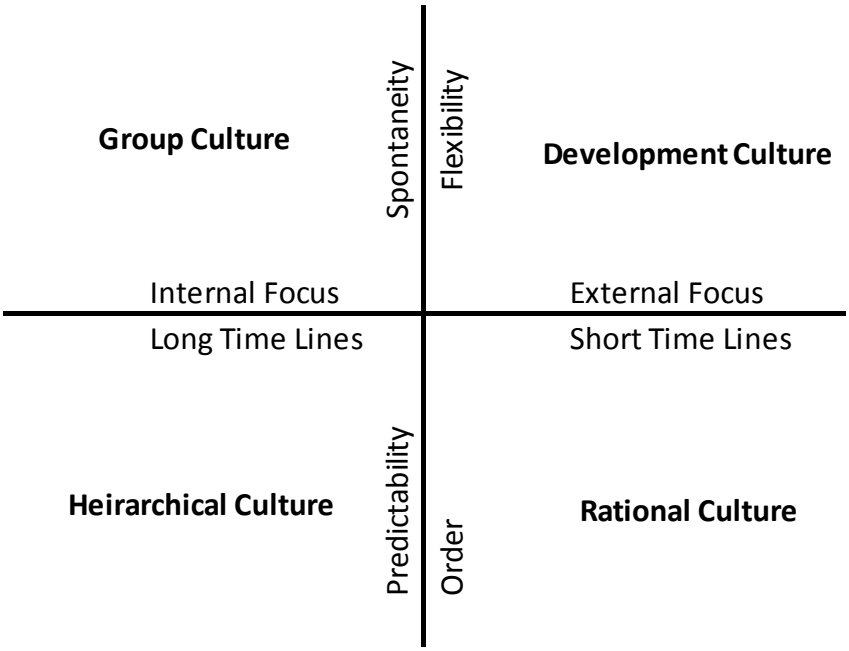
system. Primarily there is conflict between stability and change, as well as between the internal organisation and the external environment.

The concept can be better illustrated in an update proposed by Denison and Spreitzer (1991) who presented four studies of organisational culture that are rooted in the Competing Values Model (Quinn, 1988). Denison *et al* built on the hypothesis that there is a link between "underlying values, organisational structures and individual meaning" (pg 2) which must first be understood before examining the changes within the organisation. Denison *et al.* (1991) further portrayed the Conflicting Values Model along two primary axes with opposing cultural constructs on either end of the axes. This resulted in the four distinct cultural grouping quadrants that are represented in Figure 1 below.

Figure 24: Competing Values Model by Denison *et al*



Adapted from Denison *et al* (1991)

From Figure 1 it can clearly be seen that in terms of the Competing Values Model, an organisation can be categorised into one of the four cultural quadrants, being group, development, hierarchical and rational in culture. These classifications are dependent on whether an organisation is considered orderly or flexible, and whether they are classified as internally or externally focused.

The Competing Values Model was taken a step further by van Muijen (1999) who

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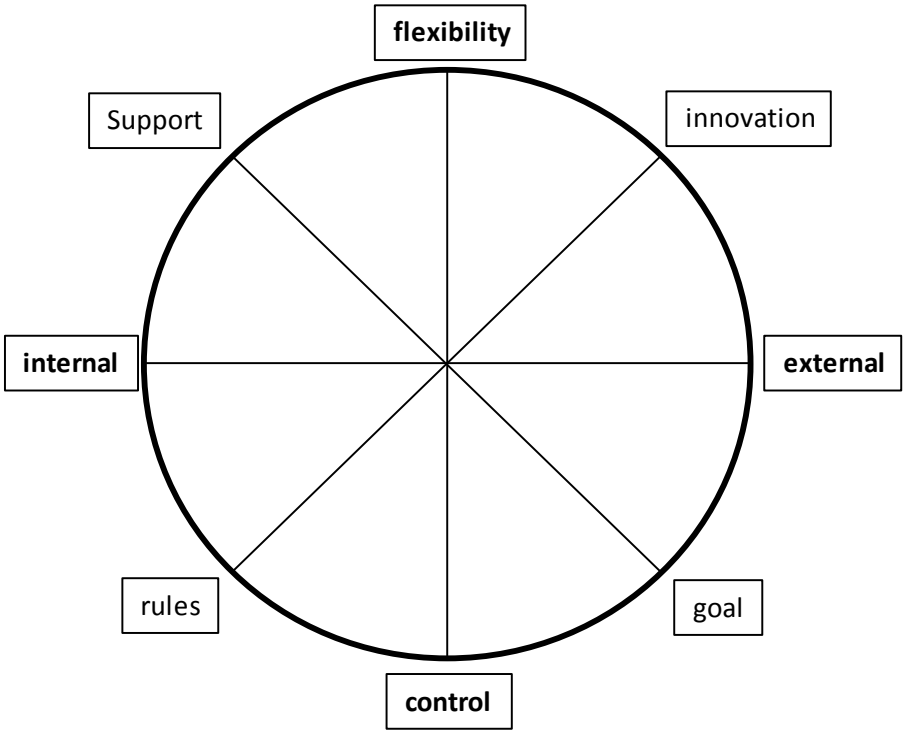
proposed the Focus Questionnaire as a means of measuring organisational culture. Although the terminology differs slightly, van Muijen proposed a very similar structure to Denison *et al*. (1991). Where the latter refers to group, development, hierarchical and rational cultures, van Muijen talks about support, innovation, rules and goal orientation. However the sentiment contained in each is similar enough as to be considered interchangeable.

Figure 25: Competing Values Model by van Muijen



Source: van Muijen (1999)

8.4.1. Reliability of Measures of Organisational Culture

It is acknowledged that the quality of instruments available to assess organisational culture varies widely. Denison et al., (2014) described three specific tests needed to establish a tools reliability and validity:

4. **Psychometrics:** the test must demonstrate that the items function appropriately and that the data supports the structuring of the items into the specific dimensions being measured.

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5. **Aggregation:** the tool being used must demonstrate a strong agreement and reliability between individual measures of culture and the aggregated measure for the whole organisation.
6. **Link to performance:** where a tool is designed to demonstrate the link between organisational culture and performance, this link needs to be supported by statistical relationships between these two constructs.

Using these criteria the authors put forward evidence supporting the validity of the Denison Model (Denison et al., 2014). It should be noted however that the authors (including Denison) are all consultants with Denison consulting, and while there is no reason to doubt the validity of their assertions, a reader should nevertheless be aware of the potential for bias.

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9. GIBS Research Methodology

9.1. Introduction

This research study was intended to explore the changes in organisational culture, organisational climate and the performance of an organisation. To understand this we performed a longitudinal investigation into changes in company culture and/or climate over time, as well as the performance of the organisation. The study was conducted on an exploratory basis using both descriptive analysis as well as quantitative analysis.

9.2. Research Design and Methodology

According to Saunders and Lewis (2012), exploratory studies should be used to "discover general information" (pg. 110) about the topic at hand. They are intended to gain insight that may inform later research projects and it could well happen that the exploratory study could lead to further, more detailed research on the subject matter as a second or subsequent phase. In light of the foregoing the study was conducted on an exploratory basis using both descriptive analysis as well as quantitative analysis.

9.3. Data Sources

The researcher relied on five sources of data for this research, three of which were secondary (pre-existing) data and two of which were primary (new) data.

6. The first source of secondary data was the Denison Organisational Culture Survey conducted by Denison Consulting at Comair in 2011.
7. The second source of secondary data were the Comair Think Vision Surveys which measured the internal climate at Comair since 2007.
8. A Denison Organisational Culture Survey commissioned by the author in 2014 served as the third source of data.
9. The research also made use of the publically available Annual Reports of Comair.
10. And lastly the researcher supplemented the above with interviews conducted with senior personnel at Comair.

9.4. Population

According to Saunders & Lewis (2012), a population is the complete set of group members. Thurman (2008) defines the population as "the entire set of individuals or objects of a particular group. Because it is impractical to measure the entire

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population, we perform sampling in order to infer population characteristics or behaviours (Thurman, 2008). In the context of this study, the population consisted of all airline or similar companies operating in Southern Africa. It is anticipated that the lessons learned from the study of our subject could be used to make inferences about changes in organisational culture and climate in other, similar organisations and any effect it may have on the performance of the organisation.

9.5. The Denison Organisational Culture Survey

The Denison Organisational Culture Survey (DOCS) is conducted by Denison Consulting based in Ann Arbour, Michigan in the United States. Denison Consulting was founded by Dr Daniel Denison and William S Neale in 1998 (Denison Consulting, 2014).

The DOCS is designed to assess an organisation's strengths and weaknesses as they apply to organisational performance. The survey has 60 items that measure specific aspects of an organisation's culture in each of the four traits and twelve management practices outlined in the Denison Model The model follows the structure of the Competing Values Model developed by Quinn (Quinn, 1988). However it is important to note that the Denison Model does not propose that the four traits are mutually exclusive, but rather that a successful company will exhibit higher scores in all spheres. For a complete list of the questions contained in the survey, refer to Appendix A.

Denison then uses normative scoring to present survey results. The normative database provides clients with information about how their organisation scored on the DOCS relative to other organisations. The scores are provided in the form of percentiles which indicate the percent of organisations in the database that scored the same or lower than the target organisation on a given item or index. This method enables the company to benchmark its culture scores against other higher and lower-performing organisations worldwide (Denison Consulting, 2013).

Therborn (2002) presented an overview of norms as used in social theory, saying that normative action was that in which one "did the right thing" rather than merely as a means to an end. He specifically defines institutional norms as defined by role play, in other words finding expression in expectations, obligations and rights vis-à-vis the role-holder's behaviour (Therborn, 2002). In the case of the Denison Survey, the normative database serves as a benchmark of average or "normal" behaviour against which the

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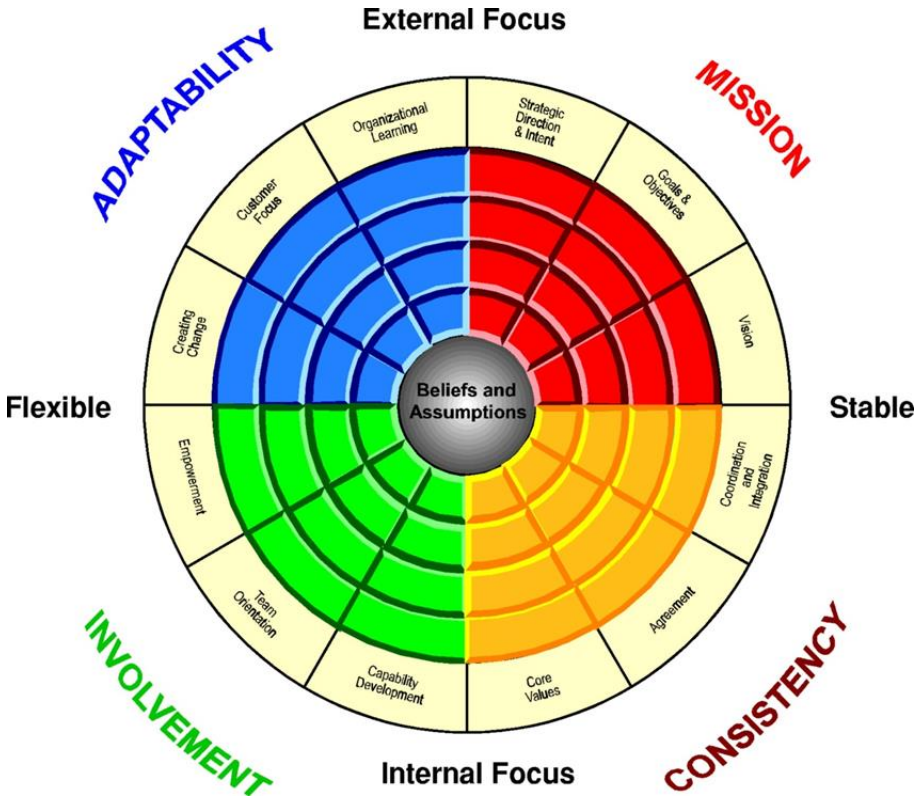
investigated company is measured.

As of 2013, there were 1084 organisations, rated by over 480 000 respondents included in the database from a wide variety of industries including manufacturing, professional services, financial services, health care, educational institutions, government and non-profit. The database includes 40 Fortune 500 companies and 291 multinational organisations (Denison Consulting, 2013).

The DOCS is presented using four main traits each of which is broken down into a further three management practices.

Figure 26 Denison Organisational Culture Survey Model



(Denison Consulting, 2014b)

The four quadrants represent the four fundamental traits found in all successful organisations. Each quadrant is sub-divided into sub-traits or management practices:

e. **Adaptability**: represents the organisations ability to perceive and adapt to a changing environment.
    i. **Creating change:** the organisation welcomes new ideas and is willing to try new approaches.
    ii. **Customer focus:** employees recognise the need to serve both internal

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and external customers and continually seek ways to improve this.

iii. **Organisational learning:** “thoughtful” risk taking is encouraged and lessons will be learned from both successes and failures.

f. **Mission:** high performing organisations have a clear mission that tells employees why they are doing the work they do and how the work they do contributes to the why.

i. **Strategic direction and intent:** refers to the presence of multi-year strategies.

ii. **Goals and objectives:** short term, specific goals that connect employees’ every-day activities to the vision and strategy.

iii. Vision: the ultimate reason you are in business, shows what you intend to achieve.

g. **Consistency**: provides a central source of integration, coordination and control. It helps an organisation develop systems that create an internal system of governance based on consensual support.

i. **Core values:** refers to the presence of a clear set of core values that enable consistent decisions and behaviour.

ii. **Agreement:** by engaging in dialogue and getting multiple perspectives on the table, a team can reach agreement.

iii. **Coordination and integration**: Employees understand the impact of their work and make sure that it is integrated and coordinated to serve the organisation as a whole.

h. **Involvement**: represents the sense of ownership and responsibility. This leads to greater commitment to the organisation and an increased capacity for autonomy.

i. **Empowerment:** they clarify those areas where employees can make decisions, have input, or those areas that are beyond their scope of responsibility.

ii. **Team orientation:** teamwork is encouraged so that creative ideas are captured and employees support one another in implementation.

iii. **Capability development:** includes training, coaching and giving employees exposure to new roles and responsibilities. (Denison Consulting, 2014)

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Denison himself has tested the correlation between organisation culture and economic performance the details of which are published in his Research Notes. He found that there was a positive correlation between the performance of an organisation and the ranking on the Denison Model and that this trend endured over time (Denison, 2012).

9.5.1. Sampling Method and Size – Denison Organisational Culture Survey

The 2011 Denison Organisational Culture Survey is a pre-existing survey with no implications for sampling. The sample response rate for DOCS 2011 was 53 employees (Gotham Culture, 2011).

For the 2014 DOCS, the decision was to survey senior levels within the company as these employees were the most likely to have been impacted in the Sabre implementation in 2011/12, and as such would have been involved in the first DOCS. Accordingly the author obtained a complete list of all employees at Comair that fall into either the Executive Grouping, or the Direct Report Grouping. A random sample of 30 employees was selected from this list and was forwarded to Denison Consulting for the survey. A response was received from 25 participants. Note that due to the confidential nature of this survey and the fact that it is administered by an outside party, it was not possible to determine which employees responded to either the 2011 or the 2014 survey. It was therefore not possible to establish whether the two surveys were dependent or independent.

Specifically concerning the DOCS 2014, the survey was administered by Denison Consulting from their offices in Anne Arbour, Michigan. The sample selected was forwarded to Denison Consulting together with the e mail addresses of these employees. Denison Consulting then mailed out a link to their website which took the employee directly to the proprietary survey. Care was taken to ensure that the survey conducted in 2014 contained the same questions as that conducted in 2011 (See Appendix A).

Denison consulting does not generally provide raw data or specific detail for their surveys. However given the academic nature of this research, Denison agreed to provide the raw data on signature of a non-disclosure agreement (attached at Appendix H). It must also be noted that the raw data does not include information from the Denison normative database and as such no inferences about Comair's results

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should be drawn in relation to other companies present in the database from this raw data. In order to assess Comair against its peers on the database, the actual Denison reports were also compared.

9.5.2. Methodology: Denison Organisational Culture Survey

We wished to assess whether the organisational culture at Comair as measured through the DOCS, an externally administered survey, had changed significantly in the period under review.

Hypothesis 1: *The organisational culture at Comair as measured externally using the DOCS changed in the period under review.*

The first step in analysing the DOCS data was to calculate the Cronbach's Alpha for each variable. The Cronbach's Alpha's is a measure of the internal consistency or reliability of a set of items. It is used when it is necessary to show that the items in a test are consistent with one another in that they present one dimension, construct, or area of interest. As a general rule, an alpha of between 0.6 and 0.7 is regarded as acceptable reliability and 0.8 and above is considered good reliability (Salkind, 2010). In the case of the Denison Survey data the alphas for each variable were all above 0.6. The results are contained at Appendix C.

Following this, each sub-construct of the survey was analysed and a mean, standard deviation, 25th percentile, median and 75th percentile were calculated. The mean is also known as the average, and is calculated by summing all the scores and dividing the total by the numbers of scores. The median is that score halfway through the list when consecutively ordered, and the 25th and 75th percentiles are those points occurring at the first quarter and the third quarter in the consecutive list of scores (Salkind, 2010).

In order to obtain a meaningful comparison between the 2011 data and the 2014 data, the means of each construct were compared, as well as the means of each of the four fundamental traits displayed in Denison's model.

Finally, the results reported by Denison themselves in 2011 and 2014 were compared. These reports were prepared using the Denison normative database, hence the additional comparison.

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9.6. Comair Think Vision Climate Survey

The Comair Think Vision Survey (CTVCS) is an internal survey within the company that has been running since 2007. From 2007 until 2010 it was administered by an external consultant, Blueprint Consulting, but as from 2011 it was brought in-house and administered internally (Van der Ryst, 2014).

The survey was developed in conjunction with employees through workshops and focus groups at all levels. Through a process of dialogue the participants came up 28 behaviours, 14 of which were positive and 14 of which were negative. These were arranged into a formula in which the positive attributes (of which they desired more) are represented in the numerator, and the negative attributes (of which they desired less) were placed in the denominator (Liebetrau, 2014)(Van der Ryst, 2014). The net result generates a value attributable to the company.

Figure 27: Comair Climate Principles Equation

It is acknowledged that the diagram is too small to be clearly legible and is reproduced here purely for the purpose of illustrating the equation. The principles or attributes are listed below:

- Top line principles – those of which we desire more:
  - Safety first
  - A great place to work
  - A passion for service
  - Financially sound
  - Dignity and respect
  - Teamwork
  - Socially responsible
  - Market leaders
  - High-performing professional people
  - Expansion and growth
  - Pursue operational excellence
  - Inspiring leadership

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- Leveraging leading technology
- Accountable and responsible

- Bottom line principles – those of which we desire less
  - Arrogance
  - Negative attitudes
  - Bureaucracy
  - Bad planning
  - Damaging our reputation
  - Dropping our standards
  - Dishonesty
  - Inflexible
  - Lack of compliance
  - Accepting mediocrity
  - Broken communication
  - Backstabbing and gossip
  - Not enough of the right resources
  - Favouritism

Further details of each attribute in the equation are contained in Appendix B.

The staff are surveyed annually using a basic Likert scale for each attribute where the options are “yes, neutral or no”. A Likert scale, named after Dr Rensis Likert (1903 – 1981) is a means of ascribing quantitative value to qualitative data, usually on a five-point scale. It traditionally measures levels of agreement or disagreement and a numerical value is assigned to each potential response (Business Dictionary, 2014). In the case of the Think Vision survey, a three-point scale was used. It is worth noting that the response rate for the Think Vision survey conducted in 2014 was 96%, and has not fallen below 85% since 2009 (Comair, 2014b).

9.6.1. Sampling Method and Size – Comair Think Vision Climate Survey

The Think Vision Survey is a pre-existing, or secondary, dataset and as such there is no sampling implication. The 2014 survey elicited 1801 responses out of a pool of approximately 1880 employees (Comair, 2014).

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9.6.2. Methodology – Comair Think Vision Climate Survey

We wished to assess whether the climate at Comair as measured through the CTVCS had changed significantly in the period under review.

Hypothesis 2: *The climate at Comair as measured internally using the CTVCS changed in the period under review.*

A spreadsheet containing the raw data collected in the CTVCS from 2011 to 2014 was obtained as secondary data. As the 2011 data contained no personal information, this data was discarded as it was not possible to determine whether the samples for this year were dependent or independent of those in the following years. The data for years 2012 to 2014 did contain personal identifiers so it was possible to determine that many of the same employees had answered the survey in each of the successive years. Dependent data exists when we measure the same item (or person) in subsequent surveys or analyses, and the responses generated in subsequent surveys are dependent on responses given by that person previously (Flom, 2014). For this reason we could therefore consider the data from the three consecutive surveys as dependent.

To assess whether there was a meaningful change in climate from one year to another, the t-test for dependent samples was conducted. The t-test for dependent samples is used when a single group of the same subjects is being studied under two conditions, or at different points in time (Salkind, 2010).

This test was done for each construct showing the difference in score between 2012 and 2013, 2013 and 2014, and finally 2012 and 2014.

$H_0: \mu_{diff} = 0$ (the mean difference between ratings of individuals does not differ from zero)
$H_1: \mu_{diff} \neq 0$ (the mean difference between ratings of individuals differs from zero)

The level of risk was set at 0.05. This means that there is a probability of less than 5% on any one test that the null hypothesis was rejected in error (Salkind, 2010). The t-statistic was calculated and the p-value was calculated based on the t-statistic. Therefore if the p-value was less than 0.05, H_0 was rejected. (there was a statistically significant difference between ratings). If the p-value was greater than 0.05, H_0 was not rejected. (the differences between ratings were not statistically significant).

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However it must be noted that the samples in the CTVCS were very large which could impact on the results of the test. Even though a result is statistically significant, it may be of low practical significance. In order to be certain that the results were significant; Cohen's d statistic was calculated for each item.

Cohen's d compares the mean of one sample to that of another. Cohen's d then, is a measure of the standardized difference between means; in other words it is the difference between means divided by the standard deviation, and just like the z-score, when we divide a difference by the standard deviation, we are standardizing that difference. This takes into the account the size of the test and provides an indication of the significance with this in mind (Denis, 2014).

d=0.2 (small effect)- low practical significance.
d=0.5 (medium effect) - medium practical significance
d=0.8 (large effect) - high practical significance

Secondly descriptive statistics were extracted from the raw data of the survey. For each variable, the mean, the standard deviation, the 25th percentile, the median and the 75th percentile were calculated. Figure 4 is an example of the calculation of one principle.

Figure 28 Example of descriptive statistics for CTVCS

No	Principle	N	Mean	Std Dev	25th Pctl	Median	75th Pctl
TL1	Safety first	1639	2.5631483	0.6458349	2.00	3.00	3.00

In order to assess the trend of each principle, the mean of each was compared over the period of three years, 2012, 2013 and 2014. In addition, the percentage change was calculated between 2012 and 2014. Given that the means were also available for the total top-line construct as well as the total bottom line construct, the same calculations were performed for these as well. For a full table of results please refer to Appendix D. The findings are represented graphically in chapter 5.

9.7. Comair Annual Financial Reports

The financial statistics used for the research were gleaned from the publically available and audited Comair Annual Reports.

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In order to establish key trends, a summary of the headline numbers was extracted and key financial ratios calculated. The summary of Comair's key financial results is contained at Appendix F.

Hypothesis 3: *Key financial results at Comair changed in the period under review.*

9.8. Limitations

This study presents several limitations. First and most important it is based on one company, Comair Ltd. Consideration should be given to research along similar lines across a broader spectrum of companies.

Secondly the Denison Organisational Culture Survey was only conducted twice. While it is possible to determine the changes between the first survey and the second, it is not possible to chart a general trend. For this to be possible, survey data from a number of years would be required.

Lastly, note must be taken of the statistical limitations of the data in the Comair Think Vision Climate Survey as expressed by Cohen's d. While the author has nevertheless analysed and commented on the movements in the various constructs, their low practical significance must be considered when drawing conclusions.

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Appendix A – Denison Organisational Culture Survey – Questions

Denison Organisational Culture Survey ©

	In Comair	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree	N/A
1	Most employees are highly involved in their work						
2	Decisions are usually made at the level where the best information is available						
3	Information is widely shared so that everyione can get the information he or she needs when it's needed						
4	Everyone believes that he or she can have a positive impact						
5	Business planning is ongoing and involves everyone in the process to some degree						
6	Cooperation across different parts of the organisation is actively encouraged						
7	People work like they are part of a team						
8	Teamwork is used to get work done, rather than heirarchy						
9	Teams are our primary building blocks						
10	Work is organised so that each person can see the relationship between his or her job and the goals of the organisation						

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		1	2	3	4	5	
In Comair		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A
11	Authority is delegated so that people can act on their own						
12	The "bench strength" (capability of people) is constantly improving						
13	There is a continuous investment in the skills of employees						
14	The capabilities of people are viewed as an important source of competitive advantage						
15	Problems often arise because we do not have the skills necessary to do the job						
16	The leaders and managers "practice what they preach"						
17	There is a charismatic management style and a distinct set of management practices						
18	There is a clear and consistent set of values that governs the way we do business						
19	Ignoring core values will get you in trouble						
20	There is an ethical code that guides our behaviour and tells us right from wrong						

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	In Comair	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree	N/A
21	When disagreements occur, we work hard to achieve "win-win" solutions						
22	There is a "strong" culture						
23	It is easy to reach consensus, even on difficult issues						
24	We often have trouble reaching agreement on key issues						
25	There is a clear agreement about the right way and the wrong way to do things						
26	Our approach to doing business is very consistent and predictable						
27	People from different parts of the organisation share a common perspective						
28	It is easy to coordinate projects across different parts of the organisation						
29	Working with someone from another part of this organisation is like working with someone from a different organisation						
30	There is good alignment of goals across levels						

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	In Comair	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree	N/A
31	The way things are done is very flexible and easy to change						
32	We respond well to competitors and other changes in the business environment						
33	New and improved ways to do work are continually adopted						
34	Attempts to create change usually meet with resistance						
35	Different parts of the organisation can cooperate to create change						
36	Customer comments and recommendations often lead to changes						
37	Customer input directly influences our decisions						
38	All members have a deep understanding of customer wants and needs						
39	The interests of the customer often get ignored in our decisions						
40	We encourage direct contact with customers by our people						

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	In Comair	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree	N/A
41	We view failure as an opportunity for learning and improvement						
42	Innovation and risk taking are encouraged and rewarded						
43	Lots of things "fall between the cracks"						
44	Learning is an important objective in our day-to-day work						
45	We make certain that the "right hand knows what the left hand is doing"						
46	There is a long-term purpose and direction						
47	Our strategy leads other organisations to change the way they compete in the industry						
48	There is a clear mission that gives meaning and direction to our work						
49	There is a clear strategy for the future						
50	Our strategic direction is unclear to me						

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		1	2	3	4	5	
In Comair		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A
51	There is widespread agreement about goals						
52	Leaders set goals that are ambitious, but realistic						
53	The leadership has "gone on record" about the objectives we are trying to meet						
54	We continuously track our progress against our stated goals						
55	People understand what needs to be done for us to succeed in the long run						
56	We have a shared vision of what the organisation will be like in the future						
57	Leaders have a long-term viewpoint						
58	Short-term thinking often compromises our long term vision						
59	Our vision creates excitement and motivation for our employees						
60	We are able to meet short-term demands without compromising our long-term vision						

Additional Questions

This is the final set of questions.

Please indicate your level within the organisation

Please indicate the function that you work in

Do you feel that the culture at Comair has changed in the last two years, and if so, how?

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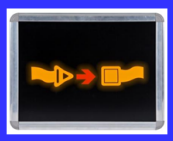
Appendix B – Comair Top and Bottom Line Principles

Top line principles Have to have

Safety First



- No compromise!
- Know the procedures and follow them!
- Implement the audit findings
- Be observant - fully engaged, fully present
- Report ALL incidents

A great place to work

- High performing environment
- Motivate yourself and others
- Come fun with us!!
- Looking out for each other
- Celebrate success

Passion for service

- Deliver on our promises
- Quick to respond
- Willing to go the extra mile
- Do what you love and love what you do
- Create raving fans
- Dedicated & committed

Financially sound

- Happy Customers = Profitability
- Take a long term view
- Sweat the assets
- Look for ways to save money and lower costs

Dignity and respect

- Be reasonable and considerate
- Be willing to listen
- Treat company assets like your own
- Respect views and beliefs of others
- Treat others as you would wish to be treated
- Trust and respect your colleagues

Teamwork

- Be a great person to work with
- Make a proactive contribution
- Work towards a common purpose
- Recognize and utilize each others strengths
- The whole is greater than the sum of its parts
- Break down the barriers

Socially responsible

- Building the Nation
- Environmentally friendly
- Contribute to community welfare

Market leaders

- Creative and Innovative
- Be first to market
- World class standards and initiatives
- Understand the customer and the market
- Big picture thinking
- 'Healthy Paranoia' of falling behind1

High performing, professional people

- Employ and retain the right person for the job
- Coach, mentor and develop our people
- Technically competent and knowledgeable
- Recognize and reward good performance
- Do your best!

Expansion and growth

- Continuously improving 'the way we do things'
- Actively identify and realize opportunities
- Take calculated risks
- Use every opportunity to share and learn

Pursue operational Excellence

- Well maintained aircraft and equipment
- On time departures
- Quick turnarounds
- Consistent high quality – everywhere
- Effective execution of the plan!

Inspiring leadership

- Create a following - be a leader, not a boss
- Lead by example
- Provide clear direction
- Humility – serve your people
- Courage and resilience

Leveraging leading technology

- Identify and realize opportunities to use technology to
  - Grow revenue
  - Improve the customer experience
  - Improve efficiency
- The right technology - well implemented & maintained

Accountable and responsible

- Take ownership of your career
- Make decisions and recommendations
- Be reliable and disciplined
- Problem solving mentality
- Courageous conversations
- Own up to your mistakes

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Bottom line principles Have to eradicate

Arrogance

- Inconsiderate of others
- Assuming you know better
- Not willing to listen or understand
- Autocratic
- Egotistical & over confident

Negative attitudes

- Don't care attitude
- Always moaning
- Entitlement mentality
- Negative energy - demotivating others
- Pessimistic and cynical
- Poor me! - being a victim

Bureaucracy

- Unnecessary barriers and processes
- Paperwork first - customer second
- Analysis paralysis
- Failing to act - the 'boss' makes all the decisions

Bad planning

- Fail to prepare – prepare to fail
- Poor project management
- Fire fighting and reactive
- Doing what's urgent but not important
- Poorly motivated proposals

Damaging our reputation

- Associating with disreputable partners
- Swearing and abusive language
- Rude and inappropriate behaviour
- Bad publicity
- Badmouthing the company
- Poorly presented people and facilities

Dropping our standards

- Failure to follow through
- Poor reporting
- Missing deadlines
- Poor attention to detail

Dishonesty

- Accepting bribes
- Fraud and theft
- Using company resources for personal benefit
- Not telling the truth
- Hiding the relevant facts
- Lack of transparency

Inflexible

- Failure to embrace transformation and diversity
- Fear of experimentation
- Slow to adapt and change
- Being an obstacle to flexibility
- Stuck in a comfort zone
- Rigid - not applying your discretion

Lack of compliance

- Taking the easy way out
- Amending the need for compliance instead of tackling the policy
- Giving into pressure
- Failure to follow policies & procedures
- Non compliance with legislation
- Creating unnecessary risk

Accepting mediocrity

- Turning a blind eye
- Average is good enough
- Complacency
- Tolerating poor performance

Broken communication

- Waiting to be told
- Assuming that everyone knows and understands
- Using the wrong medium
- Failing to keep the customer informed
- Ambiguous
- Failing to include all affected parties

Backstabbing and Gossip

- Office politics
- Feeding the rumour network
- Not bothering to get the facts
- Cliques
- Blame and accusation

Not enough of the right resources

- Insufficient capacity to deliver
- Ineffective systems and processes
- Wrong person for the job
- Not considering all costs and benefits

Favouritism

- Discrimination
- Different rules for different people
- Preferential treatment
- Inconsistent and unfair

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Appendix C – Denison Organisational Culture Survey Cronbach's Alpha

	Cronbach's Alpha	
	2011	2014
Empowerment	0.634157	0.784430
Team orientation	0.745879	0.703688
Capability development	0.616345	0.615608
Core values	0.636543	0.764879
Agreement	0.646559	0.693760
Coordination and Integration	0.636440	0.750476
Creating change	0.649409	0.642928
Customer focus	0.795840	0.638824
Organisational learning	0.612757	0.735772
Strategic direction and intent	0.722689	0.794353
Goals and objectives	0.739946	0.748599
Vision	0.633990	0.742141
Adaptability	0.788329	0.838088
Mission	0.831330	0.884327
Consistency	0.790894	0.861140
Involvement	0.805021	0.809926
Flexible	0.876588	0.900301
Stable	0.875441	0.924111
External Focus	0.859768	0.913860
Internal Focus	0.869831	0.902050

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Appendix D - Comair Think Vision Climate Survey Descriptive Analysis

Principle	Mean			Diff to Prev Year		Diff 2012 to 2014	% Change '12 to '14
	2012	2013	2014	2013	2014		
Safety first	2.5631	2.6605	2.7045	0.10	0.04	0.14	5.5%
A great place to work	2.2149	2.3807	2.4463	0.17	0.07	0.23	10.4%
Passion for service	2.4260	2.5096	2.5220	0.08	0.01	0.10	4.0%
Financially sound	2.4181	2.6257	2.6767	0.21	0.05	0.26	10.7%
Dignity and respect	2.2695	2.3169	2.3439	0.05	0.03	0.07	3.3%
Teamwork	2.3392	2.4237	2.4196	0.08	(0.00)	0.08	3.4%
Socially responsible	2.2691	2.3976	2.3957	0.13	(0.00)	0.13	5.6%
Market leaders	2.4424	2.5235	2.6055	0.08	0.08	0.16	6.7%
High performing professional people	2.2635	2.3302	2.3684	0.07	0.04	0.10	4.6%
Expansion and growth	2.1844	2.3337	2.3968	0.15	0.06	0.21	9.7%
Pursue operational excellence	2.2512	2.4440	2.5014	0.19	0.06	0.25	11.1%
Inspiring leadership	2.1510	2.2559	2.2727	0.10	0.02	0.12	5.7%
Leveraging leading technology	2.3380	2.4568	2.5248	0.12	0.07	0.19	8.0%
Accountable and responsible	2.3437	2.4196	2.4524	0.08	0.03	0.11	4.6%
Arrogance	1.8966	1.8641	1.8497	(0.03)	(0.01)	0.05	2.5%
Negative attitudes	2.0900	1.9675	1.9288	(0.12)	(0.04)	0.16	7.7%
Bureaucracy	1.8629	1.7828	1.7340	(0.08)	(0.05)	0.13	6.9%
Bad planning	1.9302	1.7393	1.7173	(0.19)	(0.02)	0.21	11.0%
Damaging our reputation	1.7062	1.5186	1.4953	(0.19)	(0.02)	0.21	12.4%
Dropping our standards	1.6879	1.5256	1.5192	(0.16)	(0.01)	0.17	10.0%
Dishonesty	1.5692	1.5139	1.4636	(0.06)	(0.05)	0.11	6.7%
Inflexible	1.7497	1.6394	1.6683	(0.11)	0.03	0.08	4.6%
Lack of compliance	1.6316	1.4774	1.4680	(0.15)	(0.01)	0.16	10.0%
Accepting mediocrity	1.8588	1.7915	1.7490	(0.07)	(0.04)	0.11	5.9%
Broken communication	2.0049	1.8264	1.8370	(0.18)	0.01	0.17	8.4%
Backstabbing and gossip	2.1928	2.1823	2.1725	(0.01)	(0.01)	0.02	0.9%
Not enough of the right resources	1.9387	1.7462	1.6950	(0.19)	(0.05)	0.24	12.6%
Favouritism	2.0324	2.0081	1.9783	(0.02)	(0.03)	0.05	2.7%
Top line principles	2.3187	2.4342	2.4736	0.12	0.04	0.15	6.7%
Bottom line principles	1.8679	1.7559	1.7340	(0.11)	(0.02)	0.13	7.2%

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Appendix E - Comair Think Vision Climate Survey t-test for dependent samples, Cohen's d statistic

Variable	Principle	Diff	N	Mean	Std Dev	Std Error	t Value	Pr > |t|	Cohen's d
tl1dif23	Safety first	2012 - 2013	1379	-0.06672	0.672852	0.018119	-3.68	0.0002	0.09915
tl2dif23	A great place to work	2012 - 2013	1387	-0.11391	0.726732	0.019514	-5.84	<.0001	0.15675
tl3dif23	Passion for service	2012 - 2013	1381	-0.042	0.721092	0.019404	-2.16	0.0306	0.05824
tl4dif23	Financially sound	2012 - 2013	1383	-0.19234	0.732163	0.019688	-9.77	<.0001	0.26270
tl5dif23	Dignity and respect	2012 - 2013	1384	-0.01373	0.769417	0.020682	-0.66	0.5069	0.01784
tl6dif23	Teamwork	2012 - 2013	1379	-0.05656	0.798033	0.02149	-2.63	0.0086	0.07088
tl7dif23	Socially responsible	2012 - 2013	1379	-0.10297	0.774867	0.020866	-4.93	<.0001	0.13289
tl8dif23	Market leaders	2012 - 2013	1381	-0.06083	0.714696	0.019232	-3.16	0.0016	0.08511
tl9dif23	High performing professional people	2012 - 2013	1383	-0.02458	0.801213	0.021545	-1.14	0.254	0.03068
tl10dif23	Expansion and growth	2012 - 2013	1383	-0.10918	0.806322	0.021682	-5.04	<.0001	0.13541
tl11dif23	Pursue operational excellence	2012 - 2013	1380	-0.17899	0.76299	0.020539	-8.71	<.0001	0.23458
tl12dif23	Inspiring leadership	2012 - 2013	1382	-0.07236	0.793148	0.021335	-3.39	0.0007	0.09123
tl13dif23	Leveraging leading technology	2012 - 2013	1382	-0.10203	0.719348	0.01935	-5.27	<.0001	0.14183
tl14dif23	Accountable and responsible	2012 - 2013	1384	-0.04119	0.732794	0.019698	-2.09	0.0367	0.05620
bl1dif23	Arrogance	2012 - 2013	1376	0.023983	0.878929	0.023694	1.01	0.3116	0.02729
bl2dif23	Negative attitudes	2012 - 2013	1374	0.090975	0.884284	0.023856	3.81	0.0001	0.10288
bl3dif23	Bureaucracy	2012 - 2013	1375	0.025455	0.82541	0.02226	1.14	0.253	0.03084
bl4dif23	Bad planning	2012 - 2013	1375	0.144727	0.848065	0.022871	6.33	<.0001	0.17066
bl5dif23	Damaging our reputation	2012 - 2013	1375	0.170909	0.841447	0.022692	7.53	<.0001	0.20311
bl6dif23	Dropping our standards	2012 - 2013	1375	0.117091	0.781029	0.021063	5.56	<.0001	0.14992
bl7dif23	Dishonesty	2012 - 2013	1375	0.018909	0.812703	0.021917	0.86	0.3884	0.02327
bl8dif23	Inflexible	2012 - 2013	1375	0.077091	0.757221	0.020421	3.78	0.0002	0.10181
bl9dif23	Lack of compliance	2012 - 2013	1375	0.128727	0.738924	0.019927	6.46	<.0001	0.17421
bl10dif23	Accepting mediocrity	2012 - 2013	1376	0.030523	0.812949	0.021916	1.39	0.1639	0.03755
bl11dif23	Broken communication	2012 - 2013	1375	0.144	0.858847	0.023161	6.22	<.0001	0.16767
bl12dif23	Backstabbing and gossip	2012 - 2013	1375	-0.01091	0.881987	0.023785	-0.46	0.6466	0.01237
bl13dif23	Not enough of the right resources	2012 - 2013	1373	0.150036	0.833471	0.022493	6.67	<.0001	0.18001
bl14dif23	Favouritism	2012 - 2013	1375	-0.00945	0.861128	0.023223	-0.41	0.684	0.01098
tldif23	Top line	2012 - 2013	1387	-0.08337	0.38635	0.010374	-8.04	<.0001	0.21579
bldif23	Bottom line	2012 - 2013	1376	0.078696	0.474202	0.012784	6.16	<.0001	0.16596
tl1dif24	Safety first	2012 - 2014	1308	-0.10092	0.679055	0.018776	-5.37	<.0001	0.14861
tl2dif24	A great place to work	2012 - 2014	1316	-0.17325	0.751424	0.020714	-8.36	<.0001	0.23057
tl3dif24	Passion for service	2012 - 2014	1310	-0.05802	0.725815	0.020054	-2.89	0.0039	0.07993
tl4dif24	Financially sound	2012 - 2014	1312	-0.24466	0.735118	0.020295	-12.06	<.0001	0.33282
tl5dif24	Dignity and respect	2012 - 2014	1313	-0.03503	0.779104	0.021501	-1.63	0.1035	0.04497
tl6dif24	Teamwork	2012 - 2014	1308	-0.04664	0.816882	0.022587	-2.06	0.0391	0.05709
tl7dif24	Socially responsible	2012 - 2014	1308	-0.0818	0.769665	0.021281	-3.84	0.0001	0.10629
tl8dif24	Market leaders	2012 - 2014	1310	-0.12443	0.684165	0.018903	-6.58	<.0001	0.18187
tl9dif24	High performing professional people	2012 - 2014	1312	-0.06098	0.778781	0.021501	-2.84	0.0046	0.07830
tl10dif24	Expansion and growth	2012 - 2014	1312	-0.15701	0.824702	0.022768	-6.9	<.0001	0.19039
tl11dif24	Pursue operational excellence	2012 - 2014	1309	-0.24752	0.781966	0.021613	-11.45	<.0001	0.31653
tl12dif24	Inspiring leadership	2012 - 2014	1311	-0.07704	0.779126	0.021518	-3.58	0.0004	0.09888
tl13dif24	Leveraging leading technology	2012 - 2014	1311	-0.16781	0.777097	0.021462	-7.82	<.0001	0.21595
tl14dif24	Accountable and responsible	2012 - 2014	1313	-0.04722	0.74032	0.020431	-2.31	0.021	0.06378
bl1dif24	Arrogance	2012 - 2014	1306	0.015314	0.887415	0.024556	0.62	0.533	0.01726
bl2dif24	Negative attitudes	2012 - 2014	1305	0.131801	0.85772	0.023743	5.55	<.0001	0.15366
bl3dif24	Bureaucracy	2012 - 2014	1305	0.065134	0.815618	0.022578	2.88	0.004	0.07986
bl4dif24	Bad planning	2012 - 2014	1305	0.138697	0.811108	0.022453	6.18	<.0001	0.17100
bl5dif24	Damaging our reputation	2012 - 2014	1305	0.167816	0.822539	0.022769	7.37	<.0001	0.20402
bl6dif24	Dropping our standards	2012 - 2014	1305	0.111877	0.774233	0.021432	5.22	<.0001	0.14450
bl7dif24	Dishonesty	2012 - 2014	1305	0.065134	0.765166	0.021181	3.08	0.0021	0.08512
bl8dif24	Inflexible	2012 - 2014	1305	0.041379	0.765317	0.021185	1.95	0.051	0.05407
bl9dif24	Lack of compliance	2012 - 2014	1305	0.132567	0.727456	0.020137	6.58	<.0001	0.18223
bl10dif24	Accepting mediocrity	2012 - 2014	1306	0.083461	0.822063	0.022748	3.67	0.0003	0.10153
bl11dif24	Broken communication	2012 - 2014	1305	0.112644	0.861783	0.023856	4.72	<.0001	0.13071
bl12dif24	Backstabbing and gossip	2012 - 2014	1305	0.003831	0.868228	0.024034	0.16	0.8734	0.00441
bl13dif24	Not enough of the right resources	2012 - 2014	1304	0.207055	0.846688	0.023447	8.83	<.0001	0.24455
bl14dif24	Favouritism	2012 - 2014	1305	0.030651	0.856576	0.023712	1.29	0.1964	0.03578
tldif24	Top line	2012 - 2014	1316	-0.11756	0.400977	0.011053	-10.64	<.0001	0.29318
bldif24	Bottom line	2012 - 2014	1306	0.093634	0.462546	0.012799	7.32	<.0001	0.20243
tl1dif34	Safety first	2013 - 2014	1515	-0.03828	0.608059	0.015622	-2.45	0.0144	0.06296
tl2dif34	A great place to work	2013 - 2014	1515	-0.0297	0.707417	0.018175	-1.63	0.1024	0.04199
tl3dif34	Passion for service	2013 - 2014	1515	0.007261	0.706135	0.018142	0.4	0.6891	0.01028
tl4dif34	Financially sound	2013 - 2014	1515	-0.05347	0.647457	0.016634	-3.21	0.0013	0.08258
tl5dif34	Dignity and respect	2013 - 2014	1515	-0.0066	0.738601	0.018976	-0.35	0.728	0.00894
tl6dif34	Teamwork	2013 - 2014	1515	0.034984	0.744485	0.019127	1.83	0.0676	0.04699
tl7dif34	Socially responsible	2013 - 2014	1515	0.028383	0.719505	0.018485	1.54	0.1249	0.03945
tl8dif34	Market leaders	2013 - 2014	1515	-0.06073	0.662455	0.01702	-3.57	0.0004	0.09167
tl9dif34	High performing professional people	2013 - 2014	1515	-0.00924	0.757992	0.019474	-0.47	0.6352	0.01219
tl10dif34	Expansion and growth	2013 - 2014	1515	-0.0429	0.765078	0.019656	-2.18	0.0292	0.05608
tl11dif34	Pursue operational excellence	2013 - 2014	1515	-0.04158	0.729805	0.01875	-2.22	0.0267	0.05698
tl12dif34	Inspiring leadership	2013 - 2014	1515	0.015182	0.760071	0.019528	0.78	0.437	0.01997
tl13dif34	Leveraging leading technology	2013 - 2014	1515	-0.05281	0.691415	0.017764	-2.97	0.003	0.07637
tl14dif34	Accountable and responsible	2013 - 2014	1515	-0.01386	0.687071	0.017652	-0.79	0.4324	0.02018
bl1dif34	Arrogance	2013 - 2014	1514	-0.00661	0.834617	0.02145	-0.31	0.7582	0.00791
bl2dif34	Negative attitudes	2013 - 2014	1514	0.003303	0.839768	0.021582	0.15	0.8784	0.00393
bl3dif34	Bureaucracy	2013 - 2014	1514	0.009247	0.82343	0.021162	0.44	0.6622	0.01123
bl4dif34	Bad planning	2013 - 2014	1514	-0.00594	0.804378	0.020673	-0.29	0.7737	0.00739
bl5dif34	Damaging our reputation	2013 - 2014	1514	0.009247	0.763454	0.019621	0.47	0.6375	0.01211
bl6dif34	Dropping our standards	2013 - 2014	1514	-0.02048	0.720929	0.018528	-1.11	0.2693	0.02840
bl7dif34	Dishonesty	2013 - 2014	1514	0.027081	0.734338	0.018873	1.43	0.1515	0.03688
bl8dif34	Inflexible	2013 - 2014	1514	-0.0502	0.769625	0.01978	-2.54	0.0113	0.06522
bl9dif34	Lack of compliance	2013 - 2014	1514	-0.00793	0.675266	0.017355	-0.46	0.6479	0.01174
bl10dif34	Accepting mediocrity	2013 - 2014	1514	0.020476	0.784165	0.020153	1.02	0.3098	0.02611
bl11dif34	Broken communication	2013 - 2014	1514	-0.03897	0.847492	0.021781	-1.79	0.0738	0.04598
bl12dif34	Backstabbing and gossip	2013 - 2014	1514	-0.00793	0.812943	0.020893	-0.38	0.7045	0.00975
bl13dif34	Not enough of the right resources	2013 - 2014	1514	0.03963	0.800538	0.020574	1.93	0.0543	0.04950
bl14dif34	Favouritism	2013 - 2014	1514	0.028402	0.820176	0.021079	1.35	0.1781	0.03463
tldif34	Top line	2013 - 2014	1515	-0.01881	0.353615	0.009085	-2.07	0.0386	0.05320
bldif34	Bottom line	2013 - 2014	1514	-4.70E-05	0.445549	0.011451	0	0.9967	0.00011

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Appendix F - Comair Headline Financial Results

Comair Ltd

Income Statement	2007	2008	2009	2010	2011	2012	2013	2014
Revenue	2,211,743	2,688,488	3,048,782	3,009,544	3,587,754	4,162,938	5,386,581	6,282,219
Profit from Operations (R'000)	169,768	112,124	128,699	143,993	117,772	20,787	373,810	416,774
Profit before Tax (R'000)	157,476	103,498	113,764	124,071	106,463	10,883	330,661	373,910
Profit after tax (R'000)	109,163	61,803	73,049	89,707	76,997	7,681	227,526	264,851
Earnings per Share (cents)	27.3	15.4	18.2	22.0	15.9	1.6	47.0	58.4

Comair Ltd

Balance Sheet	2007	2008	2009	2010	2011	2012	2013	2014
Non-Current Assets	764,769	976,910	1,043,623	1,144,853	1,319,025	1,496,409	2,361,275	2,586,419
Current Assets	379,516	465,519	657,163	877,720	784,596	709,358	1,244,581	1,436,929
Capital and Reserves	425,531	459,942	517,722	725,275	800,521	814,461	1,021,200	1,067,970
Non-Current Liabilities	280,718	405,050	428,892	267,439	371,503	184,946	1,273,713	1,372,427
Current Liabilities	438,036	577,437	754,172	1,029,859	931,597	1,206,360	1,310,943	1,582,951

(Source: Comair Annual Financial Reports, 2007 – 2014)

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Comair Ltd

Key Ratios	2007	2008	2009	2010	2011	2012	2013	2014
Operating Profit %	7.7%	4.2%	4.2%	4.8%	3.3%	0.5%	6.9%	6.6%
Net Profit %	4.9%	2.3%	2.4%	3.0%	2.1%	0.2%	4.2%	4.2%
Current Ratio			0.87	0.85	0.84	0.59	0.95	0.91
Return on Assets %	N/A	4.8%	4.6%	4.8%	3.7%	0.4%	7.8%	6.9%
Return on Equity %	N/A	14.0%	14.9%	14.4%	10.1%	1.0%	24.8%	25.4%
Debt Ratio	0.63	0.68	0.70	0.64	0.62	0.63	0.72	0.73
Debt Equity Ratio	1.69	2.14	2.29	1.79	1.63	1.71	2.53	2.77

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Appendix G - Comair permission

Lachlan Harris CA (SA)

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RANDBURG
2194

Cell: 082 779 3429
After hours: 011 678 4932
E Mail: lachlan@amid.co.za
harrisl@telkomsa.net

14 July 2014

Dear Eve

GIBS MBA 2014: INTEGRATIVE BUSINESS RESEARCH PROJECT ETHICAL CLEARANCE

As a GIBS MBA student I am required to complete a research project in a topic of my choice. I have selected Organisational Culture and specifically the evolution of an organisation's culture as it transitions through a period of change.

Following from our initial meeting, I would very much like to conduct the research on Comair Ltd. Comair would make an ideal subject due to the nature of the changes that have taken place over the last five years. This together with your belief in the management of human capital and the abundant data collected over the years will make a study of Comair not only feasible but also valuable in further understanding organisational culture.

My research will involve a detailed analysis of the organisational climate data that you have collected for the last eight years as well as the Denison cultural survey conducted in 2012. It is my proposal to commission another Denison survey so that we have two sets of data, the first from prior to the changes, and the second post the changes. We will then compare this data to the existing in-house data which has been collected throughout. The study will determine two things:

- The effect of the changes at Comair on the organisational culture as measured independently and benchmarked against other international organisations.
- Secondly we will be able to test the validity of your in-house surveys against the externally obtained data.

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I require your permission to conduct this research into Comair Ltd. Participation is of course voluntary and all data obtained will be kept confidential and will not be released to any other party without your express permission. I confirm that no information gathered for the purposes of this report will be retained post submission date of the final document, and all information gathered will be either returned to the original owner or appropriately destroyed.

If you have any concerns, please contact either myself or either of my supervisors. Contact details are contained below.

Thank you for the opportunity and I look forward to your favourable response.

Kind regards

Lachlan Harris

Contact details:

Researcher:

Lachlan Harris	lachlan@amid.co.za	082 779 3429

Supervisor 1:

Dr Caren Scheepers	caren.scheepers@irodo.com	082 922 7072

Supervisor 2:

Ms Maxine Jaffit	Maxine.jaffit@gmail.com	082 451 4622

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You replied to this message on 2014-07-17 8:08 PM.
This message was sent with High importance.

From: Eve Liebetrau <eve.liebetrau@comair.co.za> Sent: Thu 2014-07-17 2:30 PM
To: Lachlan Harris
Cc: Caren Scheepers; 'Maxine Jaffit'
Subject: RE: APPLICATION FOR PERMISSION TO CONDUCT RESEARCH

Dear Lachlan
My apologies that it has taken a couple of days to get back to you. I have been out of the office quite a bit with limited access to email. Please don't hesitate to make contact with me on my cell phone no at any stage (0828089985).

Regarding permission to procede with your research, I confirm on behalf of Comair Ltd that we are delighted to be involved and look forward to assisting you with your research.

Kind regards
Eve

Eve Liebetrau
Executive Manager Human Resources

F: +27 11 921 0175
e: eve.liebetrau@comair.co.za

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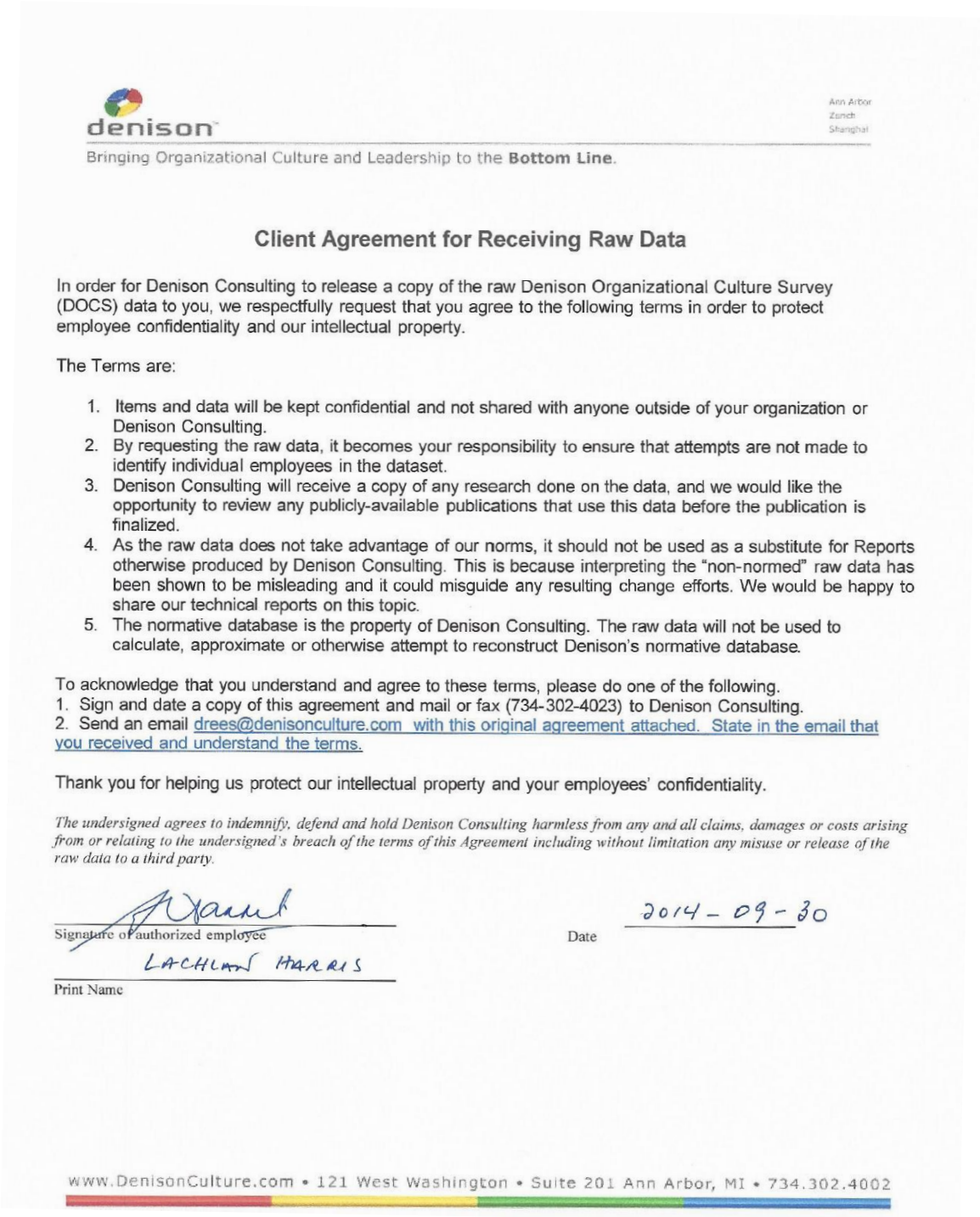
Appendix H - Denison Consulting non-disclosure declaration by the author



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Bringing Organizational Culture and Leadership to the **Bottom Line**.

Client Agreement for Receiving Raw Data

In order for Denison Consulting to release a copy of the raw Denison Organizational Culture Survey (DOCS) data to you, we respectfully request that you agree to the following terms in order to protect employee confidentiality and our intellectual property.

The Terms are:

1. Items and data will be kept confidential and not shared with anyone outside of your organization or Denison Consulting.
2. By requesting the raw data, it becomes your responsibility to ensure that attempts are not made to identify individual employees in the dataset.
3. Denison Consulting will receive a copy of any research done on the data, and we would like the opportunity to review any publicly-available publications that use this data before the publication is finalized.
4. As the raw data does not take advantage of our norms, it should not be used as a substitute for Reports otherwise produced by Denison Consulting. This is because interpreting the "non-normed" raw data has been shown to be misleading and it could misguide any resulting change efforts. We would be happy to share our technical reports on this topic.
5. The normative database is the property of Denison Consulting. The raw data will not be used to calculate, approximate or otherwise attempt to reconstruct Denison's normative database.

To acknowledge that you understand and agree to these terms, please do one of the following.
1. Sign and date a copy of this agreement and mail or fax (734-302-4023) to Denison Consulting.
2. Send an email drees@denisonculture.com with this original agreement attached. State in the email that you received and understand the terms.

Thank you for helping us protect our intellectual property and your employees' confidentiality.

The undersigned agrees to indemnify, defend and hold Denison Consulting harmless from any and all claims, damages or costs arising from or relating to the undersigned's breach of the terms of this Agreement including without limitation any misuse or release of the raw data to a third party.

Signature of authorized employee

Date 2014-09-30

LACHLAN HARRIS

Print Name

www.DenisonCulture.com • 121 West Washington • Suite 201 Ann Arbor, MI • 734.302.4002

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