

# ORGANISATIONAL CULTURE AND FINANCIAL PERFORMANCE IN A SOUTH AFRICAN INVESTMENT BANK

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## ABSTRACT

The relationship between the organisational culture and financial performance of a South African investment bank was explored in this study. The Denison Organizational Culture Survey was used to measure the organisational culture and was administered to a sample of 327 employees. Income statement ratio analyses were used to assess the financial performance. The validity and reliability of the Denison Organizational Culture Survey was examined in a South African context for the first time. High correlations between the cultural traits suggested that the items were measuring a single trait rather than four distinguishable traits. Correlations above the 0.50 level between some subscales (team orientation, agreement, customer focus, core values and vision) and certain financial ratios were obtained. However, the results were regarded as tentative, because statistical significance was not reached for most of the correlations. The cultural trait consistency was significantly correlated with two of the four profitability ratios.

### Key words

Denison Organisational Culture Survey, cultural trait, financial performance, income statement ratio analysis, investment bank, organisational culture, profitability ratios

Concern with the effectiveness, productivity, efficiency and excellence of organisations has served as a unifying theme of research on the management and design of organisations for more than a century. It has also motivated the writings of economists, organisation theorists, management philosophers, financial analysts, management scientists, consultants and practitioners. Empirical research has, however, not contributed to the development of a universal theory of organisational effectiveness. Another limitation has been that measures of effectiveness have often been based on a set of subjective measures (Lewin & Minton, 1986; Pounder, 2001).

The entrance of new competitors into the financial services arena in South Africa during the past decade has had a profound effect on the banking industry. During the apartheid years when economic sanctions were imposed on the country, South African organisations were not overly concerned with internal effectiveness and price competitiveness, because the local environment was less competitive than at present as there were few multinational firms operating within the country (Marx, De Swart & Nortjé, 1999; Van der Post, De Coning & Smit, 1998). Since the first democratic elections new competitors have moved in and South African organisations have expanded their horizons internationally. This trend is also apparent in the investment banking sector. New models of management require managers in the banking industry to be more knowledgeable about their markets and also more competitive in how they approach them. In general, banks have not competed on the basis of cost and the margins of return on most banking products and services have been relatively small (Paradise-Tornow, 1991). Whereas quality of service is a key differentiating factor for attracting and retaining customers, it appears that sound financial management is necessary to keep abreast of the competition (Marx et al, 1999).

In order to achieve the desired level of financial performance, many organisations have restructured, merged, benchmarked, re-engineered, implemented total quality management programmes and introduced competitive staff benefits. Despite such attempts, many organisations have not achieved the anticipated results or have not experienced high performance

(Jeuchter, Fisher & Alford, 1998). Analyses of sustained superior financial performance of certain American organisations have attributed their success to the specific cultures of the respective organisations (Deal & Kennedy, 1982; Flamholtz, 2001 Lewis, 1994; Ouchi, 1981; Peters & Waterman, 1982; Schlechter, 2001). Culture sets the boundaries by providing employees with a set of normative rules to regulate certain aspects of their behaviour which gives rise to attitudes, motivations and a sense of shared identity that contributes to organisations' effectiveness (Rollinson, 2005). No change will provide sustainable performance unless an organisation's culture and employees are fully prepared and aligned to support that change. Culture is what distinguishes truly high-performing organisations from the rest (Jeuchter et al., 1998; Ortiz & Arnborg, 2005). The first systematic attempt to understand Western organisations in cultural terms occurred during the late 1920s with the well-known Hawthorne studies at the Western Electric Company (Van der Post et al, 1998). These studies highlighted the importance of the culture of a work group, which was found to have a greater impact on productivity than either technology or working conditions (Schuster, 1986). The human relations movement sparked by the Hawthorne studies is directly relevant to current efforts to understand and manage corporate culture (Kilman, Saxton & Serpa, 1986). Likert (1961) emphasised the need for a corporate culture of cooperation and demonstrated that there is a significant correlation between employee attitudes and performance. Pragmatic interest in how Japan, as an industrial society, had achieved its outstanding and envied economic success led to a high incidence of books and research papers based on comparative studies of the cultures in Japanese and Western organisations, and how these cultures impact on productivity (Flamholtz, 2001; Ouchi, 1981; Shaw, 1997).

In a series of studies conducted between 1987 and 1991, Kotter and Heskett (1992) established that corporate culture has a significant effect on organisations' long-term sustainability and economic performance. They found that organisations with a deeply entrenched culture had greater revenue increases, larger workforce expansions, larger increases in share prices, and larger improvements in net income than their counterparts with weaker cultures. Peters and Waterman (1982) identified 36

American companies that had displayed excellent performance between 1961 and 1980 in terms of compounded asset growth, average turnover growth, mean ratio of market to book value, average return on capital, average return on equity and average return on sales. Their research indicated certain direct links between corporate culture and financial performance.

Another study conducted by Tidball (1988) highlighted the importance of establishing linkages between the elements of organisational culture and outcomes, such as profitability, turnover and commitment. She indicated that congruence of beliefs appeared to create a unifying force that boosts organisational performance. When people can clearly see the link between their behaviour and the profitability of the organisation, those behaviours will tend to be reinforced. Tidball's (1988) study indicated that culture is a force that affects employee behaviour and the success of a company. Denison (1990) also found compelling relationships between organisational culture and bottom-line business performance in the research that he conducted over a 15-year period with more than 1000 participating organisations. The study conducted by Denison was the most extensive quantitative study on corporate culture and organisational performance in which return on investment, return on equity, and return on sales were shown to be linked to certain cultural traits (Calori & Sarnin, 1991).

Recent studies thus indicated that corporate culture impacts on organisations' long-term financial performance and will probably be an important factor in determining the success or failure of organisations during the next decade (Ortiz & Arnborg, 2005; Schlechter, 2000, 2001). It is possible to develop corporate cultures that inhibit long-term financial performance and this may happen despite the fact that the organisation is staffed by reasonable and intelligent people. However, corporate culture is not static. Although it is difficult to change, it can be made more performance enhancing (Kotter & Heskett, 1992).

While it has been suggested that culture accounts for the economic performance of various countries (Hofstede & Bond, 1988), the idea of a corporate culture also serves to provide a basis for understanding the differences that may exist between successful companies operating in the same national culture (Schein, 1990). Peters and Waterman (1982) stated that successful organisations possess certain cultural traits of excellence, and Ouchi (1981) presented a similar relationship between corporate culture and increased productivity. Deal and Kennedy (1982) also argued for the importance of a strong culture in contributing towards successful financial performance. Despite the claims that a link exists between organisational culture and financial performance, few studies appear to have actually examined the existence and the nature of this relationship (Lim, 1995), or presented supporting evidence for it (Denison & Mishra, 1995).

The quantitative studies linking organisational performance to financial performance have generally been conducted in the United States of America. In a South African study, Van der Post et al. (1998) involved 128 organisations listed on the Johannesburg Stock Exchange in an attempt to understand the relationship between organisational culture and financial performance. The financial performance measures used in the study were return on average equity, return on average assets, total asset growth and share return. Their findings indicated that not all the elements of culture correlated significantly with financial performance. However, the elements of culture that were found to have a positive impact on financial performance were, firstly, strategic vision that included organisational values widely accepted by organisational members. Secondly, alignment of culture and core values to the business strategy, and, thirdly, recruitment, orientation and initial training programmes that are designed to communicate the core values of the organisation to the employees were also predictive of financial performance.

There are many instruments designed to measure organisational culture available in the South African context, but very few of them have been studied scientifically to determine whether they are in fact valid measures of organisational culture. In addition to this, the instruments that measure culture do not indicate how the culture is likely to influence the financial performance of the organisation (Van der Post et al., 1998).

The core reason for the existence of most organisations is to make a profit for its owners or shareholders. Even in the case of non-profit organisations, sound financial management is required in order to remain in business. If an organisation cannot survive financially, it will have to cease its operations (Gitman, 1991). Financial performance is thus the key focus of many line managers and any initiative that does not relate to the achievement of this objective is rarely regarded as being important. Culture is often described as something that is intangible, difficult to understand and important to focus on, if there is time (Martin, 2005). However, the reality of the current business world is that there is rarely time to focus on factors that are not essential for the achievement of business objectives. Being able to use a culture model that shows a direct link between culture and performance in the long term can elevate the importance of the concept of organisational culture in the South African business environment.

Despite the amount of literature on the relationship between organisational culture and financial performance, there is not much statistical evidence supporting this relationship (Calori & Sarnin, 1991; Van der Post et al., 1998). The research conducted by Denison (1990) was the most extensive quantitative study on organisational culture and financial performance. Although a significant amount of research has been conducted using the Denison Organizational Culture Survey, there have been no studies of this nature in South Africa. This research is thus an attempt to establish whether a relationship exists between organisational culture and financial performance in a South African investment banking organisation.

Studies relating organisational culture to performance tended to differ in terms of the performance measures that were used across the types of organisations studied. This was to be expected, because performance measures generally relate to the extent to which goals relevant to the specific organisation are attained (Lim, 1995). A further aim of the present study was therefore to select appropriate indices for the measurement of financial performance of an investment bank.

The following specific research questions were addressed in the research project:

- What is the organisational culture profile of a South African investment banking organisation?
- How can the financial performance of a South African investment banking organisation be conceptualised and what are its key aspects?
- Does a relationship exist between the organisational culture profile and the financial performance of a South African investment banking organisation? If yes, what is the nature and implications of this relationship?

## RESEARCH DESIGN

### Research approach

An exploratory non-experimental field study was conducted to study the relationships among continuous variables by means of quantitative methodology.

### Participants

The population consisted of the 497 permanent employees of an investment bank that operated in three regions across the country. Employees from 14 different departments of the bank were involved in the study. Seven of these departments

represented support services or group operations and thus operated as cost centres rather than revenue generating units. The profitability of these departments could therefore not be examined, which meant that they had to be excluded from the computation of the relationship between culture and financial performance. For some of the analyses, the non-revenue generating departments were regarded as a single department. The profitability and culture profiles of the seven income generating departments as separate business units were explored.

All the employees were formally invited to participate in the research, but the eventual sample consisted of 327 respondents who completed the questionnaire. Several of the employees were away on leave or business, or had to attend to tasks that did not allow them to participate in the survey. A response rate of 66 percent of the population was attained.

Forty-eight percent of the sample was employed on a clerical, supervisory or junior management level, 46% were middle or senior managers, and 6% were employed on a general management or executive level. Seventy percent of the respondents were working in Johannesburg, 27% in Cape Town and 3% in Durban. In terms of racial composition, the majority of the respondents were White (68,6%), whereas the other racial groups were represented as follows: Indian (7,4%), African (10,6%) and Coloured (13,5%).

The revenue-generating departments were represented in the sample as follows: Corporate Finance (N = 16), Capital Account/Internal Operations (N = 5), Multi-Manager/Marketing (N = 22), Corporate Equities (N = 6), Property (N = 42), Structured and Project Finance (N = 32), and Treasury (N = 72). Approximately six percent of the employees had been employed by the bank for less than six months, whereas 51.4% had been working at the bank for six months to 5 years. A substantial proportion of the sample (42,8%) had been employed for longer than five years.

#### Measuring instruments

The independent variable, organisational culture, was measured using the Denison Organizational Culture Survey (Denison, 1990). The dependent variable, financial performance, was measured by means of six profitability ratios.

#### Denison Organizational Culture Survey

The self-report survey questionnaire (Denison, 1990) is based on 15 years of research using more than 1000 organisations and 40 000 individuals. It has 60 items measured on a 5-point Likert scale that focus on four cultural traits (involvement, consistency, mission and adaptability). These traits can have a significant impact on organisational performance in areas such as profitability, quality, sales growth, and employee satisfaction. The survey measures the cultural traits in three indices each, as depicted in Figure 1. The framework presented in Figure 1 depicts the contrast between internal integration and external adaptation, and that between change and stability. For example, involvement and consistency have as their focus the dynamics of internal integration, whereas mission and adaptability address the dynamics of external adaptation. This focus is consistent with Schein's (1990) observation that culture develops as an organisation learns to cope with the dual problems of external adaptation and internal integration. In addition, involvement and adaptability describe traits related to an organisation's flexibility or ability to change, whereas consistency and mission are more likely to contribute to an organisation's capacity to remain stable and predictable over time. Instead of arguing, however, that the classification of an organisation's culture should be an either/or type of decision, this framework assumes that an effective culture should provide all of these elements (Denison & Mishra, 1995).

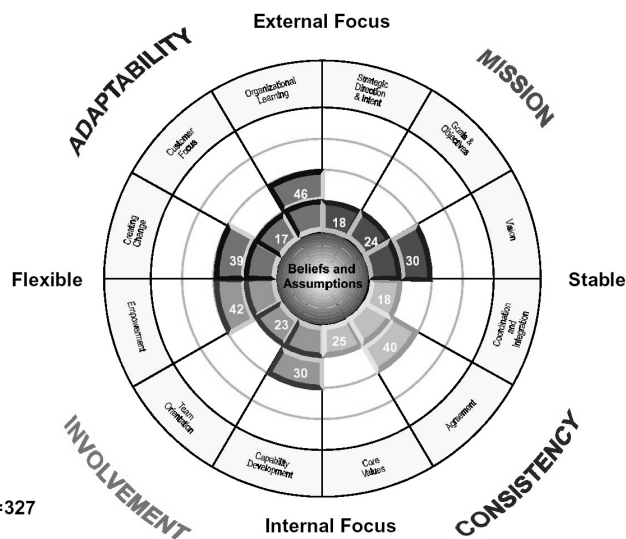


Figure 1: Denison's Organisational Culture Dimensions (Denison, 2000a) indicating the culture profile of the investment bank.

The traits and indices have been described as follows (Denison, 2000a):

- Involvement** can be defined as the building of human capability, ownership and responsibility. It comprises the following indices:
  - Empowerment.* Individuals have the authority, initiative and ability to manage their own work. This creates a sense of ownership and responsibility towards the organisation.
  - Team orientation.* Value is placed on working cooperatively toward common goals to which all employees feel mutually accountable. The organisation relies on team effort to get work done.
  - Capability development.* The organisation continually invests in the development of employees' skills in order to stay competitive and meet ongoing business needs.
- Consistency** can be defined as the values and systems that are the basis of a strong culture. Its indices are:
  - Core values.* Members of the organisation share a set of values which create a strong sense of identity and a clear set of expectations.
  - Agreement.* The organisation is able to reach agreement on critical issues. This includes an underlying level of agreement and the ability to reconcile differences when they occur.
  - Coordination and integration.* Different functions and units of the organisation are able to work together well to achieve common goals. Organisational boundaries do not interfere with getting work done.
- Adaptability** is the translation of the demands of the business environment into action. It comprises the following indices:
  - Creating change.* The organisation is able to create adaptive change. The organisation is able to read the business environment, quickly react to current changes and anticipate future changes.
  - Customer focus.* The organisation understands and reacts to customers, and anticipates their future needs. This reflects the degree to which the organisation is driven by a concern to satisfy customers.
  - Organisational learning.* The organisation receives, translates and interprets signals from the environment into opportunities for encouraging innovation, gaining knowledge and developing capabilities.
- Mission** relates to the defining of a meaningful long-term direction for the organisation. Its indices are:
  - Vision.* The organisation has a shared view of a desired future state. It embodies core values and captures the hearts and minds of employees of the organisation, while providing guidance and direction.

*Strategic direction and intent.* The organisation's plan to make its mark in its industry. Clear strategic intentions convey the organisation's purpose and make clear how everyone can contribute.

*Goals and objectives.* A clear set of goals and objectives can be linked to the mission, vision and strategy, and provide everyone with a clear direction in their work.

The results of the Denison Organizational Culture Survey are displayed in a circular profile (see Figure 1). The profile displays scores in quartiles and percentiles which compare an organisation's score to a norm group which comprises 500 organisations. The norm database includes a wide variety of large and small businesses from around the world, including manufacturing, service, retail, financial, technology, non-profit and government organisations. Third and fourth quartile scores are those generally found in high performing organisations, and first and second quartile scores are generally found in low performing organisations (Denison, 2000b). When the profile of an organisation is assessed, it is important to determine in which quadrants of the circle its strengths and weaknesses lie, because a balanced profile with a high overall percentile in each quadrant is desirable. The more shading there is in the circular profile of an organisation, the more effective its culture is likely to be. Fisher (2000) provided guidelines for the interpretation of specific culture themes and patterns, such as organisations with a strong internal focus (bottom heavy/top light).

In a criterion related study, Denison and Mishra (1995) administered the questionnaire to top executives in 764 organisations from various industries. The results were compared with a set of effectiveness measures that included subjective and objective measures of profitability, quality, sales growth, satisfaction and overall effectiveness. The results showed that profitability criteria were best predicted by the stability traits, mission and consistency, whereas the sales growth criteria were best predicted by the flexibility traits, involvement and adaptability. In a more recent study involving 60 companies, all four of the traits were positively correlated with return on assets, but it was shown that some of the traits were more closely linked to organisational effectiveness measures other than return on assets (Denison, 2000c).

Denison (1998) reported satisfactory internal consistency reliabilities for the indices that were measured by five items each. The Cronbach alpha reliabilities ranged between 0,62 and 0,82. He also examined the construct validity of the questionnaire by means of a confirmatory factor analysis to determine whether the index structure fitted a model which treated the twelve indices as the observed measures and the four underlying traits as the latent variables. Good support for the underlying model was obtained (Denison, 1998), but it was found that the traits intercorrelated substantially. Two explanations for the high correlations were offered. The first was that effective cultures imply high scores on all the indices, and vice versa. The second explanation was that there is substantial overlap between the traits, because they do not measure separate traits as the model suggests.

#### *Financial Performance Ratios*

In selecting appropriate measures of financial performance, it was decided to use a variety of objective measures that were readily available for the organisation and also for each department separately. It was thus decided to use effective tax rate and four methods of ratio analysis as the indicators of financial performance in the present study, because the data required for calculating these ratios are often publicly available in annual reports and would thus not pose a risk to the organisation if the ratios are known. Ratios are summary measures of effectiveness that are widely recognised by investors and managers as providing sound information of

organisations' performance. Furthermore, the ratios discussed below were chosen, because they could be supplied by the Finance Department of the bank and had been subjected to an external audit in order to ensure the reliability of the data. These income statement ratios were appropriate for the investment bank under consideration, because a substantial portion of its income was derived through interest (as opposed to sales of goods). In addition, income and expenses reflected in the income statement were monitored more closely than assets and liabilities reflected in the balance sheet, because the bank did not have to make large investments in capital equipment in order to generate sales. A profit maximisation, as opposed to a wealth maximisation approach, was followed in this study and thus the chosen ratios were all profitability ratios. This is largely attributed to the fact that the bank's wealth can only be measured at an organisational level and not at a departmental level. Furthermore, they were readily available, because they were used by the investment bank to track and evaluate the bank's performance on a monthly basis. The indices used, were the following:

*Effective tax rate.* The effective tax rate is the net rate a taxpayer pays if all forms of taxes are included. It is calculated by dividing the total tax paid by taxable income.

*Net interest income(NII)/Operating income.* Net interest income is income derived from interest earned less any interest related expenses. The purpose of this ratio is to determine the percentage of operating income that can be attributed to interest earnings. This ratio is thus widely used in the banking sector.

*Non-interest revenue(NIR)/Operating income.* Non-interest revenue is revenue derived from all sources other than interest earnings. The purpose of this ratio is to determine the percentage of total operating income that can be attributed to non-interest earnings. This ratio is used predominantly in the banking sector.

*Operating expenses/Operating income.* Operating expenses are the sum of all expenses incurred from operations. Operating income encompasses all revenue derived from operations, including interest and non-interest revenue. The purpose of this ratio is to measure how well an organisation can cover its costs with operating revenue. It is used as a key measure in the banking industry to determine how well a particular organisation can control its costs and thus operate in a cost-efficient manner.

*Net income after interest and taxes(NIAT)/operating income.* Net income after interest and taxes is the income that an organisation has made after all expenses, taxes and interest payments have been made. The purpose of this ratio is to examine net income after interest and taxes in relation to total operating income. This helps to determine whether taxes and interest payments are eroding income. The higher this ratio, the better the financial position of the organisation.

#### **Procedure**

The Denison Organizational Culture Survey was administered to the sample of 327 employees from 14 departments of the investment bank. Special sessions were set up with each department during which the rationale behind using the questionnaire was explained and the employees completed the questionnaire with the administrator present.

The data was captured by a data capturer into a spreadsheet and verified by the first author. The data was then sent to Denison Consulting for uploading into their database and scoring against the norm group. Reports were produced for the bank overall and then per department, region, job level, and race. The financial performance data of each department was also captured into a spreadsheet. All analyses were done by means of the SPSS Version 11.0 statistical package.

RESULTS

The first step in the analyses was to evaluate the organisational culture profile of the investment bank overall and for each department separately. When benchmarked against other organisations worldwide in the database, all of the traits and indices for the bank overall were in the first or second quartiles (see Figure 1). These results indicated that more than 50% of the organisations in the benchmark group obtained higher scores than the bank. The culture profile of the bank was therefore indicative of an under-performing organisation. According to the theory of the Denison Culture Model (Denison, 2000a), results falling in the first or second quartiles would imply poor to mediocre results for return on assets, return on sales, and return on equity in the longer term. The return on equity for the bank at the time of the study was 18,74%. The cut-off point for high performing organisations used by Denison (2000a) is 21%. The present data therefore supports the theory that low culture profile results are associated with low financial performance.

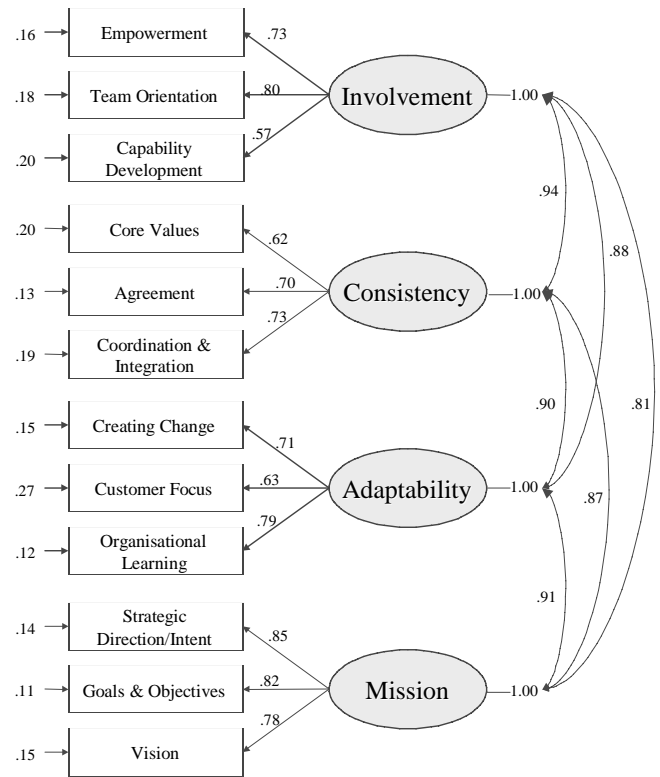
In the next step of the analyses, the psychometric properties of the Denison Organizational Culture Survey were examined. Descriptive statistics and Cronbach alpha coefficients for the four traits and twelve indices or subscales are presented in Table 1. The alpha coefficients ranged from 0,56 to 0,84 for the subscales. With the exception of 2 subscales, all the 5-item subscales demonstrated acceptable internal consistency reliabilities of above 0,60. For the four traits, the alphas were substantially higher, ranging from 0,81 to 0,90.

**TABLE 1**  
**DESCRIPTIVE STATISTICS AND ALPHA COEFFICIENTS FOR THE DENISON ORGANISATIONAL CULTURE SURVEY**

Traits and indices	Number of items	N	M	SD	Cronbach α (for subscales)	Cronbach α (for traits)
<b>Involvement</b>			3,27	0,50		0,84
Empowerment	5	326	3,30	0,59	0,71	
Team Orientation	5	326	3,18	0,69	0,79	
Capability Development	5	327	3,34	0,54	0,56	
<b>Consistency</b>			3,13	0,47		0,81
Core Values	5	327	3,34	0,56	0,61	
Agreement	5	325	3,15	0,51	0,59	
Coordination and Integration	5	326	2,90	0,65	0,74	
<b>Adaptability</b>			3,19	0,46		0,82
Creating Change	5	326	3,13	0,55	0,64	
Customer Focus	5	322	3,28	0,55	0,68	
Organisational Learning	5	327	3,16	0,58	0,63	
<b>Mission</b>			3,10	0,57		0,90
Strategic Direction & Intent	5	326	3,09	0,71	0,84	
Goals & Objectives	5	325	3,28	0,58	0,74	
Vision	5	326	3,30	0,62	0,74	

The construct validity of the Denison Organizational Culture Survey was assessed by means of a confirmatory factor analysis using the AMOS 5.0 programme (Arbuckle, 2003). Each cultural trait was represented as a latent variable or factor, measured by a number of indices. The correlations between the four organisational culture traits were high, ranging from 0.81 to 0.94. These are indicated in Figure 2 by the arrows linking the four main variables. This indicates that the traits could not be clearly differentiated from each other and thus raised the question as to whether the items were in fact measuring different dimensions, or whether they were measuring a single dimension. Gorsuch (1997) cautioned that confirmatory factor analysis could fail to provide clear results when correlations

between latent variables are too high. It can be concluded that the items constructed for each index overlap to the extent that the scales cannot be considered as factorially pure. Similar findings were presented in the original validity studies conducted by Denison (1998). He did, however, justify these findings by indicating that the results verified that all four traits should be present for an organisation to be successful and that the high intercorrelations of the indices thus make sense. The results of the present study suggest that future research on the instrument should examine the structure of the Denison Organizational Culture Model.



Chi-square = 108,897, p<0,0001  
RMSEA = 0,062

**Figure 2. Path diagram of the hypothetical model showing the causal relations between the four organisational culture traits.**

In order to test whether the model of the four cultural traits fitted the data, the chi-square for the hypothesised model was calculated. However, it was decided to focus on the goodness-of-fit statistic RMSEA rather than the chi-square, because results of the latter statistic in the social sciences often indicate that models do not fit the data. This is due to the fact that the probability of obtaining a statistically non-significant chi-square becomes extremely small with large sample sizes as was the case in this study. The RMSEA attempts to answer the question: "How well would the model, with unknown but optimally chosen parameters, fit the population covariance matrix model if it was available?" (Byrne, 2001, p. 84). RMSEA values of less than 0,05 indicate good fit and higher values, such as 0,08, are indicative of reasonable estimations in the population. Other researchers have, however, recently highlighted that RMSEA values ranging from 0,08 to 0,10 indicate a mediocre fit, whereas values larger than 0,10 indicate a poor fit (Byrne, 2001).

The RMSEA in this study was equal to 0,062, thus indicating a relatively good fit of the overall model. This exercise was repeated to examine the structure of each of the organisational culture traits separately. For the involvement dimension the RMSEA was 0,059, indicating a good fit; for adaptability it was equal to 0,077, indicating a relatively good fit; for consistency the RMSEA was equal to 0,083, indicating a mediocre fit; and for mission the RMSEA was 0,061, indicating a good fit. Overall the

results of the confirmatory factor analysis appeared to yield reasonable support for the Denison model and the construct validity of the questionnaire.

The financial performance ratios for the seven revenue generating departments and for the bank overall were calculated next and are presented in Table 2. For high performance, the Effective Tax Rate and the Operating Expenses/Operating Income ratios should be low. The Net Income after Interest and Tax (NIAT)/Operating Income ratio should, however, be high. The Net Interest Income (NII)/Operating Income and the Non-interest Revenue (NIR)/Operating Income ratios are complements of each other. There is no preferred balance between these two ratios, because it will fluctuate between departments depending on whether income is generated primarily from interest or non-interest sources. In order to avoid repetition, it was decided to use the NII/Operating Income for all statistical analyses and thus NIR/Operating Income was not reflected further. When assessed against these ratios, the best performing department was Capital Account.

TABLE 2

**FINANCIAL PERFORMANCE RESULTS FOR THE REVENUE GENERATING DEPARTMENTS FOR THE CURRENT YEAR**

Departments	Effective Tax Rate	NII/Operating Income	NIR/Operating Income	Operating Expenses/Operating Income	NIAT/Operating Income
Corporate Finance	25,7%	2,3%	97,7%	140,6%	-34,5%
Capital Account	12,2%	1,7%	98,3%	10,6%	77,1%
Multi-manager	25,8%	-6,8%	106,8%	130,7%	-24,9%
Corporate Equities	67,8%	86,6%	13,4%	-61,7%	52,9%
Property	23,5%	74,3%	25,7%	46,2%	24,1%
Structured & Project Finance	25,0%	50,8%	49,2%	37,9%	44,6%
Treasury	-12,1%	54,6%	45,4%	61,8%	40,4%
Organisation Overall	6,0%	24,4%	75,6%	40,1%	51,2%

Financial data to calculate four of these ratios was available for the previous year also and correlations were computed between the results per department for the two years. The performance measures of NII/Operating Income and Operating Expenses/Operating Income had high correlations with the previous year's figures (0,81 and 0,96 respectively). The Effective Tax Rate, however, had a correlation of 0,11 with the previous years' financial results. This was due to the fact that it is a measure that is likely to vary considerably based on earnings and is thus unlikely to be the same year after year unless sales, prices and expenses remained stable. In addition, organisational culture is a relatively stable phenomenon that is unlikely to change significantly during the course of one year. It was therefore decided to use the mean of the two years' financial data instead of just the current year's data in further analyses.

The various financial measures were intercorrelated to assess their convergent validity. The correlations are presented in Table 3. The absolute values of the correlations of the financial performance measures with each other, except for the tax rate, indicated strong correlations that ranged from 0.61 to 0.82. NII/Operating Income was negatively correlated with Operating Expenses/Operating Income. This finding made sense, because there are not always increased expenses as a result of increased earnings in interest. An increase in the lending rate, for example, may increase income without having any impact on operating expenses. Non-interest revenue, however, is likely to result in higher expenses for the financial

institution, as this is the category where the organisation needs to spend money in order to make money. Thus non-interest Revenue/Operating Income is likely to be positively correlated with Operating Expenses/Operating Income. The results also indicated that NII/Operating Income was positively correlated with the Effective Tax Rate. This finding was also logical, because an increase in income as a result of interest is unlikely to be accompanied by expenses, and so the tax rate is likely to increase as the levels of income increase (there are no additional expenses to offset against taxes). NII/Operating Income was also positively correlated with NAIT/Operating Income, thus indicating that interest income was more profitable than non-interest revenue as it may not result in an increase in expenses. The negative correlation between Operating Expenses/ Operating Income and NAIT/Operating Income was according to expectation and was due to the fact that as expenses increase, the operating profit of the organisation is likely to decrease.

TABLE 3

**CORRELATIONS BETWEEN THE FINANCIAL PERFORMANCE MEASURES (N = 7)**

	Effective Tax Rate	NII/Operating Income	Operating Expenses/Operating Income	NAIT/Operating Income
Effective Tax Rate	-			
NII/Operating Income	0,56 (0,189)	-		
Operating Expenses/Operating Income	-0,24 (0,612)	-0,81* (0,029)	-	
NAIT/Operating Income	0,17 (0,717)	0,61 (0,144)	-0,87* (0,011)	-

\* Correlation is significant at the 0,05 level (2-tailed)  
p values are indicated in parentheses

In Table 4 the mean scores of the revenue generating departments on the twelve subscales of the Denison Organizational Culture Survey are presented. The various departments were then compared to one another with respect to the various dimensions of the culture questionnaire by using one-way analysis of variance tests. In the event of statistically significant F test results, Bonferroni post hoc tests were performed to establish which pair-wise differences between departments were statistically significant. The results of the F tests are also presented in Table 4. The level of significance was adjusted to compensate for the accumulation of the Type I error. A Type I error is said to be made when the tested hypothesis is wrongly rejected (Hays, 1994). Instead of a conventional 0,05 level, a more stringent level of 0,005 was used. Statistically significant results (at the comparison wise significance level of 0,005) were found for two of the dimensions only, namely Empowerment and Capability Development. The partial eta squared values of 0,107 and 0,116 for Empowerment and Capability Development indicate moderately large effect sizes, where 0,06 is regarded as moderate and 0,14 as large (according to criteria set by Cohen (1988)) for these organisational culture dimensions.

Bonferroni post hoc tests were then performed between the means of the seven departments on the subscales Empowerment and Capability Development. With regard to Empowerment, it was found that the Treasury Department scored significantly lower than the Property Department ( $p = 0,002$ ) (practical effect size correlation = 0,349) and the Multi-manager/Marketing Department ( $p = 0,047$ ) (practical effect size correlation = 0,290).

**TABLE 4**  
**COMPARING DEPARTMENTS ON ORGANISATIONAL CULTURE SUBDIMENSIONS**

Divisions/Departments	Organisational Culture Dimensions											
	Empowerment	Team Orientation	Capability Development	Core Values	Agreement	Coordination and Integration	Creating Change	Customer Focus	Organisational Learning	Strategic Direction and Intent	Goals and Objectives	Vision
Treasury (n = 71)	3,07	3,10	3,14	3,22	3,12	2,89	3,03	3,13	3,06	2,97	3,10	2,84
Structured Finance (n = 31)	3,23	3,11	3,50	3,43	3,17	2,87	3,19	3,36	3,21	2,99	3,41	3,05
Capital Account/Intl (n = 5) Operations	3,40	3,00	3,44	3,52	3,12	3,28	3,08	3,44	2,96	3,64	3,60	3,20
Property (n = 42)	3,50	3,30	3,53	3,53	3,20	2,80	3,12	3,23	3,29	3,24	3,43	2,99
Corporate Finance (n = 16)	3,39	3,30	3,28	3,26	3,08	2,66	2,88	3,44	2,93	2,79	3,19	2,65
Corporate Equities (n = 6)	3,17	3,00	3,53	3,27	3,33	2,70	2,87	3,03	3,00	2,53	3,00	2,80
Multi-manager/Marketing (n = 22)	3,49	3,39	3,52	3,28	3,23	3,06	3,34	3,22	3,26	3,10	3,33	3,00
F value	3,72	1,04	4,06	1,77	0,44	0,99	1,33	1,15	1,52	2,19	2,40	1,70
p value	0,002	0,404	0,001	0,108	0,849	0,434	0,246	0,336	0,173	0,046	0,03	0,124
Partial Eta Squared	0,107	0,032	0,116	0,054	0,014	0,031	0,041	0,036	0,047	0,066	0,072	0,052

With regard to Capability Development, it was found that the Treasury Department scored significantly lower than the Property Department ( $p = 0,002$ ) (practical effect size correlation = 0,358), the Multi-manager/Marketing Department ( $p = 0,050$ ) (practical effect size correlation = 0,302) and the Structural Finance Department ( $p = 0,018$ ) (practical effect size correlation = 0,293).

One-way analysis of variance tests were also performed to establish whether there were statistically significant differences between the means of the various departments on the four main organisational culture traits. The means and F test results are given in Table 5. The p value of the F test for the main dimension Involvement is 0,006, which approaches 0,005 (the comparison-wise significance level of 0,005). The practical effect size of the partial eta squared was larger than moderate ( $0,09 > 0,06$ ). It was therefore decided to proceed with post hoc tests for the Involvement trait. Bonferroni post hoc tests revealed that the Treasury Department scored significantly lower than the Property Department ( $p = 0,006$ ) (practical correlation effect size = 0,327) and the Multi-Manager/Marketing Department ( $p = 0,04$ ) (practical correlation effect size = 0,295). These results confirm the results of the analyses of variance for the subscales, because Empowerment and Capability Development are two of the three dimensions that make up the Involvement trait.

**TABLE 5**  
**COMPARING DEPARTMENTS ON THE FOUR ORGANISATIONAL CULTURE TRAITS**

Departments	Main dimensions			
	Involvement	Consistency	Adaptability	Mission
Treasury	3,10	3,08	3,08	2,97
Structured Finance	3,29	3,14	3,25	3,10
Capital Account/ Intl Operations	3,28	3,31	3,16	3,48
Property	3,44	3,18	3,21	3,23
Corporate Finance	3,32	3,00	3,08	2,88
Corporate Equities	3,23	3,10	2,97	2,78
Multi-manager/Marketing	3,47	3,19	3,27	3,15
F value	3,10	0,60	1,04	1,89
p value	0,006	0,733	0,402	0,085
Partial Eta Squared	0,090	0,019	0,032	0,057

In order to test whether organisational culture is related to financial performance, the correlations of the financial performance data of the sample of the seven revenue generating departments with the mean scores of the departments on the 12 subscales of the Denison Organizational Culture Survey were computed. These correlations are presented Table 6. By using revenue generating departments only, the sample size was reduced. Due to the small number of observations, the correlational tests lacked statistical power (ability to detect significant results). The size of a correlation is, however, an indication of the practical effect size of the linear relationship between two variables. In the present study, correlations of approximately 0,50 and higher will therefore be noted even though they may not be statistically significant at the 0,05 level.

**TABLE 6**  
**CORRELATIONS OF FINANCIAL PERFORMANCE DATA OF THE SEVEN DEPARTMENTS WITH THEIR MEAN SCORES ON THE SUBDIMENSIONS OF THE DENISON ORGANISATIONAL CULTURE SURVEY**

	Effective Tax Rate	NII/Operating Income	Operating Expenses/ Operating Income	NAIT/ Operating Income
Empowerment	0,31 (0,501)	-0,41 (0,363)	0,46 (0,295)	-0,45 (0,317)
Team Orientation	0,09 (0,853)	-0,49 (0,267)	0,85 (0,016)	-0,89 (0,007)
Capability Development	0,40 (0,369)	0,33 (0,472)	-0,37 (0,416)	0,13 (0,779)
Core Values	0,60 (0,157)	0,15 (0,755)	-0,25 (0,596)	0,46 (0,300)
Agreement	0,26 (0,575)	0,71 (0,076)	-0,59 (0,161)	0,18 (0,704)
Coordination and Integration	-0,37 (0,419)	-0,27 (0,562)	-0,08 (0,867)	0,37 (0,419)
Creating Change	-0,14 (0,768)	-0,21 (0,649)	0,28 (0,549)	-0,13 (0,786)
Customer Focus	-0,12 (0,794)	-0,74 (0,055)	0,44 (0,323)	-0,14 (0,764)
Organisational Learning	0,36 (0,432)	0,20 (0,660)	0,17 (0,719)	-0,17 (0,709)
Strategic Direction and Intent	0,07 (0,874)	-0,26 (0,580)	0,07 (0,879)	0,31 (0,495)
Goals and Objectives	0,17 (0,714)	-0,30 (0,513)	0,10 (0,837)	0,22 (0,633)
Vision	0,06 (0,901)	0,06 (0,895)	-0,30 (0,513)	0,54 (0,206)

p values are indicated in parentheses

The correlation between Team Orientation and Operating Expenses/Operating Income was 0,85. This means that the higher a department's team orientation score, the higher its expenses were relative to its income. In other words, high team orientation appeared to be bad for performance. Similarly, Team Orientation had a negative correlation of -0,89 with NAIT/Operating Income. This again implied that team orientation was bad for profitability in this particular environment. It may mean that it is better to focus on individual performance in this particular organisation, because individual performance may be more likely to drive financial performance. Nevertheless, these results were not expected. The Core Values dimension was positively correlated with the Effective Tax Rate (0,60), thus implying that the higher the score on core values, the higher the effective tax rate. This finding was not desirable and contrary to expectation. However, the finding was not statistically significant ( $p = 0,157$ ).

With regard to the Agreement dimension, a positive correlation of 0,71 was found with NII/Operating Income. This implied that the higher the agreement dimension, the higher the levels of interest income as a percentage of total income. A negative correlation of -0,59 was also found between Agreement and Operating Expenses/Operating Income ( $p = 0,161$ ). These correlations were in the expected direction. The negative correlation of -0,74 ( $p = 0,055$ ) between the Customer Focus dimension and NII/Operating Income implied that the greater the customer focus, the lower the percentage of interest income as a portion of total income. This finding made sense, because an increase in interest rates is likely to upset customers. Employees, in turn, do not have to focus strongly on customer service if the strategy of the organisation is to generate revenue through interest expenses. This is due to the fact that very little front-line client interaction is required in order to generate revenue through this means. Vision had a positive correlation of 0,54 with NAIT/Operating Income, thus indicating that the higher the scores on vision, the more profitable the organisation was.

The correlations of the financial performance data of the seven revenue generating departments with the mean scores of the departments on the four main traits or organisational culture were computed next. Table 7 indicates that correlations of financial data with the Consistency dimension are worth exploring. A positive correlation of 0,85 ( $p = 0,016$ ) was found between Consistency and Operating Expenses/Operating Income, implying that as the score on the consistency dimension increased, the expenses of the organisation increased relative to the income. This could be an indication that in order to facilitate shared values and effective working relationships, organisations often spend money on communication and internal improvements, thereby causing expenses to rise relative to income. A negative correlation of -0,89 ( $p = 0,007$ ) was found between Consistency and NAIT/Operating Income, thus indicating that profitability decreased as consistency increased. This can possibly be attributed to the increase in expenses associated with consistency described above.

**TABLE 7**  
**CORRELATIONS OF FINANCIAL PERFORMANCE DATA OF THE SEVEN DEPARTMENTS WITH THEIR MEAN SCORES ON THE FOUR MAJOR ORGANISATIONAL CULTURE TRAITS**

	Effective Tax Rate	NII/Operating Income	Operating Expenses/Operating Income	NAIT/Operating Income
Involvement	0,31 (0,501)	-0,41 (0,363)	0,46 (0,295)	-0,45 (0,317)
Consistency	0,09 (0,853)	-0,49 (0,267)	0,85 (0,016)	-0,89 (0,007)
Adaptability	0,40 (0,369)	0,33 (0,472)	-0,37 (0,416)	0,13 (0,779)
Mission	0,60 (0,157)	0,15 (0,755)	-0,25 (0,596)	0,46 (0,300)

*p* values are indicated in parentheses

## DISCUSSION

The main aim of the study was to establish the nature of the relationship between organisational culture and financial performance. The changing competitive environment within which South African financial services organisations have had to operate over the past years, forced many organisations to restructure, merge or reengineer in order to remain competitive and to generate sustainable financial results. The results of several studies indicated that organisational culture appears to create a unifying force that boosts organisational performance and that it affects both employee behaviour and the financial performance of the organisation (Calori & Sarnin, 1991; Denison, 1990; Kotter & Heskett, 1992; Peters & Waterman, 1982; Schlechter, 2001; Tidball, 1988; Van der Post et al., 1998).

In order to establish the link between organisational culture and financial performance, Peters and Waterman (1982), Denison (1990), Hansen and Wenerfelt (1989), Calori and Sarnin (1991), Schlechter (2001) and Van der Post et al. (1998) conducted studies involving the relationship between certain financial ratios and organisational culture. The performance and culture measures used varied from study to study. Their studies revealed correlations between certain cultural dimensions and financial ratios, in particular return on assets, return on investment, return on sales and market share. In the present study several profitability ratios were also used, because the information was readily available and ratios are generally accepted by shareholders and analysts as acceptable measures of financial performance. The dimensions of culture that were consistently found to be related to financial performance were consistency, adaptability, participation/empowerment, strategic direction and entrepreneurship. Kotter and Heskett (1992) conducted four studies examining the relationship between organisational culture and financial performance, and found that culture can have a significant influence on long-term financial performance and should thus be enhanced continuously. However, inconclusive results regarding this relationship were obtained in the present study.

From the literature surveyed, it emerged that the conceptualisation of organisational culture is not a simple task, because there is no single generally accepted definition of or theory on the concept. Nevertheless, certain key characteristics



of culture appear to be generally accepted by researchers, namely that it is a collective phenomenon shared by members of a group and is socially constructed. It deals predominantly with intangible and emotional concepts (such as meanings, values, understanding and beliefs) rather than rational concepts. It provides a group with identity, a sense of meaning, purpose and direction, and involves the establishment of a set of norms that shape the behaviour of individuals within that group. Culture has a significant influence on the extent to which there is internal integration (the ways in which people work together in order to adapt to the external environment and remain competitive). Furthermore, it is historically determined and is difficult to change.

The overall culture profile of the investment bank as assessed by means of the Denison Organizational Culture Survey resulted in scores in the first and second quartiles when comparing the organisation's profile to a norm group of other participating organisations. This indicated that considerable efforts were needed to improve the bank's culture profile in order to achieve sustained financial performance in the long term. It should nevertheless be kept in mind that the Denison questionnaire is an instrument that had been designed and validated in the American context. No data existed for the validation of the instrument in the South African context at the time of the present study. A second limitation was that the norm group used for comparison purposes was based on the results of American and other international organisations, with no South African companies represented in the benchmark group. This could mean that the standards set for comparison purposes were too high and that the results obtained within the first and second quartiles should be viewed within this context.

The validity and reliability of the Denison Organizational Culture Survey was examined for the present sample. This represented the first attempt in a South African context to examine the psychometric properties of this instrument. It was established that most of the scales had acceptable internal consistency reliabilities and that the hypothesised model fitted the data. A concern did, however, emerge regarding the high correlations between the four cultural traits, thus suggesting that they are not clearly distinguishable. Similar results had been obtained in previous studies (Denison, 1998), thus indicating that the items may in fact be measuring a single trait instead of four clearly distinguishable cultural traits. Clearly more validity studies of the Denison Organizational Culture Survey within the South African context are necessary, also ensuring that multicultural samples of participants are used. Particular attention should be paid to the correlations between the four cultural traits and the extent to which the subscales and items fit the model within a broader sample of South African organisations. Item analyses should also be conducted to determine whether any specific items in the survey should be improved.

The results generated from correlating the organisational culture dimensions and the financial measures were disappointing. Few financial measures were strongly correlated with the cultural traits or subscales. Correlations between the cultural dimensions of team orientation, agreement, customer focus, vision and core values were found with certain financial measures. Although these correlations were above the 0.50 level, they were not statistically significant in all cases so that conclusions could be drawn with confidence. The only cultural traits that were found to be correlated with financial measures were the consistency and mission traits. These results should be interpreted with caution, because no significant differences on the mean scores were found between departments on the consistency dimension. As the organisation concerned is an investment bank, erratic market changes may have had a significant impact on profitability ratios and could thus have influenced

the correlations. The research should ideally have been longitudinal in nature and should have tracked financial performance and organisational culture over a number of years in order to yield accurate data, because the industry in which the organisation operated can undergo erratic changes. The financial markets in March 2002 when the data was collected were in fact relatively erratic and thus the financial data used may have skewed the results of the study. An attempt was nevertheless made to counter this limitation by using the mean of financial performance data over a two-year period.

Although very few of the financial ratios used in this study were significantly correlated with the Denison cultural traits or subscales, some conclusions could be drawn from the analyses. Firstly, team orientation was negatively correlated with profitability in the organisation studied. This may indicate that individual performance was more important than team performance within the context of this organisation. Secondly, the higher the levels of agreement in the organisation, the more likely earnings can be attributed to interest income, as opposed to other forms of income. Thirdly, the greater the customer focus in the organisation, the less likely earnings can be attributed to interest income. If the organisation is focusing outwardly on its customers, it will be more likely to generate income through non-interest sources. Fourthly, the higher the scores obtained on the vision dimension, the higher the profitability of the organisation. And finally, the higher scores on the consistency trait, the higher the expenses relative to income and thus the lower the profitability of the organisation.

The results of this study should be viewed within the context of the sample size and the fact that the study was conducted within a single organisation. The results could therefore not be generalised to the broader population of all investment banks. Also, the financial performance measures used are specific to the investment banking industry or other banking organisations, but these measures cannot necessarily be regarded as important for organisations in other industries. The original sample had to be split up so that only the results of income generating departments were considered, and thus the sample size was relatively small. Due to the fact that the units of comparison were the departments within the organisation, financial measures at the organisational level could not be used. Instead, financial measures that could be explored at a departmental level had to be used. Thus, direct comparisons could not be drawn between the findings of Denison's (1990) research and the findings of this research. Most of the findings presented in the literature survey were conducted using organisational level financial performance measures and could therefore not be compared directly with the results of this research.

A limitation that possibly may have affected the research findings, resulted from using a single organisation with its various departments as the units of comparison. This approach was based on the assumption that each department would have a particular organisational culture that differed to some extent from that of the other departments. Correlating culture data with financial data only makes sense if there is enough variability in both sets of data. If the bank had an organisational culture that was pervasive and that trickled down into every department such as theory suggests, the variability in the culture data across departments would have been restricted.

There were also other limitations to the study. The majority of the respondents were white. Although this was representative of the demographics of the bank at the time of the study, it has an impact on the generalisability of the results (particularly the validity findings) to the broader South African population. Furthermore, information on the culture profile of the organisation was available at a single point in time only. More

stable results and informed conclusions might have been reached if we had been in the position to track the relationship between organisational culture and financial performance over a number of years. The fact that the independent variable could not be manipulated in this study presented a further limitation as the influence of intervening variables on the results could not be ruled out. A limitation in using the Denison Organizational Culture Survey, or any other survey instrument for that matter, is the fact that it measures the observable elements of culture only, and thus does not tap into the unconscious elements of culture. It was pointed out earlier that organisational culture deals predominantly with intangible and emotional concepts rather than rational concepts.

To address the limitations of this research, it is recommended that a longitudinal study over a minimum period of five years on the relationship between organisational culture and financial performance be conducted within the South African context by selecting a number of organisations across industries to participate in the study. Moving the sample base from a single organisation to multiple organisations will also mean that organisation-level financial performance measures can be selected, such as return on investment, return on equity and return on assets. These measures are not only of key importance across all organisations and industries, but they can also provide a direct comparison with the research findings of Denison (1990) conducted in the United States of America. It should also be beneficial to explore the concept of a strong organisational culture to determine whether it is preferable under all conditions to obtain high scores on all culture dimensions when attempting to attain high levels of financial performance.

It has been problematic to compare the results of various studies attempting to establish links between organisational culture and financial performance when different instruments have been used. It is recommended that a study be conducted using more than one validated organisational culture instrument to determine whether similar dimensions in the different questionnaires are correlated to the same extent and in the same direction with particular financial performance measures. Such a study would also indicate whether the results obtained in the present study can be replicated.

In conclusion, the research has provided an indication of the nature of the relationship between organisational culture and financial performance of a small sample of departments within a South African investment bank. The set of data was unfortunately too small to draw significant conclusions in support of the research hypothesis and several limitations to the study could not be overcome due to practical restrictions. However, if the relationships that were revealed could be replicated, additional insights into the connection between organisational culture and financial performance on a broader level would be uncovered.

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