

**AN INVESTIGATION INTO HOW BUSINESS EXCELLENCE CAN CONTRIBUTE TO
SUSTAINED ORGANIZATIONAL PERFORMANCE IN BOTH PRIVATE AND PUBLIC
SECTOR ORGANIZATIONS**

A thesis submitted in partial fulfilment for the award of Doctor of Business Administration

By

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Dedication

To those that have inspired me over the last three years.

Abstract

Business Excellence, or Total Quality Management as it is also known, is a philosophy that may be traced back to the 1950's when Deming and Juran showed the way to the Japanese at the end of the second world war (Oakland (2003a)). Some of the principles may even be traced back to the Egyptians (Tanner and Walker (2002)). Despite this, Business Excellence theory is at an early stage of development (Dale, Wu et al. (2001)). For over a decade, organizations have pursued the benefits of adopting a Business Excellence approach and have sought external recognition through the achievement of regional, national and even continent Quality Awards (Porter and Tanner (2003)). One day soon, there could even be a 'World Quality Award'.

The research set out with two clear aims. Firstly, there was an objective to add to the growing body of knowledge supporting the benefits of the adoption of Business Excellence. Secondly, there was a desire to provide an insight into why Business Excellence delivers such benefits. The thesis makes a contribution in both these areas. The research was also novel in that both private and public organizations were included in the study, and it represents one of the few studies to examine public sector organizations at a time when the UK government is investing heavily in Business Excellence as a way to improve public services (PriceWaterhouseCoopers (2000)). The work also partially replicated the research of two other authors, Hall (Hall (1991); Hall (1992); Hall (1994)) and Lindgren (2001), and not only provides support for their findings, but also support for the current work.

The research examined how Business Excellence could lead to a source of competitive advantage (or source of organizational advantage, as it was termed, as the sample included both public and private organizations). Use was made of the resource-based view of the firm as a basis for the theory underpinning the research ((Tena, Llusar et al. (2001)) taking a scientific Structure - Conduct – Performance perspective (Barney (1991a)). The literature review identified an initial research model that had the constructs of Organizational Context, Environmental Dynamics, Leadership Excellence and Strategic Capability as independent variables, and Performance across a number of Stakeholder groups as the dependent variable. A positivist approach was taken to collect data using a self-reporting postal questionnaire from 193 organizations. Use was made of existing instruments following Churchill's 9-step process (Churchill and Iacobucci (2002)), with some instruments being converted for use in the public sector. Although primarily a positivist approach, the research also made use of social construction techniques in the design of the questionnaire and to validate the findings (Jick (1979); Easterby-Smith, Thorpe et al. (2002)).

The first area examined was the benefits of Business Excellence. A comprehensive review of the literature concluded there was a strong case for its use, although the majority of work had been conducted on the American Malcolm Baldrige National Quality Award (MBNQA) framework and not on the more local EFQM Excellence Model[®] framework. A number of hypotheses were developed, covering areas such as the difference in benefit reported between small and large organizations, and whether whole organizations demonstrated more benefit than business units. There was also an interest in whether there was a difference in the benefits achieved between public sector and private sector organizations.

The two most frequently used methodologies for studying Business Excellence benefits was found to be share price event studies and surveys, with the latter being used in the current work. A Leadership Excellence instrument was used to operationalize Business Excellence following a review of the critical success factors of Business Excellence. The results indicated that Business Excellence had a positive relationship with overall performance, as well as with individual performance indicators representing different stakeholder groups. Business Excellence had a positive relationship with key performance outcomes representing the organization, employee satisfaction representing the employees, and customer satisfaction representing the customers. These relationships were found for both private and public sector organizations. Societal satisfaction, the fourth results area representing society as a stakeholder, did not appear to be correlated with the Business Excellence approach.

Despite an acceptance that leadership is a driver of organisational performance, there is very little empirical evidence to support this generalization (Bolden (2004); Burgoyne, Hirsh et al. (2004)). Although not part of the original scope of the research, as a leadership instrument has been used to operationalize Business Excellence, the research contributes to the leadership body of knowledge, providing such empirical evidence of a positive relationship.

The second area considered was the sources of competitive advantage, or sources of organizational advantage, as the sample included both public and private organizations. Partially replicating the work of Hall, employee-know how was found to be a main source of advantage in public sector organizations, with employee know-how and reputation being important in private sector organizations. The time to develop the advantage was measured in terms of 'Replacement periods', and this was found to be in the order of 2 to 3 years in most cases, with reputation having a slightly higher replacement period.

The third area examined the relationship between the ease with which organizations respond to change, termed 'Strategic Capability' in this study, and the performance achieved. The result provided support for the concept of dynamic capabilities (Teece, Pisano et al. (1997); Eisenhardt and Martin (2000); Zott (2003)). It was concluded that Business Excellence and the ability of an organization to react to change exhibited a relationship supporting the 'mental buffer' theory of Savolainen (2000a). The dynamics of the external environment was also considered to see if this affected the relationships based on the theory of Eisenhardt and Martin (2000), but no such relationship could be found. This lack of a relationship was attributed to either measurement and/ or sampling issues.

The fourth area and final examined sought to establish a relationship between Business Excellence, strategic capability and performance. Prahalad (2000) argued the most important challenge facing managers in the 21st century was the challenge to manage change in fast-moving environments. The current work developed a framework to aid the understanding of dynamic capabilities and this framework represents a contribution to theory. It is hoped the framework will be of value to both practitioners and researchers as this exciting area of strategy is taken forward.

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So there you have it. Many other people have helped me along the way and if I missed them off the list it was not intentional. Come on you Irons.

1 Introduction

Everyone has his or her reasons for choosing their research topic. Mine are rooted in my work experience from the time when I left Sussex University with a D. Phil in Enzymology to become a first line production supervisor at the Ford Motor Company Truck Plant at Langley, Berkshire. After 2 years I moved into the field of quality control, as my personal time horizon was beyond the end of the shift, to the annoyance of many of my work colleagues. I have been there ever since. At that time quality was mainly concerned with inspection and audits. A critical success factor was the ability to attach the correct label onto a file in a filing cabinet under the DEF- 05-21 requirements. It did not matter so much if the wheels fell off the trucks as long as the files were correctly labelled. I am convinced that many of these external auditors retired to become Reading traffic wardens.

Quality is a field that has been traced back to the 1950s (Martinez-Lorente, Dewhurst et al. (1998)) and has changed radically over the past 25 years (Luthans and Hodgetts (2002); Yarrow, Hanson et al. (2004)). Moving from Ford to International Computers Limited exposed me to Philip Crosby, and from there I took my experience to the Financial Sector, working for Prudential to implement a Total Quality Management (TQM) programme that won a UK National Training Award. It was at this time, in the late 80's, that the American Malcolm Baldrige National Quality Award was born in accidental circumstances (Porter and Tanner (1998)).

Higher requirements for improved quality of products and services have led to three important changes in international business over the last decade (Terziovski, Sohal et al. (1999)). These are the growing recognition of the strategic importance of Total Quality Management philosophy and methods; a major push by organizations world-wide to seek certification to the ISO 9000 quality standards; and the growing recognition and application of the Malcolm Baldrige National Quality Award, the European Quality Award, and other awards such as the Australian, Taiwan, Canadian, Singapore and Dubai Quality Awards.

I have been involved with the European Quality Award process since 1992. In that time I have assessed many organizations and also advised several on how to win the Award. The objective of these awards is to improve competitiveness in their regions and, as described in Chapter 2, there is a body of evidence suggesting that this is the case. But a critic might argue that an organization can win an award by being good at writing an application, not having an excellent sustained performance; a bit like solving a crossword

puzzle without being able to write a sentence. This view was supported by others (Simms, Bowles et al. (1991); Conti (1992); Wilson and Durant (1995)).

In writing this thesis there is a concern that '*criticising quality is like criticising the Queen Mother*', as Seddon (1997) remarks. This is especially true given the snowballing interest in Business Excellence where it has even been suggested that the philosophy could be applied to Premiership football clubs (Clarke (2000)).

The main focus of this research was to examine the philosophy of Business Excellence to see whether there was support for its use. In this introductory Chapter a brief summary of Business Excellence and the EFQM Excellence Model[®] has been given to aid the reader not familiar with the subject area. A notable feature is the interest being given to Business Excellence by the UK Government, which is one of the reasons why it was decided to include public sector organizations in the current study.

At the outset the reader should avoid any confusion between Business Excellence as defined in this research, and Peters and Waterman's definition of 'Excellence', which, as noted by Caruana, Pitt et al. (1994), was based on the three criteria of size, financial performance and innovation. Research concluded that Peters and Waterman's 'Excellence' and Performance are not synonymous (Ramanujam and Venkatraman (1988)).

The first section of this Chapter provides a brief introduction to Business Excellence, followed by some information on the EFQM Excellence Model[®] in section 2. Section 3 reviews some of the research conducted on the structure of the various Business Excellence models. We see that the empirical underpinning is particularly weak and that the current research has contributed to this area of debate. The Chapter continues with section 4 examining some views on the current state of the theory of TQM and Business Excellence research, and some suggestions made by other authors on where new research may contribute. TQM is only just building its own body of knowledge and, as a consequence, the Business Excellence research had to be grounded in the research from more established areas. In the summary of this Chapter the research focus is defined.

1.1 Introduction to Business Excellence

Since the introduction of the Deming Prize in Japan in 1951 a number of other quality awards have been developed with the aim of increasing the competitiveness of industry in their respective countries. The most famous awards in the Western World are the

USA's Malcolm Baldrige National Quality Award (MBNQA), introduced in 1987, and the European Foundation for Quality Management's (EFQM) 'Excellence Model', which was introduced in 1991. As explained by Porter and Tanner (1998), the Baldrige Award adopted the process of the Deming Prize but developed a Business Excellence model that took a more holistic view of business than the Deming Prize, which was centred on 'Total Quality Control'. The EFQM approach built on the Baldrige model and award process, which had seen several organizations go out of business despite being recognised as 'world-class' (Powell (1995)). Briggs and Keogh (1999) have noted that even world-class organizations may find managing change in their business environment difficult. Both the Baldrige and EFQM models have been refined over the years (Vokurka and Stading (2000); Porter and Tanner (2003)).

Many books have been published describing the composition and use of the number of Business Excellence models that are available around the world. These include publications from the award bodies (e.g., JUSE (1990); EFQM (1999a); NIST (2001)) and from practitioners (e.g., Hakes (1994); Mahoney and Thor (1994); Oakland (1999a); ECforBE (2000); ECforBE (2002); Porter and Tanner (2003)). The importance of this subject area was reinforced by the observation by Garvin (1991) that, in the first three years of its existence, the American National Institute of Standards and Technology (NIST) distributed over 450,000 copies of the Baldrige application guidelines. Over this period there were only approximately 200 applications for the award (Porter and Tanner (1998)).

Despite this level of interest, some authors challenged whether Business Excellence was as efficacious as the research indicates (e.g., Fernando (2001); Hughes and Halshaw (2002)). Rao, Youssef et al. (2004) cited an opinion reported in the Economist in 1992 that there is mounting evidence that the quality programmes of Western companies are failing dismally. This work also cited a recent survey of 500 manufacturing and service organizations by Arthur D Little that found that only a third of the organizations felt their quality programmes were having a significant impact on competitiveness. As noted by Schaffer and Thompson (1992), '*Most improvement efforts have as much impact on company performance as a rain dance has on the weather!*' Byrne (1997) proclaimed that '*TQM is as dead as a pet rock*'. Despite this Hendricks and Singhal (1999) advised organizations '*Don't Count TQM Out*'. The growth of process management and TQM was noted by Benner and Tushman (2003) who cited Nohria (1996) who observed that, back in 1992, every Fortune top 100 organization had a TQM programme.

So why do organizations chose to invest in Business Excellence? The European Centre for Business Excellence conducted a questionnaire-based study with a sample of 200 private sector organizations (ECforBE (1997)). This study included canvassing opinions on the reasons for starting or continuing Business Excellence. It concluded that the primary reasons for starting to use the EFQM Excellence Model[®] were to provide a driver for improvement and to increase awareness and commitment to quality throughout the organization. The main reason for continuing was also to drive improvement in the organization, although the view has been expressed that use of Business Excellence for improvement and as a mechanism for external recognition must be kept separate (Conti (1992)). Reed (1995) reported a small survey amongst public service staff that had just undertaken assessor training. The results indicated that the primary motive behind self-assessment at the time was its use as a measurement tool. Similar work has also been conducted on the Baldrige Award (Bemowski and Stratton (1995)).

Redman, Mathews et al. (1995) note a number of reasons why Business Excellence would be attractive to the public sector organization. These include increasing pressures on cost and greater consumer choice. In some countries governments are imposing use of Business Excellence in order to drive up the level of service provided by public sector organizations. Business Excellence is being used as a vehicle for implementing the UK Government's Best Value initiative (Lewis (1998)). Such is its importance, the EFQM Excellence Model[®] was cited in the 1998 White Paper 'Modern Local Government: In touch with the people' (I&DeA (2001)). As stated in a UK government report '*In the jungle that is quality improvement, the Model is the biggest beast – used by over 20,000 organizations across Europe. It is an approach therefore that the whole of the public sector should consider*'. (PriceWaterhouseCoopers (2000: p3)). This report surveyed public sector organizations noting that a wide range of organizations had adopted the EFQM Excellence Model[®] including Local Authorities, Emergency Services and Central Government. The estimated cost of implementation was placed at anywhere between £20,000 and over £400,000. The majority of managers interviewed were found to use the EFQM Excellence Model[®] to help their organization achieve key objectives and to enhance organizational performance. No causal approach – deployment linkages were established, this being put down to the observation that it takes many years to develop this capability (PriceWaterhouseCoopers (2000)). Work in 2001 came to similar conclusions but noted that implementation was being used at different organizational levels: Service Unit level, Department level and Corporate level (I&DeA (2001)).

Despite this level of interest empirical work that investigates why Business Excellence delivers benefit, particularly in the public sector, is sadly lacking. The EFQM Excellence Model[®], which forms the basis for this research, was formulated by expert opinion and to

date has not been empirically tested, although some such work has been conducted on the American Baldrige model.

On a European stage, Business Excellence is considered to be beyond TQM, but in the USA the terms Total Quality Management and Business Excellence are interchangeable. Bauer (2002) gave a comprehensive review of the TQM literature and argued that Business Excellence is an extension of TQM and, for the purpose of this work, Business Excellence will be used to cover both terms except where TQM was specifically mentioned in others' work.

1.2 The EFQM Excellence Model[®]

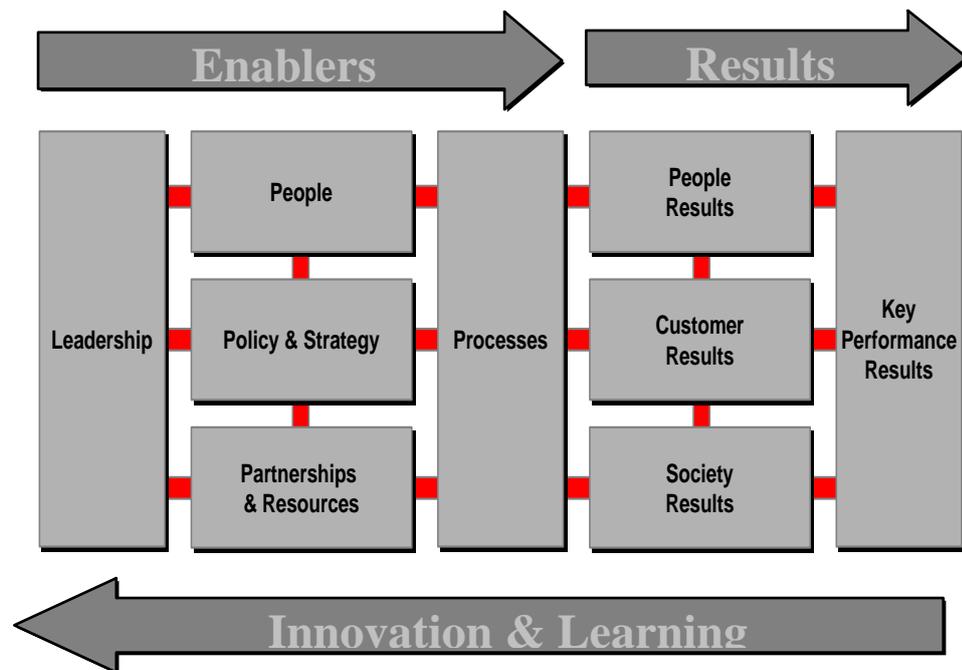
According to the EFQM Excellence Model[®], truly excellent organizations are measured by their ability to achieve and sustain outstanding results for all their stakeholders, such as customers, employees, shareholders and the community (EFQM (1999a)). It is stated that this requires a management approach based on the eight fundamental concepts in Table 1-1.

Table 1-1: The eight fundamental concepts

Fundamental Concept	Definition
Results Orientation	Excellence is achieving results that delight the organization's stakeholders
Customer Focus	Excellence is creating sustainable customer value
Leadership and Constancy of Purpose	Excellence is visionary and inspirational leadership, coupled with alignment of purpose
Management by Process and Fact	Excellence is managing the organization through a set of independent and interrelated systems, processes and facts
People Development and Involvement	Excellence is maximising the contribution of employees through their development and involvement
Continuous Learning, Innovation and Improvement	Excellence is challenging the status quo and affecting change by utilizing learning to create innovation and improvement opportunities
Partnership Development	Excellence is developing and maintaining value adding partnerships
Corporate Social Responsibility	Excellence is exceeding the minimum regulatory framework in which the organization operates and to strive to understand and respond to the expectations of their stakeholders in society

Adapted from: EFQM (2003)

The eight fundamental concepts form the basis of the EFQM Excellence Model[®], which is shown schematically in Figure 1-1. This has nine criteria broken down into two main groups, enablers and results. The five enablers are the things an organization does in order to achieve the desired results. This result/enabler breakdown provides a valuable way to classify the organization's activities and performance. The theme of innovation and learning spans the model and reinforces the feedback mechanisms that drive the improvement in the organization's performance.



Adapted from: EFQM (1999a)

Figure 1-1: The EFQM Excellence Model[®]

The fundamental concepts and the EFQM Excellence Model[®] have been described, but the key question is 'How does this help drive business improvement?' This is achieved through the application of RADAR[®] philosophy, which sits at the heart of the EFQM Excellence Model[®]. RADAR[®] consists of four elements based on Deming's widely accepted 'Plan – Do- Check – Act' cycle. The philosophy is that an organization needs to:

Determine the **R**esults it is aiming for from its policy and strategy

Plan and develop an integrated set of **A**pproaches

Deploy the approaches, then

Assess and **R**eview these approaches, to identify, prioritize, plan and implement improvements.

European, country-wide and regional awards are given on an annual basis to organizations who can demonstrate that continued or improving results across all the results areas are being achieved because of the approaches that are deployed across the organization. Many organizations conduct the activity of 'self-assessment' by reviewing their results and approaches against the EFQM Excellence Model[®] on the journey to becoming 'world-class'. The award process and self-assessment are outside the scope of this research.

1.3 Research supporting the models' structures

Recent work has examined the internal relationships between the elements within both the Baldrige Model and the EFQM Excellence Model[®]. Building on the earlier work of Evans (1992), who described the Baldrige Model as three related sub-systems, Curkovic, Melnyk et al. (2000) defined three factors to define TQM, consisting of TQM Strategic Systems, TQM Operational Systems, and TQM Information Systems. To this they added the construct of TQM Results and conducted a survey consisting of responses gathered from 526 plant managers within the US automotive industry. Using structured equation modeling, the authors found all of the causal paths specified in their hypothesized model to be positive and statistically significant. In concluding they stated that the study had shown empirically that the Baldrige framework did capture the concept of Total Quality Management.

In a study on applicants for the Arizona Quality Award Pannirselvam and Ferguson (2001) concluded that leadership had a key impact on all the constructs they tested and that areas such as human resource management had statistically significant impact. In concluding they claimed that, within scope of the research, they had validated the Baldrige framework. They did note that this was not the case in earlier work by Winn and Cameron (1998), the difference being partially put down to sampling and the process used to collect the data (Pannirselvam and Ferguson (2001)).

Like Curkovic, Melnyk et al. (2000), Meyer and Collier (2001) also used structured equation modelling to empirically test the causal relationships in the MBNQA Health Care Pilot Criteria using data from 220 US hospitals. Results of confirmatory structural equation modelling showed that many of the hypothesized causal relationships in the Baldrige model were statistically significant. The study found the Baldrige components of leadership and information and analysis were statistically significantly linked with organizational performance results, while human resource development and management and process management statistically significantly linked with customer

satisfaction. More recently Su, Li et al. (2003) have used structured equation modelling to confirm causal relationships in the Taiwan National Quality Award.

No similar studies could be found featuring the EFQM Excellence Model[®]. Research has questioned the weightings of the criteria. Research on Danish organizations suggested the weightings have remained constant in most areas over the period 1998 to 2001, but the weights do not match those given by the model. Results suggested that the enabler/results ratio is 70/30, and not 50/50 as defined in the EFQM Excellence Model[®] (Eskildsen, Kristensen et al. (2001); Eskildsen, Kristensen et al. (2002)), a result that is supported by Chuan and Soon (2000). Vokurka and Stading (2000) noted the different weightings given to similar criteria within the various quality frameworks and Dervitsiotis (1999) held the view that the weightings must change in line with changes in the business environment.

Following the review of the EFQM Excellence Model[®] in 1999, Nabitz, Severens et al. (2001) published an alternative model based on work conducted during the review. Using concept mapping to summarize the main areas of emphasis within the EFQM Excellence Model[®] and other Business Excellence models, the work concluded that there was an emphasis on customers, markets, suppliers and partnerships and that the measurement systems and results have a central position. Their 'improved' model had 11 criteria and, like the 'official' model, it is yet to be tested empirically. Within this revised model leadership was defined as being the key driving factor delivering the performance through the various activities.

Reiner (2002) conducted a dependency analysis using information from applicants from the Austrian Quality Award. The resulting model that Reiner constructed suggested that logical relationships exist, such as Leadership influencing People Management and Policy & Strategy and People Management influencing Processes. The work had some limitations, in particular the fact that the organizations used in the study were following the pre-1999 model and the range of the scores of these organizations was extremely wide (ca. 450 +/- 250).

1.4 TQM and research

Although it is generally accepted that Business Excellence can generate a sustainable competitive advantage, there is little or no theory to underpin this belief (Reed, Lemak et al. (2000)). Those working in the field of Business Excellence need to further establish underpinning theories that are consistent with Business Excellence practice (Leonard and McAdam (2001)). Even the large-scale quality models (e.g. Baldrige, EFQM Excellence

Model[®]) attract the attention of researchers who question some of their underpinning philosophy in regard to Business Excellence principles. For example, Grint (1995) and Wilkinson and Wilmott (1994) inquired if a coherent quality philosophy underpins these models. Wilson and Durant (1995) saw theoretical weaknesses, in that Business Excellence models can encourage a "motivational/directional effect", in other words, fulfilling award criteria is rewarded rather than achieving business goals. This is a form of goal displacement where the award model criteria become pseudo business goals. Furthermore, the models encourage evaluation against a standard rather than evaluation of the standard. Many of these problems were identified as relating to TQM's lack of theory and definition based on in-depth qualitative studies (Carr and Littman (1990); Leonard, McAdam et al. (2002); Leonard and McAdam (2002b)).

In reviewing the current position of TQM theory, Dale, Wu et al. (2001) noted that such theory was at an early stage of development and that it was often viewed as part of operations management. The theory is also fragmented (Link and Scott (2001)). The situation is not unlike the information systems body of knowledge where there are so few theoretical articles due to the youth of the subject and the difficulty in assembling a view in a multi-disciplinary field (Webster and Watson (2002)). Dale, Wu et al. (2001) concluded that TQM was becoming an academic subject in its own right and went on to state:

'To extend the scope of TQM (Business Excellence) theory it is necessary to incorporate management theories into its development and that much remains to be done for TQM (Business Excellence) to reach a stage of 'refine/ extend' in the theory building process.' Dale, Wu et al. (2001: p439).

A good theory has to begin somewhere and often this comes from theories (or researchers) from other areas (Ladik (1999)). Dale, Wu et al. (2001) noted that most research to date has been by practitioners and not academics, but many of the acknowledged theory originators have relevance to TQM theory. Earlier attempts to develop a theory for Business Excellence drew parallels between management theory and TQM noting the close connection with leadership theory (Dean and Bowen (1994)). This work raised a number of questions that are pertinent to the current research and they included:

- Can TQM be considered a substitute for leadership?
- What is the role of quality in competitive strategy?
- Can strategy formulation processes be improved? How?
- What are the relative contributions of person and system factors to performance?

In support of the observation TQM/ Business Excellence is establishing itself to be a dedicated area of theory, the International Encyclopaedia of Business and Management (Rogerson (2002)) has a short entry describing the evolution of the area from Fredrick Taylor's early views on manufacturing to the Business Excellence models on which this thesis focuses. Rogerson (2002) made the point that organizations tend to focus on conformance to these models and not value created from their use. He also outlined four future research trends, with this thesis contributing the first trend:

- How Business Excellence can be used to contribute to competitive advantage
- Understanding the voice of the customer
- Addressing environmental issues in product and service design
- Effect of IT on the core processes, such as Supply Chain and Customer Management

Zain, Dale et al. (2001) recommended some future research trends based on an assessment of 14 UK doctoral theses over the period 1988-1995. They categorized the research areas into 'People', 'Systems' and 'Techniques', but more importantly categorized 12 frameworks that were a result of the work. Zain, Dale et al. (2001) recommended a need for a 'meta model' summarizing 'Whats' and 'Hows' of the challenges that organizations face as a starting point for future research. They also noted that all the work in their sample was retrospective with very little foresight into next generation of quality tools, approaches and paradigms. New areas, such as e-commerce, were also not taken into account, supporting the view that the dynamics of the environment lacked consideration.

There have been calls for research into the relationship between Business Excellence and strategy. Morgan and Piercy (1996) noted that one of the fundamental questions of how quality may be used, as a base for competitive strategy has not been addressed and that this was a priority area for future research. This area of research is pertinent and applicable to industry as *'this is clearly an area which is attracting a great deal of interest and there is an urgent need to explore what senior managers are increasingly recognizing as critical interfaces in the pursuit of sustainable competitive advantage and superior business performance'* (Morgan and Piercy (1996: p242)). Leonard and McAdam (2002a) also noted that the full extent of the relationship between Business Excellence and corporate strategy has not been made at this time.

Sirkin and Stalk (1995) suggested a link between Business Excellence and strategy. In describing their 'Capabilities-based competition' approach they identified three basic

building blocks: Mastery of business processes, Superior knowledge and Internal organizational practices. All these three must be linked directly to the delivery of customer value and to the creation of sustainable competitive advantage for the company. They also noted that it is the role of top management to focus the organization on developing these capabilities.

1.5 Research focus

In this Chapter the EFQM Excellence Model[®] has been introduced and it has been argued that interest in Business Excellence from both organizations and researchers demonstrates that this is area where the current research will make a significant contribution.

The relationship between strategy and Business Excellence was noted to be of particular importance and there have been calls for more research in this area. Even a cursory glance at the EFQM Excellence Model[®] shows an overlap with the capabilities-based competition idea of Stalk, Evans et al. (1992), suggesting that the resource-based view of the firm was a good body of knowledge in which to ground the current research. There is an early indication, which will be expanded in the literature overview, that the external environment in which firms compete could have an impact on the success of a Business Excellence approach.

The focus of this thesis is to examine whether a Business Excellence approach develops strategic capability and whether this strategic capability leads to enhanced performance. The scope includes examining the effect of different environments on the success of such strategic capability development and the level of benefits derived. Being a holistic model covering most areas of an organization's activities, it was appropriate to limit the scope of this study to the main elements of the EFQM Excellence Model[®].

One area that is of particular interest is the way in which Business Excellence could develop an organization's intangible assets. McDonald-Wood (2004) noted that an organization's intangible assets can raise an organization's value by between 2 to 10 times its book value and that these intangible assets are an amalgam of knowledge, relationships, structure, processes, systems, market position, reputation, trust and leadership as well as the more traditional items such as intellectual property, licences and brand. Such a view was supported by Beer and Nohria (2000) and Kristensen and Westlund (2004b) made a direct link between Business Excellence and the value of intangible assets.

The literature review in Chapter 2 commences by reviewing the empirical research that has been conducted into the benefits to an organization of adopting a Business Excellence approach. This section of the literature review also examines the critical success factor research, with the aim of defining the main areas of Business Excellence for inclusion in the scope of the current work. The literature review continues by reviewing the current thinking in the area of the resource-based view of the firm, after establishing that this is a suitable theory on which to base Business Excellence research. A link is also drawn between the resource-based theory of the firm and the 'Management by processes and fact' Fundamental Concept of the EFQM Excellence Model[®]. Chapter 2 concludes by developing a research model and a number of hypotheses from the literature in preparation for Chapter 3, which addresses the methodological considerations.

A positivist approach was chosen for the research for a number of reasons, including the observation that prior research has tended to use this approach and the fact that the research sort to examine a number of relationships over a wide range of organizations. One of the unique features of the current work was the inclusion of both public sector and private sector organizations in the sample. Chapter 3 discusses the search and choice of the instruments used in the study, and where necessary, their conversion for use in the public sector, most research having been conducted in the private sector. Following Churchill's nine-step approach (Churchill and Iacobucci (2002)) the questionnaire was prepared and tested using a number of focus groups before being used for primary data collection. Data collection and data analysis plans are also formulated at this stage and these conclude Chapter 3.

The data analysis approach followed the 6-step advice of Hair (Hair, Anderson et al. (1998)). Selection of the sample was particularly challenging as the potential respondents were drawn from a number of sources. Due to this mixture, it was extremely important to review the data prior to the analysis and the steps taken to examine the data and purify the instruments are given in Chapter 4. Once the data was structured using techniques such as factor analysis, it was analyzed by running a number of regression models following the plan outlined in Chapter 3. This involved simple regression, multivariate regression and structural equation modelling. Once the models were calculated the results were interpreted, and these interpretations validated by sharing them with a number of focus groups to obtain their feedback. Use of interpretive methods alongside positivist methods is recognised as improving the quality of the output of the research (Jick (1979); Easterby-Smith, Thorpe et al. (2002)).

There was also a descriptive statistics element to the research in that the perceptions of the sources of organizational advantage were collected through the questionnaire in a partial replication of work conducted by Hall in 1991 and 1992 (Hall (1991); Hall (1992); Hall (1994)). Part of the validation was to share the results of the current research with Dick Hall to find that there was convergence of views between the two researchers.

One of the limitations of applying Hair's 6-step approach was that it reduced each element of the work to individual research streams. For example, there was a result on hypothesis 1, a result on hypothesis 2, etc. This is clearly the curse of the reductionist! There was an obvious need to bring all these research streams together in order to contribute to theory, and this is the purpose of Chapter 5, the Discussion Chapter. This Chapter commences by reviewing the results of each of the individual research themes, hypothesis by hypothesis, before bringing all the streams together to stand back and ask the question 'What is this all telling us?' This Chapter holds the main contributions of the current work both to theory and to practice.

The final Conclusions Chapter brings the research to an end. In addition to summarizing the main academic contributions and practical applications of the work, it notes the work's limitations and suggests further areas for research. There is also a section on the role of the researcher in the work and a section on the learning process.

2 Literature review

This literature review is structured around three main sections. First is the Business Excellence section, which commences with a review of the empirical evidence concerning the level of benefits that have been achieved by organizations that have adopted a Business Excellence approach. Although there has been limited empirical research to support the factors that underpin the various Business Excellence models around the world, extensive research has been conducted to show support for a relationship between the use of the Business Excellence frameworks and organizational success. From a review of the benefits literature a number of factors emerge, such as the level of benefit, timing of the benefit and the impact of the business environment. The methodologies used to determine the level of performance are also reviewed. The Business Excellence section concludes with a review of the 'Critical Success Factor' research, which identifies leadership as one of the key constructs through which Business Excellence could be measured.

The second section of the literature review considers the Resource-based View of the Firm (RBV). Whereas the Business Excellence literature is in its relative infancy, the RBV theory has evolved since the 1950s. The review explores the parallels between the RBV and Business Excellence and concludes that Business Excellence could be a potential contributor in the development of strategic capability, a view shared by several authors (e.g., Savolainen (2000a); Tena, Llusar et al. (2001); Rao, Youssef et al. (2004)).

As noted in Chapter 1, there has been a call for research to investigate the relationship between strategy and Business Excellence (Morgan and Piercy (1996); Leonard and McAdam (2002a)). A main purpose of this thesis was to investigate whether implementation of Business Excellence leads to the development of strategic capability, and whether this strategic capability leads to enhanced performance. The third section of the literature review develops the research model and a number of hypotheses that were tested. This research model was taken forward into Chapter 3, which addresses the research methodology.

2.1 Business Excellence: Benefits and critical success factors

This section commences by addressing a critical question: 'Does Business Excellence benefit organizations?' The literature review shows that, as a generalization, the answer to this question is 'Yes'. But it is not a simple answer as the various research studies give some conflicting results and there is suggestion that Business Excellence may not be an answer for everyone (Powell (1995); Harrington (2004)).

The scope of Business Excellence covers many activities (EFQM (2003)). The second part of this section reviews what is known as the critical success factor work where researchers have sought to identify the activities or attributes critical to the success of Business Excellence. It was from this review that Leadership was established as a critical success factor and one that could be used in the research to measure the level of Business Excellence within organizations.

2.1.1 The benefits of Business Excellence

Research into the benefits of Business Excellence fall into two broad categories: Single organization case studies and studies that examine a sample of organizations. The former often feature award winners and many case studies are written by practitioners, raising questions about the independence of the conclusions. The literature is full of such work (e.g., Williams and Boudewijn (1994); Tanner, Duffy et al. (1995); Hirst (1996); Loveday (1996); Mason (1996); Parry (1996); Cooper (1997); Holmes, McClaskey et al. (1998); Taylor (1998); Chattopadhyay and Szydowski (1999); Daniels (2004); Johnson (2004); Rao, Youssef et al. (2004)).

It remains a fact that the Business Excellence models are based on perceptions of what organizations believe are important (Black and Porter (1996)). Most research has focused on searching for a relationship between organizations that compare well against the excellence models and delivery of outstanding performance. There are a number of studies that have sought to show the benefits of quality on an organization's performance. For example, in a study of US and Japanese air conditioner manufacturers, Garvin (1983) found that savings in the internal (scrap and rework) and external (field service) costs associated with the higher quality manufactures more than offset quality control costs. Garvin concluded that superior levels of performance come not from national traits or cultural advantages, but from sound management practices that are systematically and deliberately applied.

The PIMS database has been used to find a positive relationship between quality and profitability (e.g., Schoeffler, Buzzell et al. (1974); Craig and Douglas (1982); Phillips, Chang et al. (1983); Buzzell and Gale (1987)). There have also been a number of studies examining the benefits of quality approaches such as ISO9000 (e.g., Leung and Chan (1999); Bauer, Tanner et al. (2001); Corbett, Montes et al. (2002a); Corbett, Montes et al. (2002b); Rajan and Tamimi (2003); Arauz and Suzuki (2004); Mahadevappa and Kotreshwar (2004); Pivka (2004)) and six-sigma (e.g., Goh, Low et al. (2003); Thawani (2004)).

In this section the studies that have specifically examined the relationship between Business Excellence and Performance across a variety of industries have been reviewed and it will be seen that these use a number of different research methods. The first major study on an excellence model was conducted by the United States General Accounting Office in 1991 (GAO (1991)). This led to a report linking improvement performance with quality efforts in the 20 highest scoring Baldrige award applicants over the years 1988 and 1989. The evidence from this small sample suggested that the organizations achieved improved employee relations, better quality, lower costs, greater customer satisfaction, improved market share and improved profitability. Common features appearing in these high-scoring organizations were customer focus, management leadership in quality values, employee involvement, an 'open' corporate culture, fact-based decision making and partnerships with suppliers. This report also reviewed previous research, including one based on Deming Prize Winners between 1961 and 1980, concluding that most companies saw a favourable upturn in performance. Average annual cost savings attributable to the quality improvement programme ranged from \$1.3 million to \$116 million per year (Shetty (1993)).

It has been estimated that 1/5 of Business Excellence programmes in the USA and Europe fail (Prajogo and Sohal (2004)). A report by Wilkinson, Redman et al. (1993) as cited by MacLeod and Baxter (2001) summarized the outcomes of four European studies on the effectiveness of Business Excellence. Of these, a London Business School study concluded that, of the organizations asked to self-evaluate against the US Baldrige model criteria forty two of them had poor performance (O'Brien and Voss (1992)). Wilkinson, Redman et al. (1993) conducted a postal self-completed questionnaire of 4000 members of the British Institute of Management. Only 9% of the 880 respondents claimed their Business Excellence experience had been very successful. Mellahi and Eyuboglu (2001) attributed the failure of Business Excellence implementation to the failure of management to establish a proper system for its implementation, as opposed to being due to external pressures. They suggested that strong competitive pressures potentially affecting the survival of the organization could benefit Business Excellence implementation.

Over the past 10 years there have been many other studies. Table 2-1 summarizes some of the more notable research, which has been categorized by research method. A number of conclusions may be drawn from the analysis, and these have been broken down into a number of themes.

Lack of work on the EFQM Excellence Model®

Most of the work in this area has centred on the Baldrige award (O'Brien and Voss (1992); Wisner and Eakins (1994); Hendricks and Singhal (1997); Rajan and Tamimi (1999); Hendricks and Singhal (2000); Fisher, Dauterive et al. (2001); Link and Scott (2001); Hendricks and Singhal (2001a); Hendricks and Singhal (2001b); Przasnyski and Tai (2002); NIST (2002b)). Surprising little has looked at the EFQM Excellence Model® (Longbottom (1998); ECforBE (1999); Oakland (1999b); ECforBE (2002)) although the general area of Total Quality Management has received attention (Wilkinson, Redman et al. (1993); Powell (1995); Redman, Mathews et al. (1995); Ahrie, Waller et al. (1998); Easton and Jarrell (1998); Holmes, McClaskey et al. (1998); Terziovski and Samson (1999); Curkovic, Vickery et al. (2000); Sun (2000); Agus and Sagir (2001); Douglas and Judge (2001); Kim, Shim et al. (2001); Rahman (2001); Tena, Llusar et al. (2001); Beheshti and Lollar (2003); Eriksson, Johansson et al. (2003); Agus (2004)).

Lack of work within the public sector

Empirical work on public sector organizations is lacking as only the studies by Redman, Mathews et al. (1995), PriceWaterhouseCoopers (2000) and Agus (2004) could be found in the review that presented definite results. Even so, the work of Redman, Mathews et al. (1995) was somewhat basic and, although it acknowledged that public sector organizations were subject to lower market exposure than private sector organizations, some of the work is open to question. For example, the concept of profitability in the public sector is hard to comprehend. The PriceWaterhouseCoopers (2000) UK public sector, on the other hand, was inconclusive with respect to actual benefits obtained. Sun (2000) made reference to collecting data from public sector organizations in Norway, but no results were presented.

Table 2-1: Evidence for benefits of Business Excellence

Reference	Methodology	Main Findings
Stock Performance Studies		
<p>NIST (2002b) Also see Helton (1995) for the original work.</p>	<p>Fictitious stock holding of Baldrige winning public companies investing on the day that the award was announced.</p>	<ul style="list-style-type: none"> • Portfolio outperforms the S&P 500 by about 3 to 1. • ‘Whole company winners’ had a return of 4.5 to1.
<p>Easton and Jarrell (1998)</p>	<p>Event study with the sample chosen through interviews. Of over 500 potential firms 108 were selected for the study. The Value Line Investment survey was used to forecast future performance and examination of actual data to identify the excess unexpected performance. A five-year time period since TQM implementation was the point used to review performance in the study.</p>	<ul style="list-style-type: none"> • The authors claim clear evidence of the long-term performance of firms that had implemented TQM. • TQM firms were graded into ‘More advanced TQM’ and Less advanced TQM’ firms based on the interviews. The performance of the ‘More advanced TQM’ firms was higher than for the ‘Less advanced firms’. • The effects were greater for the group of manufacturing firms in the sample. • The possibility that the effects were attributed to re-engineering was examined and this hypothesis was rejected. • It was noted that TQM only worked in certain organizations suggesting that the conditions must be right. • There was no evidence that TQM had a detrimental effect on the organizations.

Reference	Methodology	Main Findings
Rajan and Tamimi (1999)	<p>This study expanded on the NIST findings by tracking the stock performance of all publicly traded Baldrige award recipients from 1988 through 1997 using different portfolio investment strategies. Specifically, two strategies were examined: a simple buy-and-hold strategy and a portfolio rebalancing strategy. The return and risk of each portfolio was measured and compared to the Standard & Poor's 500 performance.</p>	<ul style="list-style-type: none"> • Both investment strategy Baldrige portfolios soundly outperformed the Standard & Poor's 500 index. • Over the period 1989 -1997, the buy-and-hold portfolio provided an average geometric return of 20.19% compared to 18.18% mean return on the S&P 500. The rebalancing portfolio yielded an even higher return of 22.54% for the same period. The volatility of both Baldrige portfolios, measured by the standard deviation, was higher than the S&P 500 index, however. • For the buy-and-hold strategy, an initial investment of \$100,000 would have grown to \$523,245. • For the rebalancing strategy, the ending value of the portfolio was an impressive \$622,949. • An original investment in the S&P 500 index would have grown to \$449,809, which was \$173,140 less than the value of the rebalancing portfolio.

Reference	Methodology	Main Findings
<p>Hendricks and Singhal (1997); Hendricks and Singhal (2000); Hendricks and Singhal (2001a); Hendricks and Singhal (2001b)</p>	<p>Analysis of share price performance and published data of award winning organizations in the USA compared with selected benchmark organizations. National, regional and company award winners were also compared in the analysis. Examined share price performance five years prior to winning the award and five years afterwards.</p>	<ul style="list-style-type: none"> • Prior to implementation there was no difference in the performance of the award winners and benchmarks. • Post-implementation results showed award winners outperformed benchmarks in a number of performance measures (E.g., operating income, sales, ROA, ROS). • Organizations receiving independent awards performed better than for those receiving customer awards. This applied to performance data and stock performance. • More benefit (in % terms) was achieved by small compared to larger organizations. • With stock performance, award winners outperformed the S&P 500 and the control sample of benchmarks. • Authors concluded that TQM is not a tool or technique, not a programme, not a replacement for corporate strategy but was a source of competitive advantage.

Reference	Methodology	Main Findings
Przasnyski and Tai (2002)	Assessment of stock performance of public traded award winners up to 1998 including an adjustment for market and industry effects by taking matching companies.	<ul style="list-style-type: none"> • Any increase in share price was built over a period as the organizations built their competence. In most cases there was no surprise element. • Baldrige winners under-performed by 17% when compared to stocks with a similar risk and industry. It was concluded that the 'spectacular' returns in other studies were due to market and industry factors. • Baldrige companies did outperform the S&P 500 but a higher return would have been achieved by investing in the matching companies. • Only one company had a high return for low risk. Adjusting for risk and market movements, only about half of the companies outperformed the market. • A fictitious fund of all the Baldrige winners, when adjusted for risk, did outperform stocks with similar risk. • Baldrige winners can give a superior S&P 500 performance, but it is not as spectacular as that claimed by other researches (e.g., the NIST research).

Reference	Methodology	Main Findings
Survey Based Studies		
Powell (1995)	Mail survey of 143 firms with 25% usable response rate (36 returned). Firms were both TQM adopters and non-adopters. Followed up with interviews of CEO and quality executives in 30 firms.	<ul style="list-style-type: none"> • Study concluded that TQM could produce economic value to the firm but not for all TQM adopters. • Success depended on executive commitment, open organization and employee empowerment. • It depended less so on benchmarking, training, flexible manufacturing, process improvement and improved measurement. • TQM can produce an advantage but it is not necessary for success. • It was suggested that TQM's highest purpose and real contribution to US business was that it provided a framework that helped firms understand and acquire resources as part of an integral change programme.
Redman, Mathews et al. (1995)	Large-scale survey of 4000 managers nationwide from a number of industries, including public and private sector. 201 public sector questionnaires were returned. The survey sought opinions on the effect of TQM on a number of performance measures. T-tests were used to compare the means of the public sector and private sector samples.	<ul style="list-style-type: none"> • The public sector means were all higher than the private sector means, indicating a lower effect (scale 0 = major improvement, 4 = major determination). • Most means were below the midpoint of 2 (only labour turnover was above at 2.02). • Public sector returned higher means statistically significant at the 0.05 level for the performance measures of quality awareness, customer satisfaction, teamwork, customer complaints, employee morale, scrap/ defect levels, sales, returns, profitability, and labour turnover. • The other performance measures were cost efficiency, productivity, safety, and absenteeism. • It was concluded that public sector and private sector were at the same stage of TQM development.

Reference	Methodology	Main Findings
Terziovski and Samson (1999)	Questionnaire sent to 4,000 Australian and New Zealand organizations with a response rate of ca. 35%.	<ul style="list-style-type: none"> • TQM was statistically significantly related to a variety of performance measures. <p>Other findings included:</p> <ul style="list-style-type: none"> • Difference in relationship between TQM and organizational performance across industry sector and size of organization. • TQM did not guarantee success. • Manufacturing organizations were more likely to achieve better performance in employee relations, customer satisfaction, operational performance and business performance with TQM than without it.
Curkovic, Vickery et al. (2000)	Survey of the top 150 (in revenue terms) independent automotive parts suppliers. A response rate of 38% was achieved (57 responses). The research examined the relationship between 'Quality-related action programmes', 'Dimensions of quality performance' and 'Firm performance'.	<ul style="list-style-type: none"> • Not all action programmes had pervasive direct effects, but many had indirect effects. The main relationships were: <ul style="list-style-type: none"> ○ Action programmes had an effect on conformance, which in turn had an effect on Return on Investment (ROI). ○ Action programmes had an effect on responsiveness to customers, which had an effect on ROI, ROI growth, market share and market share growth.

Reference	Methodology	Main Findings
Sun (2000)	Survey based on the Baldrige criteria conducted in Norway in 1997 with a sample of 900 quality managers. 363 replies were returned (ca. 40%). Manufacturing and service organizations were included, as well as organizations of various sizes.	<ul style="list-style-type: none"> • Based on the correlations between the enablers and performance, the top five enablers were quality leadership, strategic management of quality, human resource development, close cooperation with customers and consideration of customer satisfaction. • In terms of attention, however, organizations paid less attention to leadership, quality strategy and human resource development • A public sector sample was also collected but not reported in the paper.
Fisher, Dauterive et al. (2001)	Survey of the different USA state awards and comparing this with economic factors within the State.	<ul style="list-style-type: none"> • The results indicated that there maybe a relationship between US States that demonstrated commitment to quality business practices, but it was accepted that many other factors had an influence on economic performance.
Agus and Sagir (2001)	Survey of Malaysian manufacturing companies to investigate the extent of total quality practices (based on Saraph, Benson et al. (1989). The results were correlated with an assessment of competitive advantages and financial performance variables.	<ul style="list-style-type: none"> • TQM practices had an indirect impact on financial performance mediated by competitive advantage. • TQM had a strong effect on competitive advantage, which ultimately led to a more statistically significant impact on financial performance

Reference	Methodology	Main Findings
Douglas and Judge (2001)	Survey of general medical hospitals. Target for questionnaire was the CEO and Director of Quality. Overall response rate was 22% (193 hospitals returned at least one questionnaire).	<ul style="list-style-type: none"> • Strong empirical support for a positive relationship between the degree of TQM implementation and organizational performance was found. The greater the degree of TQM implementation then the greater was the benefit. • Some empirical evidence that the relationship between TQM implementation and organizational performance was moderated by organizational structure. • Claim that the study broke new ground in the TQM literature by identifying a complex relationship between organizational structure and TQM implementation success.
Link and Scott (2001)	Survey of 875 American Society for Quality (ASQ) members to examine the economic impact of the Baldrige award programme. Overall response rate was 7.43% (65 responses). Approach used counterfactual as opposed to the spillover evaluation method for the analysis of the investment using public funds. The paper argued generalization to all ASQ members and the US economy.	<ul style="list-style-type: none"> • The conservative estimate of the present value (in constant 2000 dollars) of the net private benefits associated with the Baldrige National Quality Program was \$2.17 billion. • Estimated that if the entire economy benefits to the same extent as the ASQ members, the conservative estimate of the present value (in constant 2000 dollars) of social benefits associated with the Baldrige National Quality programme would have been \$24.65 billion. • Based on information provided by the Baldrige National Quality programme, the present value (in constant year 2000 dollars) of social costs associated with the programme to date was \$119 million. • Therefore, from an evaluation perspective for the economy as a whole, the benefit-to-cost ratio characterizing the Baldrige National Quality programme was conservatively estimated to be 207-to- 1. • The authors recognised that Business Excellence research to be both fragmented and multi-disciplined.

Reference	Methodology	Main Findings
Rahman (2001)	<p>Postal survey of SMEs (less than 100 employees) in Western Australia using the Australian award as a framework. A sample of 250 organizations achieved a 21% response (53 responses).</p>	<ul style="list-style-type: none"> • Leadership was defined as being key. • A correlation matrix between factors in the Australian award framework and Organizational Performance gave statistically significant correlations for leadership, processes, products and services, people and customer focus. • The relationships of organizational performance with information and analysis, and strategy and planning were non-significant.
Tena, Llusar et al. (2001)	<p>231 personal interviews were conducted to collect the data from Spanish organizations of varying sizes, covering different industrial sectors and service sectors. Structured equation modelling was used to test the hypotheses.</p>	<ul style="list-style-type: none"> • A positive relationship was found between the extent of TQM within an organization and performance, with a loading of 0.409. • It was also found that TQM had a positive effect on distinctive competencies (0.775 loading). • Finally a positive relationship was shown to exist between distinctive competencies and financial results (0.392 loading). • No limitations of the research were noted in the paper.

Reference	Methodology	Main Findings
Kim, Shim et al. (2001)	<p>Surveyed 399 managers in the Korean semiconductor industry with a 100% response rate. They were from three semiconductor companies in Korea. The survey captured the managers' perception of the definition of quality and current performance. The alpha on the 10-item performance scale was 0.8815.</p>	<ul style="list-style-type: none"> • The study showed a relationship between quality and perceived performance levels but the result depended on the definition of quality, with a value-based concept of quality giving the strongest relationship. • The performance measures were deliver quality, process quality, customer satisfaction, cost reduction, task-time reduction, market share, productivity, business process systemization, job satisfaction and profitability.
Beheshti and Lollar (2003)	<p>Postal survey of 500 US manufacturing and Service SMEs with between 10 to 499 employees. Response rate was 16.9 % (98 usable responses). Questions addressed the impact and importance of quality management. Data segmented into organizations that had TQM programmes and those that had just implemented quality control. Only descriptive statistics are given as results.</p>	<ul style="list-style-type: none"> • For manufacturing organizations a composite index measuring the impact of quality management was 4.34 for TQM organizations and 3.86 for non-TQM organizations (out of a maximum of 5). The figures for service industries were 3.91 and 3.62 respectively. • Measuring importance on a similar scale, manufacturing returned values of 4.18 and 3.50 for TQM/ non-TQM and service 4.05 and 3.58. • No statistical tests performed to check significance of the mean differences. • The impact index measured a number of factors, including improved product quality, increased efficiency and increased productivity. • The importance index considered factors such as the importance of quality to profitability, increasing market share and employee training & development. • Crucially, although the composite indices were higher for TQM than non-TQM organizations, the scores on the individual factors were not. • The study concluded that SMEs that invest in TQM do get statistically significant returns and improvement in performance.

Reference	Methodology	Main Findings
Eriksson, Johansson et al. (2003)	Looked at in-company awards of 4 organizations – 77 units surveyed with a 66% return rate. Categorized organizations as not applying, applying once or applying for more than one award.	<ul style="list-style-type: none"> • Performance areas examined were customers, employees, operating and financial results. • No real difference in the groups – all had some level of improvement. Time period start of 1998 till end 2001.
Agus (2004)	A survey of 430 top officers in Malaysian public sector organizations with matching customers. Five independent variables included were top management commitment, customer focus, benchmarking, training and employee focus. Dependent variables were service performance and customer satisfaction. SEM used to perform the analysis.	<ul style="list-style-type: none"> • All the independent variables correlated statistically significantly with the dependent variables. It was concluded that top management commitment is crucial to the success of TQM. • A cluster analysis clustered the sample into two groups: 'Top TQM implementers' and 'Average TQM implementers'. • With the first model loadings were lowest for management commitment and benchmarking. It was suggested that these might not be so critical in the public sector in Malaysia. Study repeated the calculations deleting these 2 items and got the model to fit. • In the second model, the TQM – Performance relationship was high and statistically significant. • Study concluded that employee focus, training and customer focus are important elements in TQM implementation in Malaysia. • Also conclude that service performance and customer satisfaction had a positive impact on overall performance.

Reference	Methodology	Main Findings
Case Studies/ Document Reviews		
Wisner and Eakins (1994)	Review of the quality strategy of 17 Baldrige winners between 1988 to 1992. Changes in performance with respect to the industry and due to the quality programme are summarized.	<ul style="list-style-type: none"> • Major benefits reported over a number of financial (Sales, ROA, ROS, etc) and non-financial (quality, rework and returns, projected future competitiveness, etc.) measures. Overall change due to quality programme determined as being 58% for the financial indicators and 84% for the non-financial indicators.
ECforBE (1999); Oakland (1999b))	Document review of EFQM and BQF award applications followed by selected interviews.	<ul style="list-style-type: none"> • Statistically significant results were reported in all the results areas: business results, customer satisfaction, people satisfaction and impact on society. • Good practices were reported for all areas of the pre-1999 EFQM Business Excellence Model[®] and a 'Route to Business Excellence' model was presented. This model has 'People Management' at the centre. • Many organizations showed a sustained or improving performance over a three-year period (80-100%) and a sustained or improving performance over a five-year period (50-80%). • It is of interest that many organizations, whilst delivering improved performance, did not meet their internal targets. The range for particular measures varied from 10-100%. • The authors acknowledged that no causal relationship could be proven.

Reference	Methodology	Main Findings
Quantitative Analysis of Secondary Data		
Longbottom (1998)	<p>20 organizations studied, 6 of which were top in terms of self-assessment against the EFQM Excellence Model®.</p> <p>The leading group of six organizations (based on their self-assessment rating) were compared using 13 financial ratios over a 3-year period (1991 to 1994). These results were also compared against industry averages for the same period.</p>	<ul style="list-style-type: none"> • The leading group achieved better than average results across the range of measures, in some cases by a statistically significant margin. In relation to market share, 30-50% better over the period, profitability 25-28% better and cost attainment 5-8% better. • Two of the organizations in this group of six had achieved a statistically significant transformation in business performance, and were highlighted as best improvers by industry analysts UBS. • While these findings were encouraging and appeared to show a positive link between self-assessment and bottom line, they must be approached with some caution. The size of sample was small and organizations studied were in the early stages of implementation. It was also evident from the research that several companies were moving to greater emphasis on non-financial indicators, i.e. balanced performance measures or scorecards. However, very few data were available at the time of the study with which to make meaningful comparisons.

Reference	Methodology	Main Findings
Ogden and Watson (1999)	Analysis of published customer service data and profit/ equity information for 60 privatized water companies in the UK. The hypotheses tested were that published customer service levels will be negatively related to the companies' contemporaneous reported profitability and that there will be a positive correlation with future performance.	<ul style="list-style-type: none"> • The main conclusion was that it is possible to align the apparently conflicting needs of different stakeholder groups.
Hillman and Keim (2001)	Using data from the Stern Stewart Performance 1000 database and the KLD database a sample of 308 firms was subjected to a quantitative analysis looking to test the relationship between stakeholder management and social issue participation on shareholder value creation.	<ul style="list-style-type: none"> • A positive relationship was found between stakeholder management and shareholder value creation. • A negative relationship was found between social issue participation and shareholder value creation. • The main conclusion was that investing in stakeholder management was of benefit to organizations but social issue participation was not. This conclusion does not find support for the EFQM Corporate Social Responsibility Fundamental concept.

The effect of market and industry factors

Although the stock performance of Baldrige award winning organizations outperformed the S&P 500, the extent to which it does this is open to question. A significant impact on this type of work appeared to be whether market, industry and risk factors were taken into account (Easton and Jarrell (1998); Przasnyski and Tai (2002)). That market and industry factors may have had an effect is supported by work using other research methodologies, and in particular, survey work (e.g., Terziovski and Samson (1999); Beheshti and Lollar (2003)). In studying the effect of IT leadership on company performance, Santhanam and Hartono (2003) adjusted for what they call the 'Halo' effect by adjusting the financial results from previous years. These problems show that the event share-price studies are less than straightforward.

Effect of the environment

The observation that industry and market factors may have an affect on the effectiveness of Business Excellence raises a question as to the extent of the effect of the dynamics of the environment. The environment may be a reason why some researches conclude Business Excellence is not a guaranteed recipe for success (Powell (1995); Terziovski and Samson (1999); Eriksson, Johansson et al. (2003)). Managing volatility in the environment will be a major challenge for managers in the future (Prahalad (2000)) and Jones (2004) argued that high-performing leaders respond to change faster, deal with ambiguity, provide direction, manage constraints and leverage the intellectual capital of the people surrounding them. Whether Business Excellence can be effective in periods of turbulent change has been called into question (Dervitsiotis (2004)).

Competitive advantage

There is a question mark over whether Business Excellence delivers competitive advantage. There is little theory to underpin the generally held view that Business Excellence does give a competitive advantage (Reed, Lemak et al. (2000)) and it has been noted that, despite the search for better ways of doing business and the adoption of strategies such as Business Excellence, some organizations still continue to struggle to retain their competitive advantage (Briggs and Keogh (1999)). From an empirical perspective research indicated organizations following a Business Excellence path are not guaranteed success and that organizations who have not taken this route can still be successful (Powell (1995); Terziovski and Samson (1999)). Several authors (e.g., Wisner and Eakins (1994); Holmes, McClaskey et al. (1998); Curkovic, Vickery et al. (2000); Agus and Sagir (2001); Tena, Llusar et al. (2001); Agus (2004)) provided evidence that benefit is delivered as a direct of quality activities. Some of the relationships were mediated through other constructs, as in the case of the Tena work, where the quality to

performance relationship was found to be mediated through 'Distinctive Competencies' (Tena, Llusar et al. (2001)). The research included both small and large organizations taken from a selection of different industries.

Path dependency

How long it takes to deliver the benefit was another talking point. Hendricks and Singhal (2001b) concluded that a level of Business Excellence must be reached before the benefit is achieved, as the performance of the award winners was no difference to the benchmark organizations prior to an award being given. This conclusion is at variance with other authors (Douglas and Judge (2001); Tena, Llusar et al. (2001); Przasnyski and Tai (2002); Sureshchandar, Rajendran et al. (2003); Warwood and Roberts (2004)), who indicated that benefit was built as a result of Business Excellence implementation over time. Researchers have used a 5-year time period to allow for implementation (Easton and Jarrell (1998); Hendricks and Singhal (2000); Hendricks and Singhal (2001a); Hendricks and Singhal (2001b)). Whatever the situation, all this research points to a path-dependency.

Effect of organization size

Small organizations were reported to achieve a higher level of benefit in percentage terms than large organizations (Hendricks and Singhal (2001a)). In another study an opposite effect was reported and larger organizations delivered more benefit (Terziowski and Samson (1999)). The observation is that size may have an effect on a Business Excellence and performance relationship.

Meeting all stakeholder needs

The stakeholder study of Ogden and Watson (1999) supported the argument that multiple stakeholder needs may be balanced, which is a central principle behind the Fundamental Concepts of the EFQM Excellence Model®. The work of Hillman and Keim (2001), however, suggested that social issue participation had a negative effect on shareholder value. It is acknowledged that both of these studies are limited, as they were conducted within specific industries, but there is an indication that the Fundamental Concepts may be an oversimplification of the real world situation.

Research methodologies

Looking at the research methodologies, a number have been used, with the stock performance approaches and survey approaches being the most popular. With the survey research, bias in the sample if it is taken from award winners is a concern as is the low sample size in many studies. A limitation of the stock performance research, apart from the way that external factors are accounted for, is the way that the comparisons are chosen. Several authors noted that different benchmarks might have led to different conclusions. The impact of the results on the size on the firm and industry are also worthy of note.

2.1.2 What are the Critical Success Factors of Business Excellence?

The purpose of this section is to identify the factor or factors by which the level of excellence in an organization could be measured. Link and Scott (2001) noted that due to the holistic nature of Business Excellence researchers often choose to take a specific aspect to study.

The work to identify the critical success factors for success of Business Excellence has been broken down into three approaches. First, the work where the factors were derived from the literature has been described. This is followed by the work that has defined several success factors and tested these empirically. Finally, a review of the major Business Excellence frameworks concludes the section, before drawing the findings together to select the factor that was used to represent Business Excellence in the current research.

2.1.2.1 *Critical success factors derived from the literature*

Dumond (2000) identified ten factors from the literature to generate a model for delivering value within organizations. As part of the index measuring the competitive fitness of global firms, Larréché (2002) determined twelve 'capabilities' and Hodgetts, Luthans et al. (1994) ten core values from the literature, with their framework being justified using examples of practices taken from leading organizations. Waldman (1994), as cited by Rahman (2004), summarized Juran and Crosby's approaches and identified eight elements for TQM. Finally, the work of Oakland (1999a) defined a framework from a combination of the literature and consulting experience. Table 2-2 summarizes the comparisons. The references chosen are not designed to be an exhaustive list but just a cross-section of available work.

Table 2-2: Comparison of models derived from the literature

Source	Factors
Kaye and Anderson (1999)	<ul style="list-style-type: none"> • Senior management commitment and involvement. • Leadership and active commitment to continuous improvement demonstrated by managers at all levels. • Focusing on the needs of the customer. • Integrating continuous improvement activities into the strategic goals across the whole organization, across boundaries and at all levels. • Establishing a culture for continuous improvement and encouraging high involvement innovation. • Focusing on people. • Focusing on critical processes. • Standardizing achievements in a documented quality management system. • Establishing measurement and feedback systems. • Learning from continuous improvement results, the automatic capturing and sharing of learning.
Dumond (2000)	<ul style="list-style-type: none"> • Continuous improvement • Customer success • Interface relationships • Job design • Organization culture • Organization mission and strategy • Performance measurement system • Process management • Training
Larréché (2002)	<ul style="list-style-type: none"> • Corporate culture • Customer orientation • Human resources • Innovation • International • Market strategy • Marketing operations • Mission and vision • Organization and systems • Performance • Planning and intelligence • Technical resources

Source	Factors
Luthans and Hodgetts (2002)	<ul style="list-style-type: none"> • Customer-driven • Full participation • Information system • Leadership • Long-range outlook • Management by fact • Partnership development • Prevention, not detection • Reduced cycle-time • Reward systems • Public responsibility
Waldman (1994)	<ul style="list-style-type: none"> • Broad definition of quality • Commitment continually to improve • Development of a quality culture • Involvement and empowerment • Involvement of external suppliers and customers • Institution of leadership practices • Orientation toward managing-by-facts • Upper management commitment
Oakland (1999a)	<ul style="list-style-type: none"> • Benchmarking • Continuous improvement • Defining improvement priorities • Defining opportunities for improvement • Direction: Vision, mission, goals and critical success factors • Education, training and development • Measurement of progress • People development • Process management • Leadership • Self-assessment • Step change

Examining Table 2-2 it is clear that continuous improvement/ change, customer focus, culture, direction, involvement and empowerment, management by fact, employee development, involvement of customers and suppliers, and leadership are all common factors.

2.1.2.2 Empirical evaluation of the critical success factors

Research has been conducted on the critical factors of the success of Business Excellence since the late 80's. Based on a questionnaire and factor analysis Saraph, Benson et al. (1989) derived eight critical success factors for TQM. Later Porter and Parker (1993) derived a model from the literature and tested this for criticality using a survey. Black and Porter (1996) followed this with another study, which led to ten critical success factors.

One problem faced by these authors was that the results of the research had been limited by the scope of the studies. As noted by Black and Porter (1996), the Saraph et. al. study did not include customer satisfaction and customer relationship management whereas their own work based on a sample of EFQM members was biased. Table 2-3 summarizes the major studies this field.

Various researchers have used different terms to represent similar concepts. The common factors identified from the analysis were communication, culture change, customer focus and satisfaction, direction setting, employee development, employee involvement and empowerment, leadership/ top management commitment, learning, performance measurement, process and systems management, and supplier management and involvement.

2.1.2.3 Business Excellence award model frameworks

The final area considered was the content of the Business Excellence frameworks themselves. Table 2-4 summarizes an analysis of the content of the most popular Business Excellence models. The main themes identified from the analysis included leadership, strategy & planning, customer focus, people focus, suppliers & partnerships, process management and a balanced scorecard of results.

Table 2-3: Critical success factors from empirical work

Saraph, Benson et al. (1989)	Porter and Parker (1993)	Ramirez and Loney (1993) (Tier 1 only)	Flynn, Schroeder et al. (1994)	Powell (1995)
Employee relations Process management Product/ service design Quality data and recording Quality policy Role of the quality department Role of top managers Supplier quality management Training of employees	Communication for TQM Employee involvement Management behaviour Organization for TQM Process management and systems Quality technologies Strategy for TQM implementation Training and education	Clear mission statements Culture change Customer satisfaction Education Error prevention Goal clarity Management commitment Participative management Strategic quality plan Top management steering committee	Customer involvement Employee empowerment Process management Product design Quality information Supplier involvement Top management support Workforce management	Adoption and communication of TQM Benchmarking Closer customer relationships Closer supplier relationships Committed leadership Employee involvement Flexible manufacturing Increased training Open organization Process improvement measurement Zero-defects mentality

Ahrie, Golhar et al. (1996)	Black and Porter (1996)	Dow, Samson et al. (1999)	Claver, Tari et al. (2003)	Baidoun (2004) (Tier 1 only)
Benchmarking Customer focus Design quality management Employee empowerment Employee training Internal quality information usage Statistical process control usage Supplier performance Supplier quality management Teamwork structures Top management commitment	Customer Satisfaction Orientation Communication of Improvement Information Corporate Quality Culture External Interface Management Operational Quality Planning People and Customer Management Quality Improvement Measurement Systems Supplier Partnerships Strategic Quality Management Teamwork Structures for Improvement Teamwork Structures for Improvement Quality Improvement Measurement Systems	Benchmarking Corporate supplier relations Customer focus Design quality management Personal training Shared vision Use of Just In Time principles Use of teams Workforce commitment	Business Results Continuous improvement Customer satisfaction Leadership Learning Process Management Quality Planning Social impact Specialised training Supplier management Training	Committed workforce Consistent communication on direction Continuous improvement Customer focus Documented quality system Policy development and goal deployment Quality management structure Senior executives involvement Visibility of senior executive commitment

Table 2-4: The common themes from the Business Excellence frameworks

	Deming Prize	Baldrige Award	European Quality Award	Canadian Quality Award	Australian Quality Award	Singapore Quality Award
Leadership	Policy & organization for leadership; supporting supervision	Guiding the organization, governance and organizational performance	Setting direction & values and creating an environment for excellence	Establishing unity of purpose & direction. Enabling change for improvement	Executive, company & community leadership	Senior executive leadership, organizational culture, community & environment responsibility
Strategy & planning	Future plans, quality control focus & initiatives	Action plans - strategy into action plans, key performance measures & projecting future performance	Implementing the vision & mission via a clear stakeholder focused strategy	Linking planning to strategic direction. Implementing & measuring performance to assess progress	Policy, value integration & the strategic process	Strategy development & deployment
Customer focus	Service activities & customer relationships	Market requirements, customer relationships & satisfaction	Leaders involvement with customers, customer relationship management, customer satisfaction measurement & feedback	Focus on the customer & marketplace and on the achievement of customer satisfaction & loyalty	Customer needs awareness, customer relationship management and satisfaction measurement	Establishing customer requirements, managing the relationship & measuring satisfaction

	Deming Prize	Baldrige Award	European Quality Award	Canadian Quality Award	Australian Quality Award	Singapore Quality Award
People focus	Training & motivation of skilled labour	Human resource focus and emphasis on approaches to promote high performance	Releasing the full potential of people through trust & empowerment	Encouraging & enabling people to contribute to the organization's goals whilst realizing their full potential	Developing potential through effective people management, involvement, training & communication	Emphasizes planning and enabling people performance through development, involvement, care & recognition
Suppliers & partnerships	Vendor training & associations of related companies	Improvement of partnering process & evaluation of supplier performance	Beneficial partnerships built on trust, sharing of knowledge & integration	Building key external relationships that are critical to the organization's strategic objectives	Building "quality" relationships	Effective supplier & partnering process
Process management	Standardization, quality assurance, maintenance & improvement	Value creation & support processes – design, control & improvement	Process design, management & improvement. Generating value for customers & other stakeholders	Process management to support the organization's strategic direction with an emphasis on prevention & continuous improvement	Quality of product design & services, supplier relationships & improvement	Focus on the innovation process and process management & improvement
Balanced scorecard of results	Quality, delivery, cost, profit, safety & environmental effects of quality control	Customer, product & service, financial & market, human resource & organizational effectiveness results	Perception & performance indicators for customers, people & society. Key performance outcomes & indicators	Customer, people, process, partnership, societal & owner/shareholder measures	Organizational performance – customers, shareholders, employees & community	Customer, financial & market, people & operational results

Adapted from: Vokurka and Stading (2000); Porter and Tanner (2003), and Stading and Vokurka (2003)

2.1.2.4 Implications of the CSF literature for the current research

The purpose of this section of the literature review is to review the current literature, defining the critical success factors with the objective of defining a factor that could be used to measure the level of Business Excellence within organizations. The actual Business Excellence framework adopted is not important (Fountain (1998)) and a number of authors have expressed the view there is no universal recipe that gives a solution to successful Business Excellence for all organizations (e.g., Youssef and Zairi (1995); Harrington (2004)). Rahman (2004) suggested the critical success factors be categorized as 'soft' or 'hard' to reflect their focus. The results of the analysis of the literature from the three sub-sections have been categorized in this way in Table 2-5.

The analysis in Table 2-5 identified several potential factors that could be used to measure Business Excellence within an organization. The potential factors have been categorized by the enabler criteria of the EFQM Excellence Model[®] in Table 2-6. From the available options Leadership was chosen as the area on which to base the research. This conclusion is well supported (e.g., Crosby (1984); Deming (1991); Juran (1992); Dale and Cooper (1994); Hodgetts, Luthans et al. (1994); Waldman (1994); Powell (1995); Youssef and Zairi (1995); Zairi (1995); Darling (1999); Edgeman and Rodgers (1999); Scholtes (1999); Yusof and Aspinwall (1999); Zairi (1999); Oakland (1999a); Sun (2000); Savolainen (2000a); Guillen and Gonzalez (2001); Kanji (2001); Rahman (2001); Waldman, Ramirez et al. (2001); Kanji and Sá (2001a); Perles (2002); Beheshti and Lollar (2003); Eng and Yousof (2003); Sureshchandar, Rajendran et al. (2003); Agus (2004); Gallear and Ghobadian (2004); Prajogo and Sohal (2004); Rao, Youssef et al. (2004); Warwood and Roberts (2004)). There has been a call for more work to be conducted on the relationship between Business Excellence and leadership (Dean and Bowen (1994)).

Table 2-5: Analysis of critical success factors

Perspective	CSFs Derived From The Literature	CSFs From Empirical Work	Common Themes From The Business Excellence Frameworks
Soft Factors	<p>Customer focus †</p> <p>Culture †</p> <p>Employee involvement and empowerment †</p> <p>Leadership/ top management commitment †</p>	<p>Communication</p> <p><i>Culture change *</i></p> <p>Customer focus and satisfaction †</p> <p>Employee involvement and empowerment †</p> <p>Leadership/ top management commitment †</p>	<p>Customer focus †</p> <p>Culture †</p> <p>Leadership †</p> <p>People focus †</p>
Hard Factors	<p>Continuous improvement/ change</p> <p>Direction setting †</p> <p>Management by fact</p> <p><i>Employee development *</i></p> <p>Involvement of customers and suppliers †</p>	<p>Direction setting †</p> <p><i>Employee development *</i></p> <p>Learning</p> <p><i>Performance measurement *</i></p> <p><i>Process and systems management *</i></p> <p>Supplier management and involvement †</p>	<p><i>Balanced scorecard of results *</i></p> <p><i>Process management *</i></p> <p>Strategy & planning †</p> <p>Suppliers & partnerships †</p>

Key: † **Common factors across all three areas.** * *Common factors from two areas*

Table 2-6: Potential factors to measure Business Excellence

Enabler Criteria	Soft Factors	Hard Factors
Leadership	Customer focus Culture Leadership	Involvement with customers Involvement with suppliers
Policy and Strategy		Direction setting
People Management	Employee involvement/ People focus	
Partnership and Resources		Involvement with suppliers
Processes		Involvement with customers

Another reason for choosing leadership as a key enabler area for the research was that leadership is common across different industries. As the EFQM Excellence Model® is a universal model it is expected that the leadership approach and the way that people are involved in the organization will show some consistent themes. It is not as if one has to deal with the complication of manufacturing Vs service or public Vs private variations with leadership, as might be the situation with direction setting, involvement with customers and the involvement with suppliers. An alternative option would have been the employee involvement/ people focus.

Leadership as a subject area has a very large scope (Bolden (2004)). Higgs (2002) noted the number of books and library references on the subject. Defining leadership is complicated due to its complexity. Grint (2004) notes that firstly there is a process problem, secondly a position problem, thirdly a philosophical problem and finally a question over the purity of leadership. Northouse (2001) identified four common themes in leadership: leadership is a process, leadership involves influence, leadership occurs in a group context, and leadership involves goal attainment.

This literature search had to have focus and be consistent with a Business Excellence viewpoint. The review in the next section commences with an overview of the area of Leadership and will continue to examine Leadership and people involvement in a Business Excellence context. It is worth noting in his review of leadership frameworks Bolden (2004) cited the EFQM Excellence Model as one of the more important frameworks.

2.2 Leadership and Business Excellence

Ireland and Hitt (1999: p43) defined strategic leadership as ‘a person’s ability to anticipate, envision, maintain flexibility, think strategically, and work with others to initiate changes that will create a viable future for the organization’. Strategic leadership is distributed amongst employees within the organizational community. Ireland and Hitt continued by arguing that sometimes leadership processes are difficult to understand and imitate, and therefore may lead to a competitive advantage. The impact of knowledge workers in the 21st century is also emphasized and Warren Bennis is cited as having said ‘the key to competitive advantage in the 1990s and beyond will be the capacity of leadership to create social architecture that generates intellectual capital’ (Ireland and Hitt (1999: p53)). Such views are consistent with a Business Excellence philosophy. This was further confirmed when one considers Ireland and Hitt’s comparison between the strategic leadership practices over the 20th and 21st centuries (Table 2-7).

Table 2-7: Strategic leadership practices

20 th Century Practice	21 st Century Practice
<ul style="list-style-type: none"> • Outcome focused • Stoic and confident • Sought to acquire knowledge • Guided peoples’ creativity • Work flows determined by hierarchy • Articulated the importance of integrity • Demanded respect • Tolerated diversity • Reacted to environmental change • Served one great leader • Viewed employees as a resource • Operated primarily through a democratic mindset • Invested in employees’ development 	<ul style="list-style-type: none"> • Outcome and process focused • Confident, but without hubris • Seeks to acquire and leverage knowledge • Seeks to release and nurture peoples’ creativity • Work flows influenced by relationships • Demonstrates the importance of integrity through actions • Willing to earn respect • Seeks diversity • Acts to anticipate environmental change • Serves as the leader and the great group motivator • Views organizational citizens as a critical resource • Operated primarily through a global mindset • Invests significantly in citizens’ continuous development

Adapted from: Ireland and Hitt (1999)

2.2.1 Leadership from a Business Excellence perspective

'Globally, leadership is regarded as crucial to quality' (Edgeman and Rodgers (1999: p117)). Perles (2002: p59) concluded from the literature that *'managerial commitment and leadership are indispensable elements in a successful implementation of TQM'*. He distinguished the difference between commitment and leadership, noting that *'Some authors do not appreciate that managerial commitment is a narrower term than managerial leadership. A manager who is a leader is committed to the process of change, but a committed manager does not have to be a leader'* (Perles (2002: p62)). This is a view shared by Guillen and Gonzalez (2001), who also noted the growth in the use of Business Excellence models and the fact that the results of such an approach are mixed. In reflecting on the situation they state *'leadership seems to be the key of success in TQM implementation process, it is hard to find sound reasons to justify that TQM cannot be deployed without leadership'* (Guillen and Gonzalez (2001: p175)). Their work, featuring two case studies on Spanish ceramic companies, concluded that the degree of implementation of the Business Excellence principles depended on the leadership. Bauer (2002), in a quantitative study of EFQM member organizations, also found a relationship between leadership and the success of Business Excellence implementation. A limitation of both these studies was external validity and subsequent generalizability.

In studying organizational excellence, Darling (1999) reported an analysis of a large number of multinational companies led to the confirmation of the success of four leadership strategies as proposed by Bennis and Nannus:

- Attention through vision (which is essential to create focus for the organization).
- Meaning through communication (capacity to articulate a compelling image of the future and develop shared meanings and interpretations of reality, facilitating coordinated action).
- Trust through positioning (trust provides the foundation which maintains organizational integrity, through establishing and sustaining a position, i.e. a set of actions to implement the vision, the leaders establishes trust).
- Confidence through respect.

Kanji and Sá (2001a) presented a number of core competencies of leadership in quality-orientated organizations as derived from the literature. These are given in Table 2-8.

Table 2-8: Core competencies of leadership in quality-orientated organizations

Vision and Purpose	Creating and Articulating Vision, Mission and Guiding Principles
Ethics and principles	Shaping an organizational culture based on the organizational values that stresses integrity and builds trust; use principles to guide decision-making
Communication	Sharing the vision with all organizational members; encouraging discussion, feedback and involvement; inspiring confidence in the employees; reinforcing organizational values; establishing empathy
Customer orientation	Directing attention to customer concerns and needs; commitment to serve both external and internal customers; designing systems to respond to their expectations
Organizational change	Creating change; making vision a reality even in the face of resistance or opposition; providing adequate resources for changes to happen
Structures and systems	Establishing organizational policies, structures and practices that are consistent with the TQM vision
Measurement, evaluation and reporting	Establishing systems to measure effectiveness, efficiency and service; creating and maintaining reporting mechanisms
Process improvement	Designing and redesigning processes and systems to improve productivity and responsiveness; organize work in a way that makes inter-connectedness between the various roles clear; apply statistical process control
Team development	Establishing a team-based structure that cuts across all the functions and boundaries; fostering high performance through teams and teamwork
Developing subordinates	Challenging subordinates to learn; setting developmental and career goals; stretching subordinates to full potential
Developing partnerships	Creating a climate of win-win with customers, suppliers and the community, through a strategic approach that will help deliver benefits for all the parties
Innovation and continuous learning	Generating new ideas and stimulating them in others; actively pursuing and encouraging creativity; learn from subordinates, colleagues, suppliers and customers

Adapted from: Kanji and Sá (2001a: p708)

Easton (1993), cited in Zairi (1995), conducted a study of leadership practices among 22 organizations that submitted applications for the MBNQA. Some strengths were consistently identified:

- Leaders spend substantial time reminding people of the importance of customers and improving quality. In addition, a lot of effort was placed in educating people, speaking in public and face-to-face contacts with customers, suppliers and employees.
- Leaders had developed a vision and a set of values to develop a quality culture.
- The vision was translated into congruent goals.
- A proper structure supports quality efforts.

On the other hand, the following areas for improvement were identified:

- Senior managers' primary focus was on short-term strategic goals that tended to be financial in nature and they lacked appreciation of quality measures and improvement measures.
- Leaders did not take a process-based approach in their decision-making and their use of hard facts and information was poor.
- Leaders had a limited and poor understanding of TQM and its potential.
- Leaders set targets in isolation from the process and expected people to perform and deliver the expected results.
- Poor use of data relating to customers, suppliers and employees. As such leaders had very poor understanding of causes of problems and what caused variability in their organizations.
- Although a structure for quality might be present, leaders tended to treat quality as a separate activity.

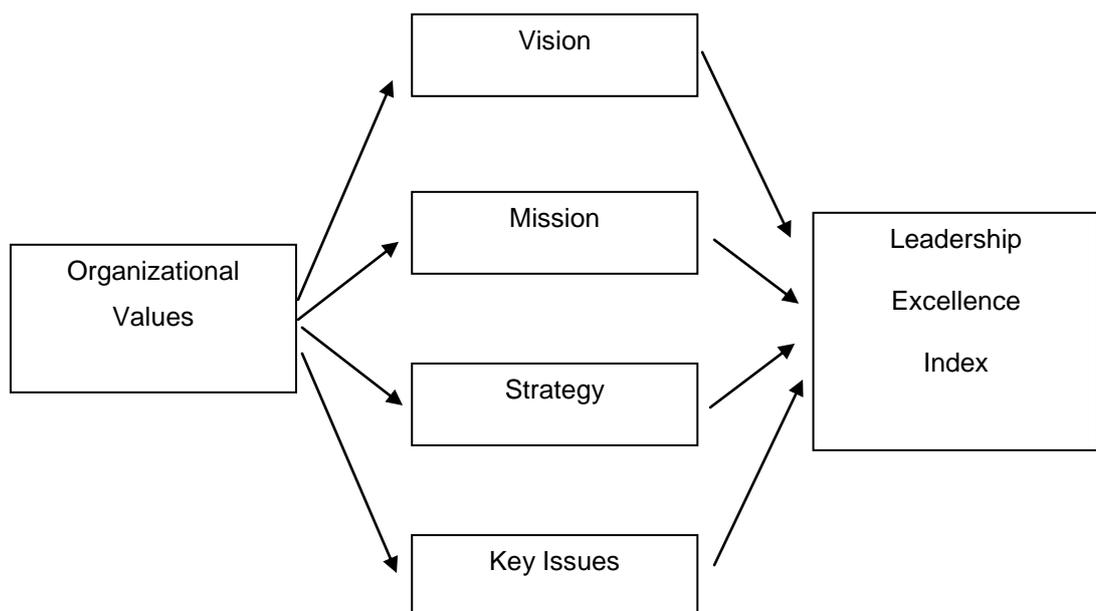
From a review of Business Excellence models Edgeman and Scherer (1999) concluded that leadership was considered in four non-prescriptive areas:

- Leadership internal to the organization (particularly as related to TQM, recognition and reward, and resource commitment)
- Involvement with customers, suppliers and other external constituencies
- Responsibility to society
- The leadership system

From the literature, Kanji and Sá (2001a) identified what they believed to be the critical success factors for leadership excellence. These were:

- The existence of strong and shared organizational values (which provided the foundation for the identity of the organization and were reflected in its mission, vision, strategy and management practices).
- The development and communication of an inspiring vision.
- The definition of a mission that stated what the organization stood for.
- The development of a strategy aligned to the mission and vision and able to create a sustainable competitive advantage over the competitors.
- The establishment of an organizational structure and operational mechanisms that facilitated the implementation of the mission, vision and strategy.

Kanji and Sa's work led to the development of their Leadership Excellence Index (LEI) using structural equation modelling (Kanji and Sá (2001a)). It was noted that partial least squares was used to confirm their model. The Leadership Excellence Index reflects, in quantitative terms, and through a single and integrated measure, the simultaneous performance of leaders in the roles of establishing and sharing the values, developing and communicating the vision, defining the mission, selecting and implementing a strategy, and managing other operational key issues. The model on which it is based has several constructs and these are shown in Figure 2-1.



Adapted from: Kanji and Sá (2001a: p710)

Figure 2-1: Leadership Excellence Index structural equation model

A review of the leadership literature allowed Kanji and Sá (2001a) to operationalize the constructs, developing a number of questionnaire items with high content validity. The instrument has been applied to 'a typical service sector company' and the results gave alphas for each of the constructs of between 0.736 to 0.978 demonstrating high reliability. Kanji and Sá (2001a) recognized, however, that the model was embryonic and was in need of being tested in other situations. The instrument was identified as having some value in the current research to measure Leadership Excellence.

Prabhu and Robson (2000) conducted a survey of 289 manufacturing companies in the North East of England using an instrument developed from a 'PILOT' instrument that had been developed by IBM Consulting (UK) and the London Business School to determine good performance in the manufacturing industry. The Prabhu and Robson instrument considered 'practice' and 'performance' and the results led to six categories:

1. 'World class' (WC) for those achieving high scores in every area of practice and performance.
2. 'Potential winners' (PW) who were similar to, but not as high achieving, as 'world class'.
3. 'Vulnerable' (Vuln), who achieved good performance but were weak on practice.
4. 'Promising' (Prom), whose strengths and weaknesses were opposite to those of (Vuln).
5. 'Room for improvement' (Rfl).
6. 'Could do better' (CdB), for those still a long way short of best practice in many areas.

The manufacturing companies varied in size but 75% had less than 200 people. All companies faced intense competition on price, quality, reliability, short lead times and, to a lesser extent, on product customisation. It was noted, however, that the instrument was designed for use in the manufacturing sector and that no alphas were given for the constructs. There are four constructs in the instrument, these being:

1. 'Explicit' variables relate to practices that are strategic in nature and which would be undertaken by senior management in these organizations. Establishing strategies for manufacturing, quality, human relations and product technology fell into this category.
2. 'Implicit' variables relate to a number of other practices, which had a direct association with leadership in that they were the outcomes of strategic directions set by the senior management of the company. Examples include 'shared vision' or 'employee involvement' practices.
3. 'Operational Performance' variables that were outcomes from the above two constructs of 'leadership' practices. The measures selected represented performance

indicators in areas such as manufacturing, quality, product design or customer service.

4. The impact of competition and the pressure for change on the above three groups of variables was considered in the fourth category.

The Prabhu and Robson research found that despite a strong association between the leadership variables and world-class status, there was a great deal of variation in the extent to which the better performing companies scored on certain measures. Moreover, there was variation in the way in which the poorer performing companies scored on particular measures. In particular, the proportion of PW/WC scoring highly on explicit leadership measures varied between 18 and 78%, and in the same way, the proportion of RfI/CdB scoring poorly on the same measures varied between 21 and 84%. Indeed, where PW/WC were relatively weak in practice and performance, the RfI/CdB were extremely poor. Areas in this particular category included benchmarking and employee involvement, as well as performance issues involving product cycle times. Prabhu and Robson (2000) concluded that the results indicated how both explicit and implicit leadership characteristics are associated with various aspects of operational performance and that senior management commitment to leadership can have a positive effect on operational performance. However, the results also gave an indication that while internal impact can be seen, their impact on issues external to the business is much more varied.

The results with regards to different practices within different classifications of company were consistent with the findings of Seddon (1998) who noted that organizations with similar Business Excellence leadership self-assessment scores varied in their practices and the outcomes of their activities. Baxter and MacLeod (1999) used a case study approach to examine two organizations that had a similar self-assessment score but different outcomes. One was an aerospace company whose senior manager tried to get continuous improvement going but then went down a directive re-engineering route. Improvements were made through the re-engineering project but the target was not reached. After the loss of the leader the project was abandoned. The second case study was a cement firm and the leader went for a more empowered approach. This approach was embedded into the organization and it continued when the leader moved to another position. Baxter and MacLeod (1999: p16) stated that *'authors are keen to draw a distinction between militaristic notions of leadership and what they assert is necessary to promote TQM within organizations, which is a participative, facilitative style of leadership. There are few empirical studies investigating these ideas. The literature contains many post hoc rationalizations of successful attempts at quality improvement and a key element of this is frequently a tale of a charismatic leader who drives the process on'*.

One example where people participation did have a definite positive effect was reported by Sobo and Sadler (2002). Recording the situation in a Childrens' Health Care organization the authors described a participatory action research approach where an 'Employee Leadership Council' was formed to improve leader-employee communications. The initiative delivered a number of benefits to the organization, including direct CEO exposure to employee concerns, positive communications and improved accountability. No negatives were recorded. There were also benefits to the Employee Leadership Council members, such as improved interdepartmental interaction, access to the CEO and the opportunity to contribute to change (Sobo and Sadler (2002)).

Case study data gathered from four Finnish manufacturing companies in the food, metal, construction and concrete products industries showed that advantageous learning in quality implementation was based on developing solid conceptual skills for managers in the first place, managerial commitment to quality and the sharing of quality thinking in the entire organization (Savolainen (2000b)). The paper acknowledged a lack of empirical studies in this area and chose to use a case study approach to examine the factors that support learning.

Savolainen (2000b) noted that:

- Enhancing competitiveness through quality had become a more and more important challenge of learning in organizations.
- Quality improvement efforts had failed in a number of cases; implying that in spite of the rapidly expanding quality movement, systematic evidence concerning its actual effects on management practices is relatively scarce.

In the food industry company, managers' perceptions of quality were unclear, fragmented and general in nature but they pursued clearer, more integrated thinking. This was demonstrated, for example, by the fact that quality was mainly perceived as a broad, holistic, organization-wide activity (process quality). Although the basic principles of the TQM ideology were printed in the quality policy, depending on the managerial level, the management viewed quality from different perspectives. A philosophical view was common at the top level, whereas a customer perspective dominated at the middle level. A negative learning cycle developed and the company "avoided" effective learning. The need for cultural change was evident in the food industry company. However, the characteristics of the current organizational culture, i.e. lack of purpose and vision, seemed to hinder improvement initiatives.

In the metal and construction companies, top and upper management played a visible role, acting as quality advocates and champions and supporting the implementation. This facilitated gaining support to the ideas of quality, overcoming resistance, sharing ideas, and achieving organizational involvement, which all promoted learning. As a result, a positive learning cycle developed: concepts and ideas were materialized and internalized. Active measures were taken through several quality programmes to transforming the ideas of quality into action.

Savolainen (2000b: p202) provided a quotation from a middle manager in the construction company, that had undergone the learning process for over ten years and summarized the nature of the learning process in quality implementation, and the outcome and strategic meaning of continuous learning for the company: *"The point is, it's a competitive advantage that cannot be copied or stolen, it must be accomplished and earned through your own efforts, it's not the kind of knowledge that you can steal from someone. If you want to influence the organization's way of action and operations they change terribly slowly and awkwardly, however hard you try to pressure all workers. Changing an individual may be easier, but just try to move the entire system ... you can't even transfer a person who knows and masters these things to a different place because there will be new people there who have their particular way of operating. It may take something like five years, nobody can do it in two or three years."* *"The result is the survival of our company ... we've even survived these times. If we hadn't got the ideological basis the company would not exist any more. In that sense it was quite crucial."* Such views are consistent with the resource-based view of the firm that will be discussed later in this Chapter.

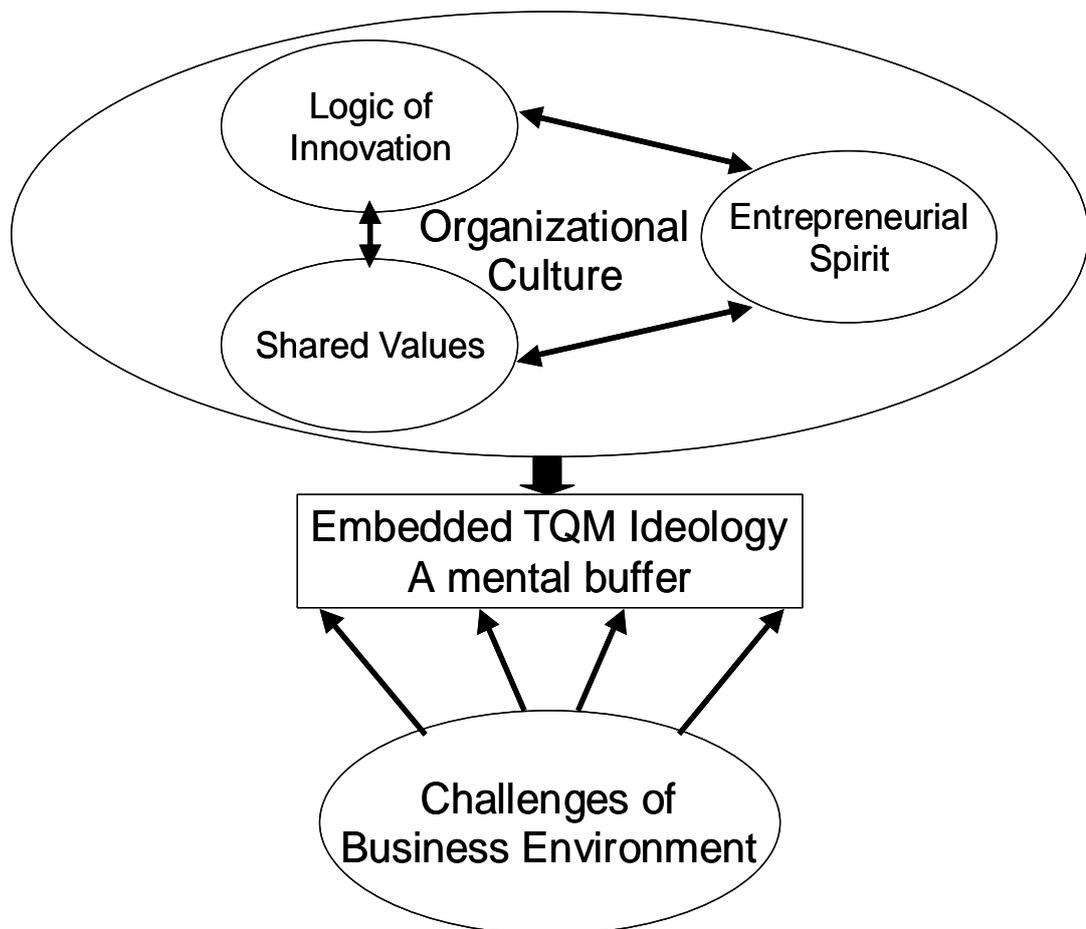
Savolainen (2000a) also recognised that competitive advantage could potentially be achieved through embedding quality ideology into an organization, and reported a longitudinal study on two Finish firms, one from the construction industry and the other from the metal industry, although the paper only reports on the construction industry case. Both firms were considered to have embraced a Business Excellence approach and were under competitive pressure. Four elements of success were identified, these being a participative strategy, the use of external expertise, gradual implementation with persistent, gentle persuasion, and top and upper management role and commitment – 'The champion and the persuader'.

Two successful leadership strategies were observed. These were:

- Coach-leadership strategy – Driven by leader with 'resilient coaching' through indigenous pioneering efforts and in cooperation with organization members.

- Leadership-expertise strategy – Driven by founder-manager with ‘gentle persuasion’, supported by cooperation with the external expert as a supplier of quality theory.

Savolainen (2000a) concluded that the advantageous embedding of a quality management ideology began to dislodge the assumptions and beliefs of the established management paradigm. This led to a ‘mental buffer’ to resist the challenges of the external environment and, therefore, facilitated the organization’s adaptation to the environment by strengthening its competitive ability (see Figure 2-2). This conclusion was supported by Lakomski (2001), who stated that an organization’s resistance to change in the face of environmental pressure could be a function of its culture. Although not mentioned specifically by either author, this conclusion is consistent with the concept of dynamic capabilities where an organization has the ability to re-configure its resources in reaction to changes in the external environment (e.g., Eisenhardt and Martin (2000)).



Adapted from: Savolainen (2000a)

Figure 2-2: Savolainen's 'Mental Buffer'

Keeping with the theme of role of leadership in the creation competitive advantage, successful corporate leaders, when applying their global leadership style and substance skills, enhance the intangible assets of corporate reputation (Petrick, Scherer et al. (1999)). A link between Business Excellence and the development of leadership that generates a sustainable advantage has been noted, the Baldrige model being explicitly mentioned as a beneficial management practice. The authors provided a strategic resource model, which provides a valuable link between leadership and the resource-based view of the firm, which will be discussed in the next section. This model is given in Figure 2-3.

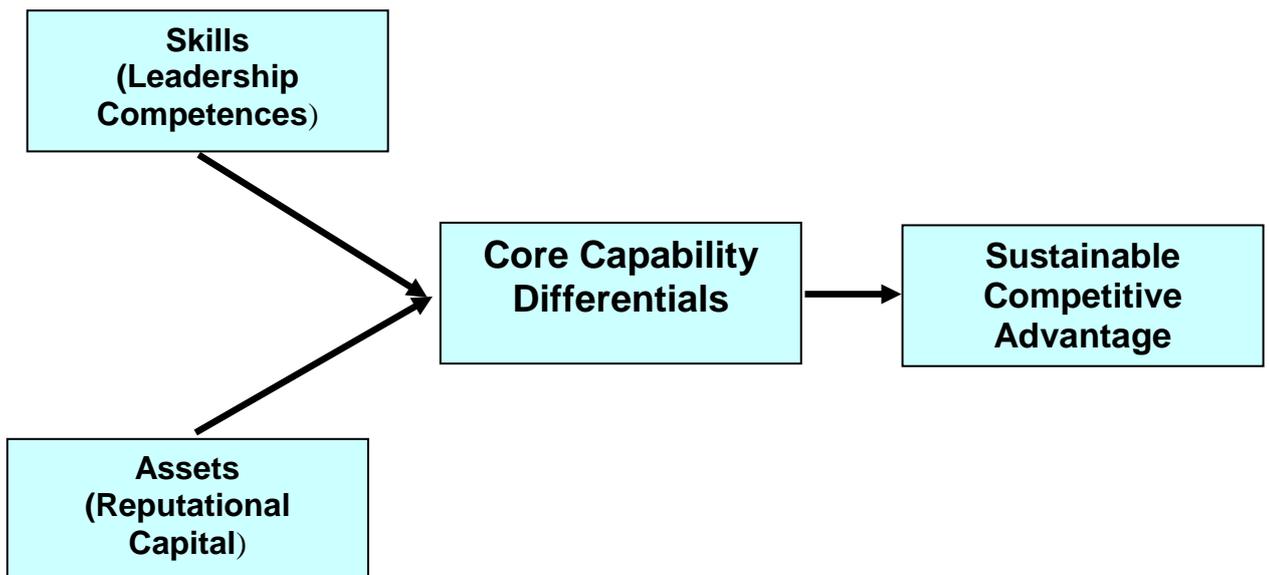


Figure 2-3: Strategic resource model linking leadership with assets and SCA

Adapted from: Petrick, Scherer et al. (1999)

Tierney, Farmer et al. (1999) were interested in employee creativity and conducted a study of 191 non-clerical employees from the research and development sector of a U.S. chemical corporation. Three indicators of creative performance were collected for each employee, which were supervisor ratings of creativity; number of invention-disclosure forms (forms submitted by employees describing their new ideas and screened for quality by an independent group of judges); and number of published research reports. In addition, employees completed questionnaires to assess their cognitive style, intrinsic motivation for creativity, and perception of the quality of their relationship with their supervisors. Finally, supervisors completed questionnaires to assess their own cognitive style and intrinsic motivation for creativity. It was noted that the study was a cross-sectional study when a longitudinal study would have been more appropriate to test causal relationships.

The study revealed some interesting associations between employee personal characteristics, leader-employee relationships, and creative performance. As expected, Tierney, Farmer et al. (1999) found that employees higher in innovative cognitive style and intrinsic motivation tended to have higher creativity ratings than those who were lower in these characteristics. Employees higher in intrinsic motivation also tended to produce a greater number of invention-disclosure forms than those lower in intrinsic motivation. In addition, employees who reported a positive leader-employee relationship tended, on average, to have higher creativity ratings and produce more invention-disclosure forms than those reporting less positive relationships.

The leader-employee relationship did not affect the number of invention-disclosure forms or research reports of employees with very innovative cognitive styles, but did have an effect on employees with less innovative cognitive styles. Adaptive and moderately innovative employees in very positive leader-employee relationships produced a greater number of invention-disclosure forms and research reports than those with less positive leader-employee relationships. In fact, adaptive employees in a positive leader-employee relationship produced more invention-disclosure forms than employees with a highly innovative cognitive style in any situation (Tierney, Farmer et al. (1999)).

The final area reviewed in this section relates to the building of change capability. Eisenbach, Watson et al. (1999) noted the importance of leadership to change management. Higgs (2002) notes that it has been estimated that up to 70% of change initiatives fail and that *'there is a driving need for leadership behaviours which result in effective change implementation'*. Indeed, how 'Leaders identify and champion organizational change' has now become a specific sub-criterion in the earlier 1994 version of the EFQM Excellence Model® (Porter and Tanner (2003)). Higgs and Rowland (2001: p3) observed organizations need to consider change from two perspectives:

- Fundamental change: A change in the culture or identity of the organization
- Building a capacity for change that, importantly, highlights both speed of response and implementation excellence.

The first perspective could be considered to be consistent with the overall aim of Business Excellence, which is the achievement of 'world-class' performance, and the second perspective could be considered to be consistent with the adoption of an excellence philosophy, which allows the organization to achieve this transformational goal. Indeed, Ulrich and Yeung (1989) found that critical competencies related to:

- Helping to focus individual attention on organizational mind-sets;

- Facilitating strategy implementation; and
- Building change capability.

Higgs and Rowland (2000) developed a change management competency framework defining eight clusters, which are given in Table 2-9. A thirty-scale instrument supported the framework, which was derived following the observation of two organizations, that the authors claimed had high face validity.

Table 2-9: Change management competencies

Competence	Description
Change initiation	Ability to create the case for change and secure credible sponsorship.
Change impact	Ability to scope the breadth, depth, sustainability and returns of a change strategy.
Change facilitation	Ability to help others, through effective facilitation, to gain insight into the human dynamics of change and to develop the confidence to achieve the change goals.
Change leadership	Ability to influence and enthuse others, through personal advocacy, vision and drive, and to access resources to build a solid platform for change.
Change learning	Ability to scan, reflect and identify learning and to ensure insights are used to develop individual, group and organizational capabilities.
Change execution	Ability to formulate and guide the implementation of a credible change plan with appropriate goals, resources, metrics and review mechanisms.
Change presence	Demonstrates high personal commitment to achievement of change goals through integrity and courage, whilst maintaining objectivity and individual resilience.
Change technology	Knowledge, generation and skilful application of change theories, tools and process.

Adapted from: Higgs and Rowland (2000)

In discussing their findings, Higgs and Rowland (2000) raised the question whether the ability to lead change should be a core aspect of all leadership development. *'There are numerous writers currently claiming that this ability is really the only competency that will make a difference to competitive advantage in the ever changing world of increased globalisation, rapid technological shifts, and consumers demanding ever greater quality at lower costs'* (Higgs and Rowland (2000: p20)).

The change management competency framework has been subjected to limited empirical testing (Higgs and Rowland (2001)). Research measured the response to the instrument before and after a change management programme. The impact of the change management programme on the demonstration of change leadership competencies was tested. Qualitative data was given to support the findings. A statistically significant impact was found for all eight competences except the change leadership element, which is disappointing as this is the factor that is of most interest in the current work. Higgs and Rowland (2001) called for more work in this area. A question mark remains over the external validity of the instrument due to its limited application.

2.2.2 Implications of leadership for the current research

The literature review in this section has identified a number of interesting issues. There is evidence that leadership has an effect on organizational performance (e.g., Ireland and Hitt (1999); Shea (1999); Prabhu and Robson (2001); Kanji and Sá (2001a)), which supports its use in this study. Leadership is therefore confirmed as the key component by which Business Excellence would be measured in the current work.

It is apparent that there are many leadership theories and although leadership features in the current research it is only a component with the objective of representing Business Excellence. The review uncovered two important studies linking leadership to Business Excellence. The first of these was Prabhu and Robson's work using the 'Pilot' based instrument (Prabhu and Robson (2000)) and the second the 'Leadership Excellence' instrument (Kanji and Sá (2001a)). These are potential instruments that will be considered as part of the research methodology, which is outlined in Chapter 3.

2.3 Business Excellence and the resource-based view of the firm

This section commences by arguing that the resource-based view of the firm (RBV) is an appropriate body of knowledge on which to base Business Excellence research. This is followed by a review of the basics of the RBV as an introduction to what is a very large body of knowledge. For this research there are three areas that are of particular interest and each of these is covered in the following sections. Firstly, the sources of competitive advantage are reviewed, as different authors have developed different terms for what essentially are the same things. Secondly, how strategic capability is built is addressed as the current research examined whether Business Excellence builds strategic capability. Thirdly, the emerging area of dynamic capabilities has been reviewed as this area introduces the external environment, which was a theme noted from the benefits of Business Excellence section earlier in this Chapter. The resource-based view section concludes by reviewing the implications of the RBV literature for the current research.

2.3.1 The RBV as a theory for Business Excellence

Tena, Llusar et al. (2001) considered that the resource-based view of the firm provided a useful theoretical base to explain the effects of Business Excellence on performance. The basic argument was that Business Excellence can contribute to the improvement of performance by encouraging the development of assets that are *'specific, produce socially complex relationships, are steeped in the history and culture of the company and generate tacit knowledge'* (Tena, Llusar et al. (2001: p934)). These correspond to the conditions, which, according to the resource-based view, allow a sustained competitive advantage (Barney (1991a)). Das, Handfield et al. (2000) held a similar view noting that Business Excellence research reflects the RBV.

This same argument has been set out in previous work. According to Barney (1991a: p93) Business Excellence *'can further the development of a series of routines and of a form of behaviour in the organization, which result from a process of learning and experience within the company itself'*. Powell (1995) considered that other companies could not precisely replicate Business Excellence as it allows for the creation of certain isolating mechanisms that inhibit their reproduction. Savolainen (2000a) also held that a commitment to Business Excellence can trigger an inimitable competitive advantage due to its ability to encourage routines and guidelines within the company, which make it difficult for potential imitators to gather resources for the successful reproduction of the same strategy. Therefore, in line with the resource-based view, TQM becomes an important competitive factor. In the same vein, following the arguments of Rose and Ito (1996), the creation of knowledge through Business Excellence-linked activities helps in the deployment of distinctive competencies at the heart of the organization.

2.3.2 Background to the resource-based view of the firm

The resource-based view of the firm traces its roots to the Edith Penrose classic 'The theory of the growth of the firm' (Penrose (1959)). In the most recent version of this work Penrose (1995) noted that many of the arguments within the original work have strengthened over time. Penrose (1995: pxvii) noted '*Another approach has been recently centering on the 'culture' of a firm to bind together the self-interest of the members of the firm's community, from workers to top management*', providing evidence of the close link between this theory and Business Excellence. Rugman and Verbeke (2002: p769) have argued that her influence in the resource-based field '*has only partially been as she intended*', but this observation does not distract from the arguments with the current work. More recently Ramos-Rodriguez and Ruiz-Navarro (2004: p1001) noted that '*Recently, the most important contribution to the (strategy) discipline proves to be the resource-based view of the firm*'. The opinion was supported by a bibliometric study of the Strategic Management Journal articles over the period 1980 to 2000 where it was found that both Barney's 1991 paper and Welfert's 1994 paper had the biggest change of influence in strategy research over the last seven year period of the study (Ramos-Rodriguez and Ruiz-Navarro (2004)).

There are many excellent works dedicated to the resource-based view of the firm (e.g., Swords and Turner (1997); Kay (1998); Barney (2002)). Thomas, Pollock et al. (1999: p71) described the resource-based view as '*A conceptual framework for understanding firm-level growth using resources as the basic building blocks. These resources may be financial, intangible, physical, organizational or technological. The rate and direction of a firm's growth is influenced by how management conceptualizes the firm's resource base*'. This process is at the centre of a Business Excellence approach (Tena, Llusar et al. (2001)). The work by Thomas, Pollock et al. (1999) sought to review the current global strategic analysis frameworks and approaches. They drew a distinction between a resource-based view and core competence view and summarized the concepts of these approaches (See Table 2-10). Their observations were informative but the division between the two was not so clear when one widens the literature review beyond these basic concepts. An important conclusion is that determining the resources that leads to the competitive advantage is no easy task (Wernerfelt (1984); Grant (1991); Thomas, Pollock et al. (1999); Priem and Butler (2001); Walsh and Linton (2001)).

Table 2-10: Strengths and weaknesses of the theoretical perspectives of the RBV

Theory	Resource-based View	Core Competence
Concept	Firms possess inimitable resources that can be the source of sustained competitive advantage.	Firms possess certain skills or competences that are difficult to imitate and can be a source of sustained competitive advantage.
Strengths	Focus on the firm level and manager identifies sources of competitive advantage relative to competitors.	Focus on the firm level and manager identifies sources of competitive advantage relative to competitors.
Weaknesses	Does not provide guidelines for determining what these resources are, and whether or not they are truly unique.	Does not provide guidelines for determining what these competences are, and whether or not they are truly unique. It is also a top down approach.

Adapted from: Thomas, Pollock et al. (1999)

Klavans (1994) noted that the intellectual roots of core competence research might be found in the disciplines of economics, administrative science and strategy. Barney (2001b) supported this noting that the resource-based view may be argued from the perspectives of neoclassical economics, evolutionary economics or a strategic 'Structure – Conduct – Performance' Model. This literature review will concentrate on the resource-based view from the strategy perspective.

In reviewing the literature 4 main theses were established. These themes, together with the primary contributors, are listed in Table 2-11. Each of these areas will be covered in more detail in the following sections with the first being covered in this section.

Wernerfelt (1984) sought to build on the earlier work of Penrose (1959) by advancing the economic theory of the diversification and acquisition of firms based on their resources. It was argued that resources and products were the two sides of a coin and this led to the development of the resource-product matrix. Wernerfelt (1984), who was addressing RBV from an economic perspective, used Porter's Five Forces to determine the economic value of resources and his work led to the development of a mathematical model for

Table 2-11: Main themes identified from the resource-based view literature

Theme	Description	Main Contributors
Resource-based view of the firm	The presence of Valuable, Rare, Inimitatable and Non-substitutable resources leads to a competitive advantage. Resource heterogeneity is central to the argument.	Penrose (1959); Wernerfelt (1984); Castanias and Helfat (1991); Fiol (1991); Barney (1991a); Barney (1991b); Stalk, Evans et al. (1992); Peteraf (1993); Barney, Wright et al. (2001); Fiol (2001); Priem and Butler (2001); Sveiby (2001); Barney (2001a); Barney (2001b); Soderling, Lindhult et al. (2003)
Distinctive competences, skills, core competences and capabilities	The things that firms do better than their competitors, which leads to a competitive advantage.	Selznick (1957); Andrews (1971); Lenz (1980); Snow and Hrebiniak (1980b); Itami (1987); Aaker (1989); Grant (1991); Hall (1991); Hall (1992); Leonard-Barton (1992); Stalk, Evans et al. (1992); Amit and Schoemaker (1993); Hamel (1994); Winterscheid (1994); Hamel and Prahalad (1996); Durand (1998); Dess and Picken (1999); Hatton and Rosenthal (1999); Winter (2000); Sussland (2001); Tena, Llusar et al. (2001); Walsh and Linton (2001); Wright, Dunford et al. (2001); Low and Kalufat (2002); Kristensen and Westlund (2003)

Theme	Description	Main Contributors
Building strategic capability	How the resources and capabilities are built over time so that competitive advantage is achieved. This includes the value of intangible resources such as knowledge, technology, brands and the skills of people that lead to competitive advantage.	Itami (1987); Dierickx and Cool (1989); Grant (1991); Hall (1991); Klein, Edge et al. (1991); Hall (1992); Amit and Schoemaker (1993); Pettus (2001); Tena, Llusar et al. (2001); Barney (2002)
Dynamic capabilities	Dynamic capability is a relatively concept introduced to cater for the building of strategic assets recognizing dynamic industry conditions.	Lenz (1980); Barney (1986); Lei, Hitt et al. (1996); Petts (1997); Teece, Pisano et al. (1997); Zahra (1999); Eisenhardt and Martin (2000); Galunic and Eisenhardt (2001); Adner and Helfat (2003); Winter (2003); Zott (2003)

sequential entry into a market. This model focused on resource position barriers and entry barriers and Wernerfelt proposed the concept of 'attractive' resources that led to competitive advantage.

Wernerfelt (1984) recognized the identification of the resources was difficult and, at the time, the theory of their use was not well developed. As a consequence the difficulty in identifying growth strategies based on resources other than product-based resources was noted, these being many of the resources that fall within the scope of a Business Excellence approach, such as technology, skilled personnel, stakeholder management, efficient procedures and capital (Wernerfelt (1984: p172)).

Barney, who has been a major contributor in the area, sought to use a strategy perspective to compare the RBV with an external environmental model Barney (1991a). He has since argued that he could have used an economic perspective for his analysis, but chose a Structure – Conduct – Performance approach as this was considered to more appropriate at the time (Barney (2001b)). In Barney's 1991 landmark paper, Barney noted two main assumptions with environmental models. These were they assume that:

- Firms within an industry or strategic group are identical in terms of the strategically relevant resources they control and the strategies they pursue
- Should resource heterogeneity develop this will be short-lived because the resources used to implement the strategies are highly mobile

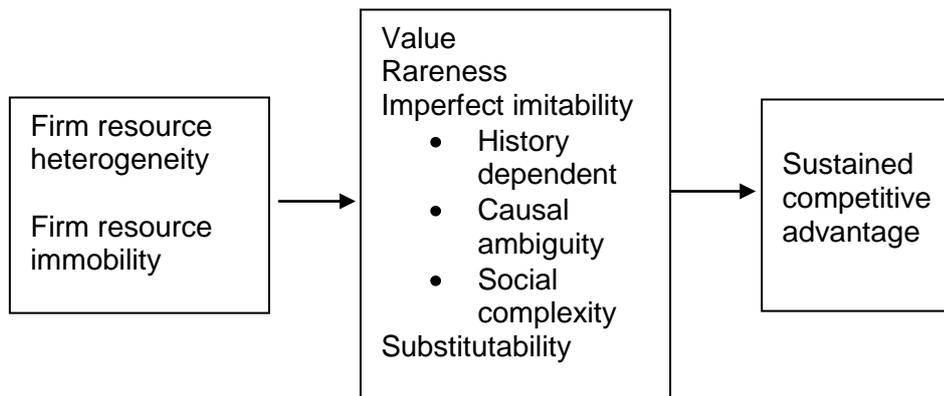
Barney proposed two alternative assumptions for the RBV. These were:

- There may be resource heterogeneity
- The resources may not be perfectly mobile

These assumptions and subsequent arguments led to the conclusion that firm resources included all assets, capabilities, processes, attributes, etc controlled by the firm that are used to used to improve its effectiveness and efficiency. Further, competitive advantage is achieved when a firm is implementing a value strategy not being simultaneously implemented by a current or potential competitor, and that sustained competitive advantage is achieved when other firms cannot duplicate the benefits of the strategy. No timeframe was put on the length of the sustainability.

Barney developed a framework that indicates that to hold the potential of being a sustained competitive advantage a firm resource must have four attributes:

- It must be valuable in that it exploits opportunities and/ or neutralizes threats in a firm's environment. These are empirical indicators of how heterogeneous and immobile a firm's resources are and thus how useful they are in generating sustained competitive advantage
- It must be rare among a firm's current and potential competition
- It must be imperfectly imitable. Resources are imperfectly imitable for one or a combination of three reasons (borrowed from Dierickx and Cool (1989)):
 - Unique historical conditions
 - Casual ambiguity
 - Socially complex
- There cannot be strategically equivalent substitutes for this resource that are valuable but neither rare or imperfectly imitable



Adapted from: Barney (1991a)

Figure 2-4: The relationship between resource heterogeneity and immobility, rareness, imperfect imitability and substitutability, and sustained competitive advantage

The framework, shown diagrammatically in Figure 2-4, has supplied the footing for many resource-based view studies, with subsequent work based on either this framework or an extension. Table 2-12 provides a number of resource-based view definitions that refer to Barney's conceptual work.

Table 2-12: Sample definitions of and relationships among underlying RBV constructs

Resource-based View Article	Definitions and Underlying Relationships
Powell (1992b: p552)	"The resource view holds that, in order to generate sustainable competitive advantage, a resource must provide economic value and must be presently scarce, difficult to imitate, non-substitutable, and not readily obtainable in factor markets (Dierickx and Cool (1989); Barney (1991a); Peteraf (1993))."
Bates and Flynn (1995: 235)	"This theory rests on two key points. First, that resources are the determinants of firm performance (Barney (1991a), Shulze (1992)), and second that resources must be rare, valuable, difficult to imitate and non-substitutable by other rare resources. When the latter occurs, a competitive advantage has been created (Barney (1991a))."
Litz (1996: p1356)	"Barney's (1991) conceptual work on resource characteristics was especially helpful. He proposed that resources be characterized as simultaneously valuable, rare, non-substitutable, and inimitable. To the extent that an organization's physical assets, infrastructure, and workforce satisfy these criteria, they qualify as resources."
Michalisin, Smith et al. (1997: p360)	"Such resources, coined strategic assets, are simultaneously valuable, rare, imperfectly imitable and non-substitutable (Barney (1991a)). RBV proponents assert that ownership or control of strategic assets determine [sic] which firms can earn superior profits and which firms do not. Unfortunately, there is little empirical research to support that prescription (Miller and Shamsie (1996))."
Bowen and Wiersema (1999: p628-629)	"... as the strategy literature argues, a firm's performance depends fundamentally on its ability to have a distinctive, sustainable competitive advantage which derives from the possession and utilization of unique, non-imitable, non-transferable, firm-specific resources (Wernerfelt (1984); Barney (1991a); Peteraf (1993))."

Resource-based View Article	Definitions and Underlying Relationships
Brush and Artz (1999: p223)	"... some gaps in the available theories raise new challenges. Barney's four criteria for resources to confer a competitive advantage - value, rarity, imitability, and substitutability - are limited in their practical usefulness for this problem because they are context insensitive (i.e., non contingent)."
Combs and Ketchen (1999: p869)	"To be a source of sustained above-average performance, resources must meet three criteria. They must be: (1) valuable, meaning buyers are willing to purchase the resources' outputs at prices significantly above their costs; (2) rare, so that buyers cannot turn to competitors with the same or substitute resources; and (3) imperfectly imitable, meaning it is difficult for competitors to either imitate or purchase the resources (Barney (1991a); Peteraf (1993))."
Rindova and Fombrum (1999: 694)	"Resource-based theory (Penrose (1959); Barney (1991a)) attributes advantage in an industry to a firm's control over bundles of unique material, human, organizational and locational resources and skills that enable unique value-creating strategies (Barney (1991a)). Heterogeneous resources create distinct strategic options for a firm that, over time, enable its managers to exploit different levels of economic rent (Barney (1991a); Peteraf (1993)). A firm's resources are said to be a source of competitive advantage to the degree that they are scarce, specialized, appropriable (Amit and Schoemaker (1993)), valuable, rare, difficult to imitate or substitute (Barney (1991a))."

Adapted from: Priem and Butler (2001)

Priem and Butler (2001) challenged the value of the resource-based view in strategic management perspective and raised a number of concerns. Focusing on single-businesses, they argued that there is a need for more conceptual work before the resource-based view can meet the requirements of a theoretical structure, that the resource-based view makes implicit assumptions about product markets in the same way that environment-based models make implicit assumptions about resources, and the fundamental 'value' variable is exogenous to the resource-based view. They also considered some issues from the perspective of strategy research. Firstly, they conclude that the number of definitions of resources makes it difficult to establish contextual and prescriptive boundaries. This point is reinforced by the number of terms found in the literature. Secondly, they noted that static, cross-sectional approaches to resource-based view strategy development may result in causal 'Hows' and 'Whys' remaining in a 'Black-box'. They called for research into the 'Hows' questions in terms of how the resource may be obtained and how and in what context the resource contributes to competitive advantage. It is interesting that Edith Penrose was one of the first people to understand the contents of the 'black-box' and the value of intangible assets (Pitelis and Whal (1998)). Finally, they stated that for the resource-based view to fulfil its potential '*its ideas must be integrated with an environmental demand model*' (Priem and Butler (2001: p35)), a point supported by Barney himself as he noted that '*It seems likely that the resource-based theory developed relative to SCP logic could be fully subsumed by resource-based theory developed relative to neo-economics*' Barney (2001b: 648). Fiol (2001) also questioned the basis of the RBV in the context that the theory of the sustained competitive advantage has become outdated. It has been argued that the concept of a sustained competitive advantage is outdated (Powell (2001)).

Priem and Butler (2001) raised four areas of concern regarding the resource-based view and in particular the work of Barney (1991a). These were that:

1. The resource-based view is tautological
2. It fails to acknowledge that many different resource configurations could generate the same value for firms and, thus, would not be the sources of competitive advantage
3. The role of product markets is underdeveloped in the argument
4. The theory developed in the article has limited prescriptive implications

In responding to the tautological criticism, Barney (2001a: p42) stated "*The ability to restate a theory in ways that make it tautological provides no insights about its empirical testability of the theory whatsoever*". Barney (2001a) concluded that the real issue is whether aspects of the resource-based theory can be parameterized in ways that can

generate testable hypotheses. He continued by exploring the ways that this could be done for the components of the resource-based theory. A summary of his conclusions has been given in Table 2-13.

Table 2-13: Parameterizing Barney's resource-based theory components

Resource-based Theory Component	Comments
Value	<p>Work to define resource value falls into two large categories:</p> <ul style="list-style-type: none"> • Structure – Conduct – Performance (S-C-P) based theories to specify the conditions under which different firm resources will be valuable • Efforts to determine the value of the firm resources that apply to other theories derived from industrial organization modules (I/O) of perfect and non-perfect competition.
Rarity	<p>Barney (2001a: p43-44) noted that '<i>A complete parameterization of rare would enable a researcher to specify the maximum number of competing firms that can possess a particular resource and still have perfect competition based that resource</i>'. Barney acknowledged that there is not a rigorous theory that allows such a number to be determined and calls for more research in this area.</p>
Imitability	<p>Barney (2001a: p45) argued that a firm that possesses a particular valuable resource (where the value of that resource is determined in ways that are erogenous to the theory developed in the 1991 article) that is rare (possessed by fewer firms than required to generate perfect competition dynamics) and obtained in unique historical circumstances can gain a sustained competitive advantage (i.e., can improve its efficiency and effectiveness in ways that competing firms cannot and in ways that competing firms cannot imitate over time).</p>

Adapted from: Based on Barney (2001a)

The second point raised by Priem and Butler (2001) related to the equifinality in the resource-based view, which means that other firms may achieve above average profits from a set of quite different resources (Bowman and Ambrosini (2001)). Barney's response to this point was to remind the reader of the concept of substitutability, which is

defined with respect to strategic equivalence. As stated in the 1991 paper, '*Two valuable firm resources ...are strategically equivalent when they can each be exploited separately to implement the same strategies*' (Barney (1991a: p111)). The general conclusion is that even if a resource is valuable, rare, and costly to imitate, if it has strategically equivalent substitutes that are themselves not rare or costly to imitate, then it cannot be a source of sustained competitive advantage.

Barney (2001a) also noted that Priem and Butler (2001) defined competitive advantage as 'systematically creating above average returns', which, by including a reference to the industry, is in contradiction to Barney's definition as Barney defined competitive advantage at the firm level. Barney (2001a: p48) gave two ways that this may be achieved at the firm level. Firstly, it may be defined with respect to the actions of other firms – either current or potential competitors. In this approach a firm is said to have competitive advantage when it is engaging in activities that increase its efficiency or effectiveness in ways that competing firms are not, regardless of whether those other firms are in a particular firm's industry (Barney (1991a)). Henderson and Mitchell (1997) have since noted that there is a lack of understanding of the interactions between an organization and its competitive influences.

The second way an organization may create a competitive advantage, economic rent, is to define competitive advantage in respect to return expectations of that firm's owners. Stockholders, as residual claimants, develop expectations about returns a firm will generate, so it is argued that firms that generate higher returns than expected at constant levels of risk have a competitive advantage. It is interesting to note from the benefits of Business Excellence literature Easton and Jarrell (1998) witnessed 'excess unexpected performance' from organizations that had adopted Business Excellence.

The fourth concern raised by Priem and Butler (2001) relates to its limited prescriptive ability and this argument has important consequences for the current thesis. The argument and counter-arguments are summarized in Table 2-14. It is clear that the identification of the resources that led to the advantage is a challenge. The need for a dynamic research approach is a concern due to the limitations placed on the current research thesis. These concerns will be addressed in Chapter 3 when we turn to the research design.

Table 2-14: Inapplicability arguments and counter-arguments

Area of Concern	Argument Priem and Butler (2001)	Counter-argument Barney (1991a)
Managerial manipulation of resources	Many of the attributes of resources that make them likely to be sources of competitive sustained competitive advantage, especially path dependence and social complexity, are not amenable to managerial manipulation	<p>Although Priem and Butler may be correct, resource-based logic has several important practical implications for managers. These include:</p> <ul style="list-style-type: none"> • Identifying resource deficiencies to gain strategic parity • Extension and protection of existing resources that can lead to competitive advantage <p>It is noted that there are some prescriptive limits. Firstly, the identification of the resources may not be possible. Secondly, it cannot be used to create sustained competitive advantage when the potential for such advantage does not exist.</p>
All-inclusive definition of resources	'Resources' cover so many things that the use of the theory is limited	The theory did not claim that a list of resources can be generated to gain sustained strategic advantage and such resources would be context specific as value is set within a market context. The theory does, however, provide the attributes that any valuable resource must possess.
Static resource-based logic	Much of the work subsequent to 1991 has been static rather than dynamic	Barney agreed that this is a concern and noted that dynamic research where the conditions under which the resources are developed or acquired in one period have implications for the strategic advantages of a firm in subsequent periods is particularly important.

Although a strategic perspective is the main focus of this thesis, the work of Peteraf (1993) is worthy of inclusion. Her paper, 'The cornerstones of competitive advantage', provided an insight into an economic viewpoint of the RBV. Four conditions are listed, all of which must be met, in order to achieve competitive advantage. The first of these is *resource heterogeneity*, from which comes Ricardian or monopoly rents. *Ex post limits to competition* are necessary to sustain the rents. *Imperfect resource mobility* ensures that the rents are bound to the firm and shared by it. *Ex ante limits to competition* prevent costs from offsetting the rents. There is a whole body of knowledge addressing the RBV from an economics perspective but this was outside the scope of the current study.

Although this section has focused on the RBV, several other competing or complimentary theories (depending on one's viewpoint) have emerged over the years. Sveiby (2001) developed 'A knowledge-based theory of the firm', which is stated to start with the competence of people (Sveiby (2001)). People in organizations can use their competences to create value mainly in two directions: externally and internally. It was noted that tangible goods tend to depreciate when transferred, but knowledge grows when it is used and depreciates when not used, so a principle of the knowledge-based view is to use knowledge transfers to create value. It was also noted that such transfers lead to both tangible and intangible assets (Sveiby (2001)) and that, in line with Allee (2000), value networks are an appropriate vehicle for studying the knowledge transfers. Sveiby (2001) developed nine knowledge transfer opportunities. One limitation of the theory is that it has only been applied to one situation involving two organizations (Sveiby (2001)) and to date there is no evidence of any empirical testing. There is some support for the perspective from Itami (1987) who listed three types of information flow involving both the internal and external environments.

The practice-based view was described by Soderling, Lindhult et al. (2003). This theory is based on the assumption that there are practices that, in combination and when effectively linked together, can be expected to consistently improve operational performance and thus provide firms who adopt them with an advantage over those that do not. Thus, good business practices, and the learning and knowledge creation developed through using them, can be thought of as the base or foundation on which distinctive capabilities and hence competitive advantage is built. Soderling, Lindhult et al. (2003) have noted that Eisenhardt and Martin (2000) connected dynamic capabilities with business processes and highlight the contribution of best practice transfer. The practice-based view has particular relevance for the current research as processes are at the heart of Business Excellence. Table 2-15 compares the practice-based view to the resource-based view of the firm.

Table 2-15: Comparison of the RBV and PBV from a strategic perspective

	Resource-based View	Practice-based View
Conceptualization of the firm	Bundle of resources	Network of business practices
Measure of competitive advantage	Firm specific resources	Operational efficiency in performance of practices
Process of competitive advantage	VRIN (valuable, rare, inimitable, non-substitutable resources/ resource combinations)	Closeness to best practice in different process areas, coordination of practices
Process of strategy development	Path dependence	Equifinality of paths
Development of competitive advantage	Dynamic capabilities as ability to use and develop resources	Learning approaches and practices to improve existing business practices

Adapted from: Soderling, Lindhult et al. (2003)

Similar to the practice-based view is the process-based view of the firm (Hatton and Rosenthal (1999)). One of the key features of their model is the 'three Cs': Customer relations, Capabilities and Competences. Capabilities are measures of the performance of business processes along dimensions defined by customers' needs and expectations (time, cost, quality, functionality, flexibility and acuity). The market test of a capability is whether it satisfies the firm's target customers. The competitive test is whether those customers judge the firm advantaged, compared to its rivals on that dimension, and positioned to be their preferred supplier.

Competencies are measures of the organization's potential to conduct business at the state-of-the-art in both the firm's input markets (labour, capital, information and technology) and its output markets with its customers. Competencies are cognitive characteristics of an organization, its 'know-how', and are typically tied to business functions. The organization gains competitive power when its competences are marshaled through cross-functional process design and levered with materials, labour and capital in action (Hatton and Rosenthal (1999)).

Other theories include the Managerial Rents model (Castanias and Helfat (1991); Castanias and Helfat (2001)), the Identity-based View (Fiol (1991); Fiol (2001)), and Competency-based Competition (Stalk, Evans et al. (1992); Sirkin and Stalk (1995)) to name just three. In reading this literature it is clear that these are all variations of the common theme of creating a sustainable advantage. The next section reviews the research that has been conducted with a view to isolating the sources of competitive advantage.

2.3.3 Distinctive competencies, skills, core competencies and capabilities

One of the problems faced by a researcher in this field is the number of different terms that are used to describe similar things (Priem and Butler (2001); Anderson (2004)). In this section the literature has been reviewed with the objective of defining a typology to support the research whilst at the same time, examining the empirical work that has been conducted in this field.

Selznick (1957) has been given credit for the first use of the term 'Distinctive Competences', which Andrews (1971) described as a set of things that an organization does particularly well relative to its competitors.

Snow and Hrebiniak (1980b) examined the relationship between strategy, distinctive competence and organizational performance. Four industries were selected for the study reflecting different levels of uncertainty. The central hypothesis was that the different strategies for Defender, Prospector, Analyzer and Reactor would lead to different distinctive competencies. Defenders will look towards manufacturing to reduce costs, with prospectors focusing on product and market development to capitalise on new products. Analyzers were expected to display a mix of the two and Reactors were expected to have limited distinctive competencies and, as a consequence, be doomed to failure. Success was measured in terms of profit (the ratio of total income to total assets). Table 2-16 summarizes some of the results from the survey of top managers of 236 organizations and gives an indication of the types of distinctive competencies that were found. Snow and Hrebiniak (1980b) noted that the managerial perceptions of competence varied both within and across organizations in the same industry. One other important conclusion was that Reactors, with limited distinctive competences, could be successful in highly regulated industries.

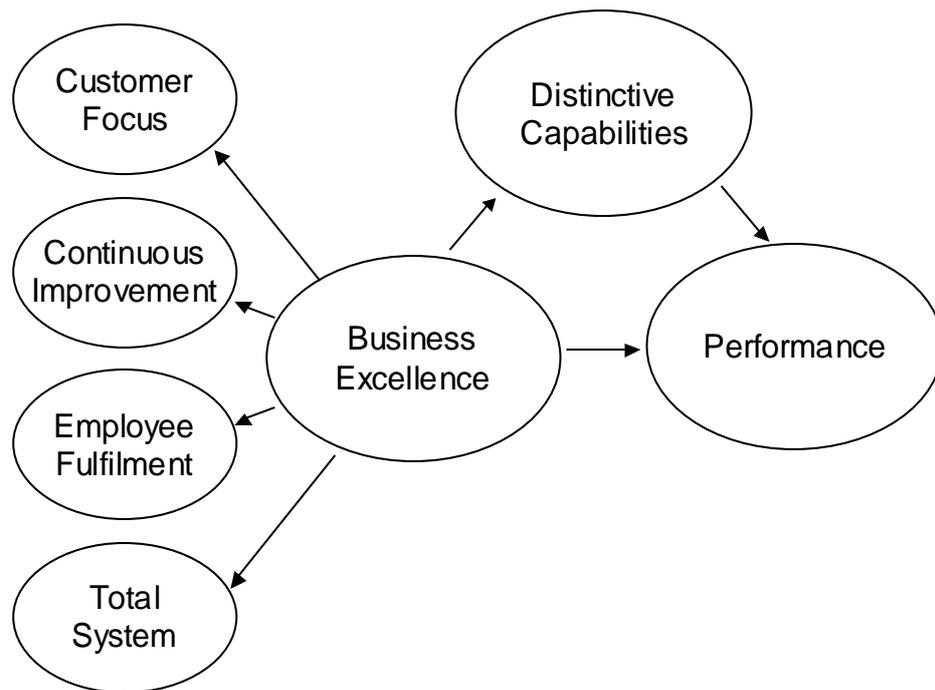
Table 2-16: Top managers' rankings of distinctive competences, by strategy & industry

Strategy	Plastics	Semi-conductors	Automotive	Air Transportation
Defender	General management Financial management Production Marketing/ Selling	Applied engineering General management Production Financial management	Financial management General management Production Applied engineering	Financial management Marketing/ Selling General management Production
Prospector	Product research and development Marketing/ Selling General management Distribution	Financial management Product research and development General management Basic engineering	Production Marketing/ Selling and Basic engineering Tie)	Financial management Marketing/ Selling General management Basic engineering
Analyzer	Distribution Production Personnel Financial management	Production General management Financial management Applied engineering	Financial management General management Applied engineering Legal affairs	Financial management General management and Legal affairs (Tie) Production Marketing/ Selling
Reactor	Personnel Financial management Production Applied engineering	Financial management Production Marketing/ Selling Legal affairs	Marketing/ Selling Production Distribution Applied engineering and Financial management (Tie)	Financial management General management Marketing/ Selling Applied engineering and Production (Tie)

Adapted from: Snow and Hrebiniak (1980b)

Tena, Llusar et al. (2001) defined four dimensions to Total Quality Management that underpinned their model:

1. Customer focus
2. Continuous improvement
3. Employee fulfilment
4. The organization as a total system.



Adapted from: Tena, Llusar et al. (2001)

Figure 2-5: Model for the relationship between Business Excellence and performance

They also noted that the creation of knowledge through TQM-linked activities helps the deployment of distinctive competences at the heart of the organization and listed several of these (Table 2-17). Tena, Llusar et al. (2001) developed a research model where the wealth of the firm's distinctive competencies acts as a mediating variable in the relationship between TQM and the generation of improved performance. The work concluded that TQM had a positive relationship with performance and on distinctive competencies. The distinctive competencies also had a positive relationship with performance.

Itami (1987) defined invisible assets as the key to competitive advantage, with a particular interest in informational resources. He stated that the concept of the firm gives

three components of strategy: Products and markets (what to sell, and to whom), Operations mission (what to do in-house) and Corporate resources (what resources are required). This observation is consistent with that of Barney (1991a), but it adds the operations dimension as Itami notes that such assets are built through day to day operations.. Itami (1987) also noted that a firm's strategy requires five types of fit and this fit must be both short-term and long-term. These five types of fit are the environmental fit with technology, competition and customers, the fit with resources and the fit with the organization (the way that organization controls its people).

Table 2-17: Distinctive competencies

Competence	Description
Managerial competencies	TQM allows for both the company's adaptation to its environment and the deployment of leadership abilities through the articulation and communication of a shared vision (Webley and Cartright (1996)).
Employee know-how	TQM contributes to the enhancement of know-how through human resources policies that encourage employee creativity (Bowen and Lawler (1992)).
External co-operation skills	TQM breaks down the organization's frontiers and favours the setting up of associate relationships with both clients and suppliers (Rao, Solis et al. (1999)).
Creation of a collective mind	TQM gives rise to the creation of a principle of cooperation as opposed to a principle of conflict between members of the organization (Watson and Korukonda (1995)).
Organizational commitment	TQM-related initiatives imply favourable attitudes towards the internalization of the goals and values of the company, along with a willingness to make an effort for the benefit of the organization and feel a part of it (Allen and Brady (1997)).
Stimulation of the organizational learning process	The TQM initiative stimulates the organization to learn how to solve problems by following structured and scientific processes (Wruck and Jensen (1998)).
Speed and flexibility in the design of new products or services	TQM favours a reduction in the variability of processes and in lead times, and also promotes the decentralization of the decision-making process, and the use of techniques such as quality function deployment (QFD), which allow for customer needs to be incorporated into design specifications (Youssef, Boyd et al. (1996)).
Reputation	TQM contributes to the improvement of the company's reputation, through the good relationships maintained with clients, suppliers and amongst the employees themselves, and through the generation of high expectations in the attainment of good performance (Lemak and Reed (1997)).

Adapted from: Tena, Llusar et al. (2001)

Aaker (1989) differentiated between an asset, which is something that a firm possesses superior to competition, and a skill, which is something a firm does better than competitors. Taking an evolutionary economics perspective, Nelson and Winter (1982: p73) defined a skill as '*a capability for a smooth sequence of coordinated behaviour that is ordinarily effective relative to its objectives given the context which it normally occurs*'. Aaker (1989) also argued that sustainable competitive advantage is created through the way the firm competes (product strategy, positioning strategy, sourcing and pricing strategy, etc), where the firm competes (market selection, competitor selection) and that the bases of competition are the firm's assets and skills.

Four questions to guide the implementation of a strategic focus on assets and skills have been posed (Aaker (1989)):

- What are the relevant skills and assets for your industry? What assets and skills either should be obtained or neutralized if you are to compete successfully?
- What is, or should be, the assets and skills that underlie your sustainable competitive advantage (SCA)? Of the set of relevant assets and skills, how do you select the optimal ones to develop, strengthen or maintain?
- How can you go about creating assets and skills that support SCAs?
- Finally, how can formidable assets and skills of competitors be neutralized?

In his work Aaker (1989) surveyed 248 managers of strategic business units from the Northern California area to ask them what the sustainable competitive advantage of their business was. A mix of organizations was chosen representing different industries and the top 10 responses are given in Table 2-18.

Table 2-18: Sustainable competitive advantage of 248 organizations

Reported Sustainable Competitive Advantages	High-Tech	Service	Other	Total
Reputation for quality	26	50	29	105
Customer service/ Product support	23	40	15	78
Name recognition/ High profile	8	42	21	71
Retain good management and engineering staff	17	43	5	65
Low cost production	17	15	21	53
Financial resources	11	26	14	51
Customer orientation/ Feedback/ Market research	13	26	9	48
Product line breadth	11	7	9	46
Technical superiority	30	7	9	46
Installed base of satisfied customers	19	22	4	45

Adapted from: Aaker (1989)

A number of conclusions may be drawn from Table 2-18. Firstly, of the top 10 SCAs, 5 may be classified as assets and 5 as skills (customer service, staff retention, low cost manufacturing, customer orientation and technical superiority), with 3 of the assets being tangible (financial resources, product line breadth and customer base) and 2 intangible (reputation for quality and profile). Secondly, all these sustainable competitive advantages are consistent with a Business Excellence approach. Thirdly, it is not possible to align the assets and skills with particular types of industry given the data presented.

Unlike Aaker (1989) who referred to assets and skills, Prahalad and Hamel (1990) talked of 'Core Competences'. These are deemed to be more than a bundle of skills and technologies, with the skills being organizationally integrated in some way and not the property of individuals or small teams. Core competences are also considered to be more than an asset as used in an accounting sense. They are defined as the product of a learning process incorporating both tacit and explicit knowledge, the value of which tends to appreciate rather than depreciate over time, and they are said to deliver high

customer benefit (value). Winterscheid (1994) noted 'clusters' of tangible and intangible assets spanning individuals and groups, thereby enabling the performance of distinctive activities. Core competences also suffer from what Priem and Butler (2001: p33) described as the 'In search of excellence' problem, where *'it is quite easy to identify, a posteriori, many "valuable" resources in high-performing firms'*. Authors have also warned against the dangers of core competences become core rigidities (Leonard-Barton (1992); Johnson and Scholes (2002)).

In line with Barney (1991a), core competences are in some sense unique and sustainable if they are to convey competitive advantage (Prahalad and Hamel (1990)). In doing so they provide a gateway to new markets. In later work Hamel (1994) stated that core competences were divided into three types:

1. Market-access competences which bring the firm into contact with its customers
2. Integrity-related competences which enable the firm to do things better and faster and to a higher quality than their competitors
3. Functionally-led competences that confer distinctive customer benefits

Walsh and Linton (2001) supported the core competence view and have developed 'The Competency Pyramid' as a mechanism for determining core competences. Based on the thoughts of Tsu (1988), the competencies are sub-divided into two categories: Physical product production and Service product production. Physical production competencies are sub-divided into materials competencies, and fabrication and assembly competencies. The Service production competencies are sub-divided into knowledge-based competencies and knowledge-embedded competencies. One is reminded of the 'Hard' Vs 'Soft' classification of Business Excellence critical success factors discussed earlier (Rahman (2004)).

Stalk, Evans et al. (1992) referred to 'capability-based competition' where capabilities are more broadly based than core competences. Many other authors have used the term 'capability' (e.g., Amit and Schoemaker (1993); Walsh and Linton (2001)) and although many authors (such as Nelson and Winter (1982); Barney (1991a); Walsh and Linton (2001)) inferred that processes are the driving force behind capabilities Stalk, Evans et al. (1992: p62) mentioned the connection explicitly by stating that *'A capability is a set of business processes strategically understood'*. The work is limited, however, by the fact that the capabilities-based competition theory is based on the observation of just two organizations, Wal-Mart and Kmart. In reviewing the success of Wal-Mart and other organizations, Dess and Picken (1999) supported Stalk, Evans et al. (1992) in their view

that processes are at the centre of the success and talk in terms of the need to perform a 'Strategic Inventory' based around Porter's value chain.

The capabilities-based competition theory does have four principles (Stalk, Evans et al. (1992)):

1. The building blocks of corporate strategy are not products and markets but business processes
2. Competitive success depends on transforming a company's key processes into strategic capabilities that consistently provide superior value to the customer
3. Companies create these capabilities by making strategic investments in a support infrastructure that links together and transcends traditional strategic business units and functions
4. Because capabilities necessarily cross functions, the champion of a capabilities-based strategy is the CEO

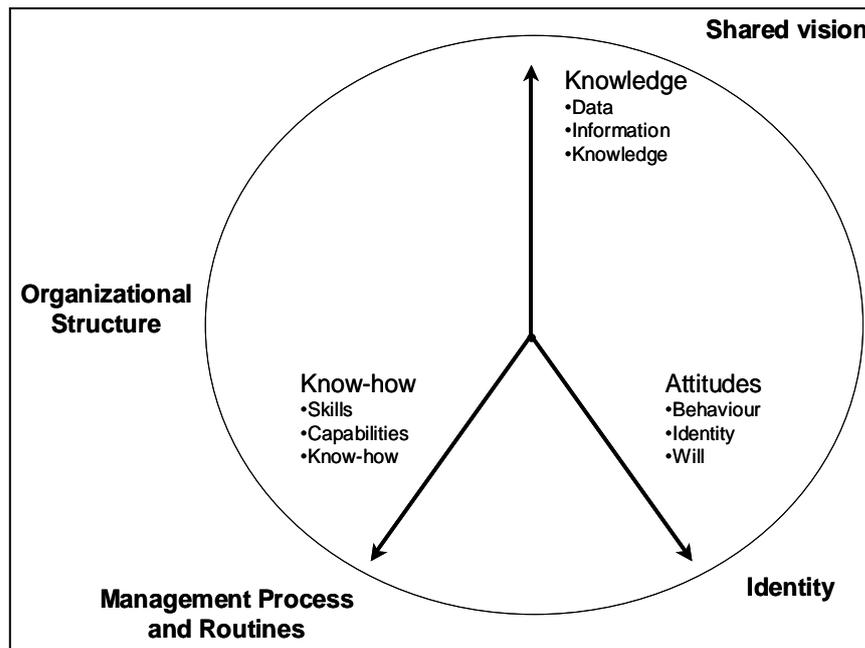
On a more academic basis, Winter (2000) introduced the 'Satisficing Principle' on capability learning. In his paper Winter (2000: p983) defined an organizational capability as *'a high-level routine (or collection of routines) that, together with its implementing input flows, confers upon an organization's management a set of decision options for producing significant outputs of a particular type'* and satisfying as a theory of choice focused on the process by which alternatives are examined and assessed. Overt learning is a key principle of the theory and Winter (2000) suggested that it may be triggered by either a crisis or the need for a continuous improvement programme.

Building on the process theme, Grant (1991) talks of resources, which are inputs to the production process and capabilities, which operate on the resources to perform some task. Whilst resources are the source of a firm's capabilities, capabilities are the main source of its competitive advantage. Grant (1991) noted that the case for making resources and capabilities of the firm the foundation for its long-term strategy rests upon two premises. First, internal resources and capabilities provide the basic direction for a firm's strategy. Second, resources and capabilities are the primary source of profit for the firm. He continued by stating that a firm's business strategy should be viewed less as a quest for monopoly rents (the returns to market power) and more a quest for Recardian rents (the returns to the resources which confer competitive advantage over and above the real costs of resources).

Amit and Schoemaker (1993: p35) also made a distinction between resources, which are defined as *'stocks of available factors that are owned or controlled by the firm converted into final products or services by using a wide range of other firm assets'*, and capabilities, which relate to a firm's capacity to deploy the resources. Capabilities are *'information-based, tangible or intangible processes that are firm specific and are developed over time through complex interactions among the firms' resources'*. This view was supported by Makadok (2001), who defined a resource as an observable (but not necessarily tangible) asset that can be valued and traded-such as a brand, a patent, a parcel of land, or a license. A capability, on the other hand, is not observable (and hence necessarily intangible), cannot be valued, and changes hands only as part of its entire unit.

Grant (1991) identified six major categories of resources: Financial, physical, human, technological, reputation and organizational resources. He noted that there is a major problem in valuing intangible resources, as they have no market price. Grant's approach was to take the difference between stock market value of the firm and the replacement value of the tangible assets (Book value), although he has since expressed the view that option evaluation may be a better approach (Grant (2004b)).

Grant (1991) used the methodology described by Snow and Hrebiniak (1980b) to classify the firm's activities and makes a connection to the 'organizational routines' described by Nelson and Winter (1982). With the relationship between resources and capabilities, a key ingredient between the resources and capabilities is the ability to get cooperation and coordination within teams. This requires that an organization motivates and socializes its members in a manner conducive to the development of smooth running routines. The organization's style, values, traditions and leadership are critical encouragements to the cooperation and commitment of its members. These can be viewed as intangible resources that are common ingredients of the whole range of a corporation's organizational routines. This is an important point as it is conducive with a Business Excellence approach and reinforces the importance of leadership, which is a key theme of this thesis. It is also noted that capabilities deriving from a single source are not so sustainable. The relationship between the RBV and Business Excellence is further supported by the views of Durand (1998), who defined the three dimensions of competence given in Figure 2-6.



Adapted from: Durand (1998)

Figure 2-6: Three dimensions of competence

Wright, Dunford et al. (2001) drew a comparison between the RBV and Strategic Human Resource Management, noting that RBV had put people on the radar screen. They noted that a number of RBV concepts proposed as sources of competitive advantage turn the researchers' attention between the intersection of strategy and human resource issues. These concepts included Culture/ corporate identity, Knowledge, Learning organizations and Leadership.

Table 2-19: Typology of competences

Term	Description	References
Distinctive capabilities	A set of things that an organization does particularly well relative to its competitors.	Selznick (1957); Andrews (1971); Snow and Hrebiniak (1980b); Tena, Llusar et al. (2001)
Strategic capability	The capability of an enterprise to successfully undertake action that is intended to affect its long-term growth and development	Lenz (1980)
Invisible assets	Informational resources as essential for effective operation as the more visible corporate resources.	Itami (1987)
Strategic capabilities	Complex bundle of skills and accumulated knowledge that enable firms to coordinate activities and make use of their assets	Day (1990) as cited by Desarbo, Di Benedetto et al. (2005)
Intangible resources	May be classified as assets and competences. Assets are things that a company owns and has a sense of 'belongingness'. Competences are things that companies 'do'.	Hall (1994)
Assets and skills	Assets are something that a firm processes superior to competition A skill is something a firm does better than competitors.	Aaker (1989); Castanias and Helfat (1991); Castanias and Helfat (2001)
Core competences	The product of a learning process incorporating both tacit and explicit knowledge, the value of which tends to appreciate rather than depreciate over time, and they are said to deliver high customer benefit (value).	Leonard-Barton (1992); Winterscheid (1994); Hamel and Prahalad (1996); Javidan (1998); Walsh and Linton (2001)
Strategic competences	Capabilities used to deliver services in service industries that result in superior rents.	Douglas and Ryman (2003)
Capabilities	A capability is a set of business processes strategically understood.	Stalk, Evans et al. (1992); Dess and Picken (1999); Hatton and Rosenthal (1999)

Term	Description	References
Organizational capability	A high-level routine (or collection of routines) that, together with its implementing input flows, confers upon an organization's management a set of decision options for producing significant outputs of a particular type.	Winter (2000)
Resources and capabilities	Resources are inputs to the production process. Capabilities operate on the resources to perform some tasks, which leads to a competitive advantage.	Grant (1991); Amit and Schoemaker (1993); Makadok (2001)

This sub-section has sought to review the literature on the definition of the resources and capabilities that relate to the activities of a firm that lead to competitive advantage. A summary is provided in Table 2-19. Anderson (2004) provides a useful summary putting the various terms into context. This is shown in Figure 2-7.

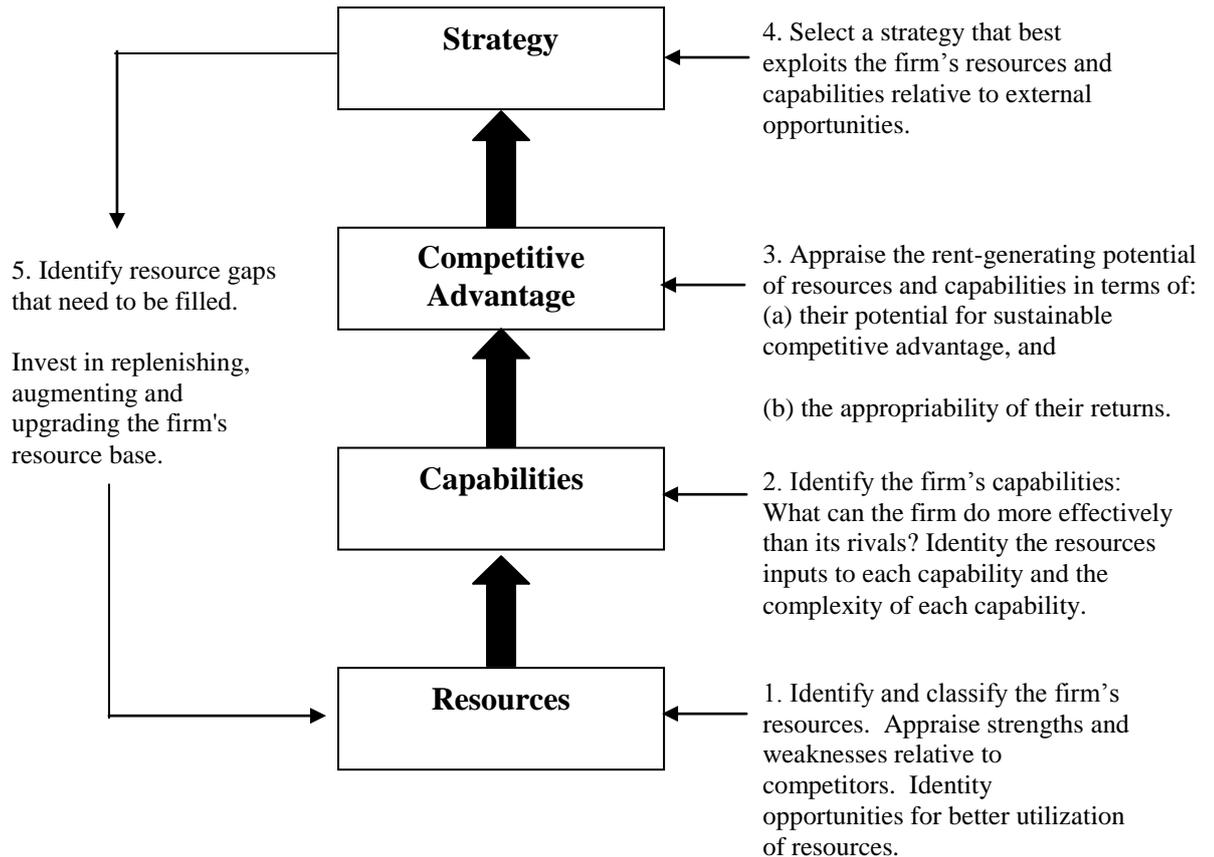
Skills	Individual level
Processes, routines	Organizational, recombinant
Capabilities	Reliable capacity to produce an outcome
Distinctive capabilities	Outcomes no one else produces at the same level
Resources	Hard to copy factors that underpin distinctive capabilities

Adapted from: Anderson (2004)

Figure 2-7: RBV typology

2.3.4 Building strategic capability

A recurring theme is the need to understand the relationship between resources, capabilities, competitive advantage and profitability in order to apply a resource-based approach to strategy formulation. Grant (1991) argued that the implications of the RBV are unclear for two reasons: there is no single integrating framework and there has been little effort to develop the practical implications of the theory. To further the field of study, Grant (1991) proposed a 'practical' framework, which is shown in Figure 2-8.



Adapted from: Grant (1991)

Figure 2-8: A resource-based approach to strategy analysis: A practical framework

In evaluating rent-earning potential of the resources and capabilities, Grant (1991) stated that the returns depend on 2 key factors: the sustainability of competitive advantage over time and the ability to appropriate rents earned from the resources and capabilities. Appropriability is defined as the ability of a firm to capitalize on its resources and capabilities. This is especially the case if the capability is derived through the organization's people.

Table 2-20: Determinants of sustainable competitive advantage

Determinant	Explanation
Durability	How fast the resources and capabilities depreciate or become obsolete.
Transparency	<p>How fast firms can imitate requires two problems to be overcome:</p> <ol style="list-style-type: none"> 1. The information problem: What is the competitive advantage of the successful rival? 2. The strategy duplication problem: How will the rival obtain the resources and capabilities to imitate the strategy? <p>These are both problems of transparency. The more uncertainty within a market over how successful companies 'do it', the more inhibited the potential entrants and the higher the level of profits that established firms can maintain within the market. This relates to theory of 'uncertain imitability' (Lippman and Rumelt (1982)).</p>
Transferability	<p>The ease of amassing the necessary resources and capabilities. Sometimes this is not easy and imperfections in transferability may come from several sources:</p> <ul style="list-style-type: none"> • Geographical immobility: The cost of relocating capital equipment and people. • Imperfect information: Do not know the value of the resources and its productivity. This is built up over time. • Firm-specific resources: The value of the resource falling on transfer due to a decline in its productivity, e.g., a change in the ownership of a brand name. • The immobility of capabilities: Capabilities are much less mobile. They require the transfer of the whole team.
Replicability	Imperfect transferability of resources and capabilities limits the ability of a firm to buy the means to imitate success. The firm therefore tries to replicate the resources and capabilities through internal investment.

Adapted from: Grant (1991)

Over the long-term, competitive advantage is eroded through depreciation and through imitation. The speed of erosion depends on the characteristics of the resources and capabilities. Four determinants of sustainability of competitive advantage have been defined and these are given in Table 2-20. Table 2-20 views the capabilities from the perspective of their erosion, but we are equally interested in how these capabilities are developed in the first instance. This is the area of the literature that we now turn to.

An effective strategy builds strategic assets and future strategy must make effective use of the resources that have been amassed. Hamel (1994) described an approach to building core competencies, deploying them and protecting them once they have been identified. Invisible assets are accumulated in two ways (Itami (1987)):

- The direct route, where a firm takes explicit actions to achieve the goal
- The operations route, in which assets are accumulated as by-products of daily operations

Hall (1991) also had an interest in intangible resources and chose to categorize the intangible resources into those that were people independent and those that were people dependent. The people independent intangible resources were sub-categorized into those with legal protection and those without legal protection. The people dependent intangible resources were listed as know-how (employee, suppliers and distributors), networks, organizational culture (e.g., cope with change, put the customer first) and reputation. The 1992 work included a survey of 100 CEOs that had a 29% return rate (N=29). A later paper reported work with a larger samples size but the 1991 paper gave an indication of the importance of the intangible resources as well as the ranking. The results of Hall's survey are given in Table 2-21. The paper also included data on 'replacement periods' and evidence of a relationship between sales growth and the perceived lead in employee know-how. The paper called for research between employee know-how and core competences.

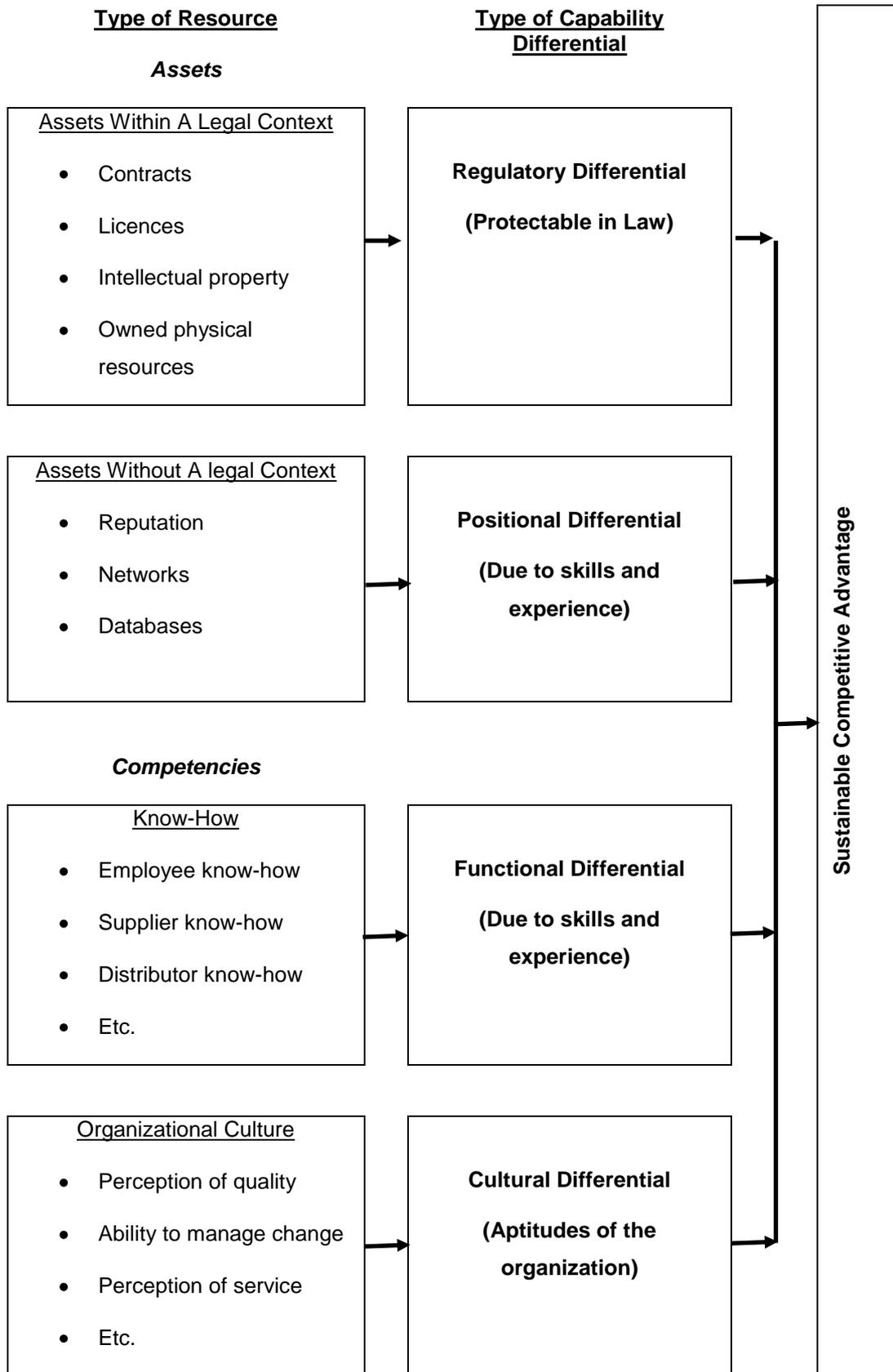
Table 2-21: The relative importance of the contribution each intangible resource made to the overall success of the business in 1990

Importance rating scale: Insignificant 1, to Critical 5 (N=29)

Intangible Resource	Average Importance	
	Ranking	Rating
Company reputation	1	4.3
Employee know-how	1	4.3
Product reputation	1	4.3
Networks	4	3.9
Specialist physical resources	5	3.5
Supplier know-how	6	3.3
Intellectual property rights	7	2.9
Contracts	8	2.9
Distributor know-how	9	2.7
Trade secrets	9	2.7
Public knowledge	11	2.5

Adapted from: Hall (1991)

Hall (1992) reminded us that Itami (1987) argued that a characteristic of successful organizations is the recognition that there is a learning process that runs in parallel with all operations that enhances intangible assets. Hall's work built on his 1991 paper and the work of Coyne (1986), who identified four sources of sustainable competitive advantage. This resulted in the model shown in Figure 2-9, which has two types of resource – Assets and Competencies, leading to four types of 'Capability Differential' that in turn leads to a competitive advantage. Comparison of Hall's model with the EFQM Excellence Model[®] indicates that all the elements of the former model are to be found in the EFQM Excellence Model[®].



Adapted from: Hall (1992)

Figure 2-9: Intangible resources, capability differentials and sustainable competitive advantage

Hall's 1992 paper contained additional data over the 1991 paper as it gave a comparison between two years, 1987 and 1990. The total sample size is larger in the later paper but it is not clear if this increased sample includes both surveys, or whether it represents a separate survey. Whatever the case the sample size was larger, which indicates that the data may be more reliable and may explain why the ranking order has changed from the 1991 paper. The relative importance of the contribution made by each intangible resource to the overall success of the business for the two years is given in Table 2-22.

Table 2-22: Relative importance of intangible resources in 1987 and 1990

1 Most Important to 13 Least important (N=95)

Intangible Resource	Ranking	
	1990	1987
Company reputation	1	1
Product reputation	2	2
Employee know-how	3	3
Culture	4	5
Networks	5	4
Specialist physical resources	6	6
Databases	7	10
Supplier know-how	8	7
Distributor know-how	9	8
Public knowledge	10	9
Contracts	11	11
Intellectual property rights	12	13
Trade secrets	13	12

Adapted from: Hall (1992)

Given the short period between the two surveys, it is perhaps not surprising that there has been little change in the ranking with the exception of databases, which possibly reflects the improved use of technology, which is consistent with the view of Itami (1987) who saw technology to be a key intangible resource. The longitudinal approach data was

used so that a performance group factor could be used for some additional analysis. The research also classified the organizations surveyed in terms of performance based on an 'increase in sales per employee' basis over the period. The data is shown in Table 2-23 and it is of interest that the higher the perceived replacement period the higher the perceived competitive advantage. This is confirmed by the observation that the top three ranked intangible resources have the highest replacement period. It is also noteworthy that the performance grouping does not appear to be an influencing factor apart from Company reputation.

Table 2-23: Replacement periods

Intangible Resource	Replacement Period (years)			
	Total Sample	Performance Groups		
		Low	Medium	High
Company reputation	10.8	13.0	14.0	8.1
Product reputation	6.0	6.8	6.4	6.3
Employee know-how	4.6	4.4	4.6	4.7
Networks	3.4	3.0	3.9	3.3
Supplier know-how	3.1	2.4	4.4	3.0
Databases	2.1	2.0	2.8	1.6
Distributor know-how	1.6	1.4	1.9	1.8

Adapted from: Hall (1992)

Many authors have noted the role that intangible assets play in creating value (e.g., Penrose (1995); Pitelis and Whal (1998); Teece (2000); Doyle (2001); Sussland (2001); Gray (2003); Kristensen and Westlund (2003); Kaplan and Norton (2004); McDonald-Wood (2004); Pock, Westlund et al. (2004); Kristensen and Westlund (2004b)). Many have developed lists of assets that are argued to contribute to creating business value or competitive advantage. Table 2-24 lists the views of some of these authors.

Table 2-24: Other views on the sources of advantage

Reference	Source of Advantage
Sussland (2001)	Financial assets, Organizational capital, Marketing capital, Time-cycles/ Life cycles and Human capital
DTI (2001)	Relationships, Knowledge, Leadership and communication, Culture and values, Reputation and trust, Skills and competences, Processes and systems
Kristensen and Westlund (2003)	Customers, Human resources, Partners and Brand
Kaplan and Norton (2004)	Human capital, Information capital and Organizational capital
Low and Kalufat (2002) (Cited in Pock, Westlund et al. (2004))	Leadership, Strategy execution, Communication and transparency, Brand equity, Reputation, Alliances and networks, Technology and processes, Human capital, Workplace organization and culture, Innovation, Intellectual capital, Adaptability
International Federation of Accountants (in Print (2004))	Human capital, Relational (customer) capital, Organizational (structural) capital

Information flow plays a role in the asset accumulation process (Itami (1987)). Dierickx and Cool (1989) put forward a framework based on the notion of asset stock accumulation and developed guidelines for assessing the sustainability of a firm's competitive advantage. They argued that a firm that does not own a non-tradable asset that it requires for the implementation of its product market strategy is constrained to "building" this asset. For example, a reputation for quality may be built (rather than bought) by following a consistent set of production, quality control etc. policies over some period of time. They noted that strategic asset stocks are accumulated by choosing appropriate time paths of flows over a period of time and use the 'bath-tub' example to illustrate this, noting that it takes a consistent pattern of resource flows to accumulate a desired change in strategic stock assets. They defined critical or strategic asset stocks as those assets that are non-tradable, and as inimitable and non-substitutable.

Dierickx and Cool (1989) noted that the sustainability of a firm's privileged asset position hinges on how easily it can be replicated. If certain assets cannot be bought in factor

markets, rivals may either attempt to imitate them by accumulating similar asset stocks of their own or they may try to substitute them by other assets. Whether imitation of a particular asset stock will be time consuming, costly, or both depend on the relative ease with which rival firms are able to accumulate a similar asset stock of their own. That is, imitability of an asset stock is related to the characteristics of the process by which it may be accumulated. In general, the following characteristics can be identified:

1. Time compression diseconomies (problem with doing things in shorter timeframes)
2. Asset mass efficiencies (having a big stock to start with)
3. Interconnectedness of asset stocks (access to assets you need to grow the asset)
4. Asset erosion (losing assets over time)
5. Causal ambiguity (whether it is 'jackpot' model or not).

In concluding, Dierickx and Cool (1989) noted their asset flow and growth framework had important implications for empirical strategy-performance research. Barney (1991a) made use of Dierickx and Cool's framework when deriving his resource model, which is reproduced in Figure 2-4.

It is recognised that the resource development path is important to developing sustained competitive advantage (Dierickx and Cool (1989); Barney (2002)). Pettus (2001) considered whether there is a sequencing of a firm's resource development that best leads to a firm's growth over time. The longitudinal study commenced with the deregulation of interstate transportation by the Motor Carrier Act in 1980 and ended in 1993 when there was a further change in the law. 59 publicly traded companies from a total of 166 identified enterprises were selected and it was noted that these publicly traded companies accounted for 70% of the growth in revenues, employees and assets.

Published company annual reports were used as the source of the data for the study. Firm growth was the dependent variable and this was measured in terms of change in sales, employees and assets. Pettus (2001) used the classification system in Figure 2-10 to position the various companies.

Existing	A Excess Capacity	C International Economies of Scale
	B Dynamic Capabilities	D Innovation
Resource Development	Existing	New
New	Market Position	

Adapted from: Pettus (2001: p884)

Figure 2-10: Classification system

A number of industrial experts were asked to identify strategic actions in order to ascertain the different strategic development path for each firm. The study demonstrated that the firms that followed a specific hypothesised resource development pattern generated higher growth than those following other development plans. This hypothesized path related to a movement from quadrant A to C in Figure 2-10, followed by a move to quadrant B before briefly returning to A before moving to quadrant D. The research was limited in two respects. Firstly, it was considered static as it lacked a time line and secondly, generalizability was an issue as the de-regulation may have caused a 'Schumpeterian Shock'. It was also noted that the resources in the industry are 'lumpy' (Pettus (2001: p886)).

Working with technology companies where there is a need to compete in a world of shorter lifecycles, Klein, Edge et al. (1991) recognized that the term 'skill' is not clearly defined in the strategy literature and define a corporate skill as a systematic property of the entire organization. It involves both a human skill and organizational factors: 'hard factors' such as equipment and facilities and 'soft factors' such as organizational culture and design, which is again consistent with the thoughts of Rahman (2004). Klein, Edge et al. (1991) noted that if either the human element or organizational factor is removed then the skill disappears.

Like the intangible resources of Hall, a corporate skill can take years to build up or replace. It is also a dynamic concept that simultaneously involves both thought and action and is continuously updated and modified through use, which is in contrast to a

concept such as a core competence, which is noted to be a static attribute where management seek out opportunities for these attributes (Klein, Edge et al. (1991)). The paper proposed a learning cycle where 'Raw Skills' (people and organizational) are introduced into an organization and used for a specific task and, by doing so, these become 'Dedicated Skills' for a specific task. Through learning, these dedicated skills are shared and they become 'Core Skills', which are applied in other situations across the organization. When this skills transfer process is complete, the organization has the ability to innovate and thereby improve the application of the original Dedicated Skills on the specific task.

In studying a number of organizations Klein, Edge et al. (1991) identified 'Metaskills', which are the way in which skills are managed more or less effectively in an organization. Metaskills are about behaviour rather than knowledge. Four main metaskills were defined, these being:

1. Learning – the process of building up core skills from dedicated skills
2. Innovating – the process of using core skills in creative ways
3. Skill categorizing – combining and structuring dedicated skills into a forward looking set of core skills. This is about looking towards the future requirements
4. Embedding – finding ways to preserve skills and prevent their rapid leakage

DeCarolis and Deeds (1999) conducted a quantitative study in the biotechnology industry to examine whether knowledge generation, which was considered to be a firm specific inimitable and non-tradable asset, led to superior firm performance. It was noted that the knowledge flow was increasing the knowledge strategic assets in this industry. A number of hypotheses were generated that related firm performance to factors such as geographical location, number of strategic alliances and research activities. 218 firms that all become publicly traded after 1982 were contacted to obtain a copy of their research reports, on which the analysis was based. 106 companies, representing a response rate of 48%, participated in the study.

The study concluded that the company location was significant and that this gave the company access to better knowledge flows and the ability to attract skilled personnel. The second knowledge flow variable, Research and Development activity, gave mixed results and this was attributed to multicollinearity. The third knowledge flow variable, the number of alliances, which represented the number of connections to other research institutions, was also found to be non-significant. It was concluded that this variable did not, in effect, measure knowledge flow.

Three stocks of knowledge were also examined. The study found that products in the pipeline and number of firm citations were the two independent variables that had an effect on firm performance. Knowledge stocks represented by the number of patents was non-significant, this being explained by the observation that the number of patents did not consider the quality of the patents. The research concluded that the relative importance of stocks versus flows is in need of further research. The authors also called for longitudinal studies to be conducted to investigate the flows and stocks. It was noted that the generalizability was limited and the research was conducted in a single industry.

Amit and Schoemaker (1993) were concerned with the growth of strategic assets. They define the firm's Strategic Assets as *'the set of difficult to trade and imitate, scarce, appropriable and specialised Resources and Capabilities that bestow the firm's competitive advantage'* (Amit and Schoemaker (1993: p36) and noted that *'while empirical models may, ex post, point to a limited set of resources and capabilities that explain some of the firm's past performance, ex ante, such models offer limited insight into the dimensions of competition that will prevail in the future'* (Amit and Schoemaker (1993: p33)). This view is in line with the 'In search of excellence' comment from Priem and Butler (2001).

Amit and Schoemaker (1993) suggested that managerial decisions about the resources and capabilities are made within a setting that is characterized by uncertainty about the external environment (which includes the macro-environment as well as competitors' behaviour and customers' preferences), complexity (concerning the causes that shape the environment and the competitive interactions), and intra-organizational conflicts amongst decision makers. It was noted earlier that there has been a call for more research on the interactions of organizational and competitive influences on strategy and performance (Henderson and Mitchell (1997)).

Within an industry at a given point in time certain resources and capabilities, which are subject to market failures, have become the prime determinants of economic rents and these resources and capabilities have become termed 'Strategic Industry Factors' (Barney (1986)). Table 2-25 lists some general characteristics of strategic industry factors. Amit and Schoemaker (1993) noted that the set of strategic industry factors changes and cannot be predicted with certainty ex ante. However, a major challenge to a firm is to identify, ex ante, a set of strategic assets as the grounds of establishing the firm's sustainable competitive advantage and thereby generate organizational rents. Organizational rents are defined as economic rents that stem from the organization's

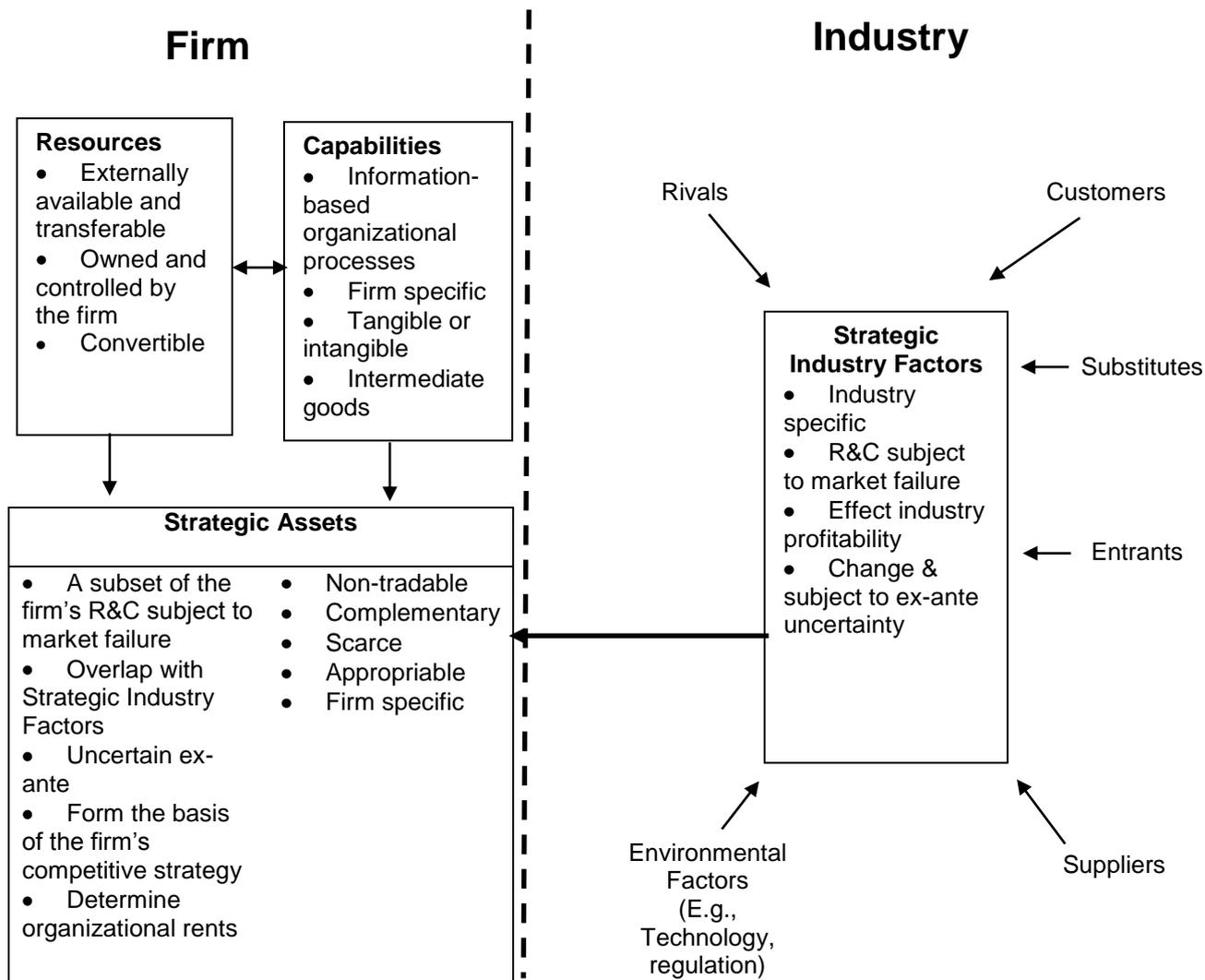
resources and capabilities and that can be appropriated by the organization (rather than any single factor).

Table 2-25 General characteristics of strategic industry factors (SIF)

1. Stock type Resources and Capabilities that, ex post, are shown to be key determinants of firm profitability in an industry.
2. Determined at the market level through complex interactions among industry rivals, new entrants, customers, regulators, innovators, suppliers, and other stakeholders.
3. Strategic in that they are subject to market failures and may be the basis for competition among rivals.
4. The bundle of SIF changes over time and is not known ex ante.
5. Their development takes time, skill, and capital; they may be specialized to particular uses; investments in them are largely irreversible (i.e., entail sunk costs).
6. Their values deteriorate or appreciate, over time, at varying rates of change.
7. Their pace of accumulation may be affected by a range of managerial actions (policy levers) and by the magnitude of other Resources and Capabilities that are controlled by industry rivals. One cannot easily speed up their development (e.g., doubling the investment will not usually halve the time).
8. Their value to any particular firm may depend on its control of other factors - the complementary property. For instance, the value of a firm's product design capability may depend upon the effectiveness of its distribution network.
9. Not all aspects of their development and interactions will be known or controllable.

Adapted from: Amit and Schoemaker (1993)

Amit and Schoemaker (1993) defined the relationship between industry determined strategic industry factors, and firm level resources, capabilities and strategic assets, using the model shown in Figure 2-11. When making decisions about strategic assets three factors for consideration have been defined. The first is the challenge of uncertainty, the second that of complexity and thirdly conflict with the organization. In support of the third factor King, Fowler et al. (2001) observed that agreement among managers on the core competencies leads to better organizational performance.



Adapted from: Amit and Schoemaker (1993)

Figure 2-11: Strategic industry factors, resources & capabilities, and strategic assets

To end this sub-section we return to the thoughts of Barney. In his more recent work Barney (2002) gave us the VIRO framework (Table 2-26). This work started to integrate the strategy (S – C – P) perspective with a neo-economics perspective (Barney (2001b)). Within this framework Barney made the point that, to have above normal returns, an organization must exploit its valuable, rare and difficult to imitate resource. This sub-section has reviewed the literature to see how this might be achieved.

Table 2-26: The VIRO Framework

Valuable?	Rare?	Costly to Imitate?	Exploited by Organizations?	Competitive Implications	Economic Performance
No	-	-	No ↑ ↓ Yes	Competitive disadvantage	Below normal
Yes	No	-		Competitive parity	Normal
Yes	Yes	No		Temporary competitive advantage	Above normal
Yes	Yes	Yes	Yes	Sustained competitive advantage	Above normal

Adapted from: Barney (2002: p173)

2.3.5 Dynamic capabilities

The potential disruption effects of Schumpeterian shocks when there are structural revolutions in the industry have been noted Barney (1991a), and the work of Snow and Hrebiniak (1980b) sought to look at distinctive competences in different industry situations. Before Barney produced his landmark paper on the RBV, he examined the value of resources (for controllers) against the benefit delivered by the resources on implementing a strategy (to strategizers). He argued that these resources are the 'strategic factors' that are traded in 'strategic factor markets', e.g., if the resource is reputation then there is a need to trade in the market for reputations (Barney (1986)) Although the value of such strategic factor markets has been challenged by Dierickx and Cool (1989), it is clear that the external environment has to be taken into account when considering the RBV (Henderson and Mitchell (1997); Priem and Butler (2001); Webb and Gile (2001)). Barney (1986) also expressed the view that to achieve above average returns, a firm must be better informed about the future value of the strategy or be lucky, and he recommend the use of environmental analysis and organizational analysis to improve forecasting the future.

Lenz (1980), in building on earlier work by Selznick and Druker, recognised the need to evaluate an organisations' ability to pursue its strategic choices. He used the term

'Strategic Capability' to recognise this ability and developed a model to further its understanding. Lenz's model noted a number of dimensions for this purpose, these being knowledge-technique base for value creation, capacity to generate and acquire resources, and general management technology. Although focused on the competence of strategy implementation, strategic capabilities recognise the characteristics of the market and are a good starting point for the discussion on the way that organizations overcome changes in their environment.

Competitive advantage changes over time as witnessed by changing focus from economies of scale to economies of scope to value chain integration to whatever next. This has been credited to 'disruptive technologies' (Christensen (2001)). In discussing the changing nature of the core competences of an organization, Lei, Hitt et al. (1996) used the term 'Dynamic core competences'. They argued that if change was the norm, organizations needed to develop dynamic core competences that could be used as platforms from which to offer new products, goods, and services. It was recognized that these competences would be hard to develop and once they were in place, they should be nurtured, replenished and upgraded (Lei, Hitt et al. (1996)). Petts (1997) gave advice on the 'Core Competence Engine', which integrates metaskills, core competences, capability, customer needs and time. The core competence engine is described as a practical approach for managing the growth of core competences.

In building on the work of Lei, Hitt et al. (1996), who argued the case for dynamic core competencies from a learning perspective not dissimilar to that of Klein, Edge et al. (1991), Zahra (1999) expressed the view that leadership was key to future competitiveness. Zahra (1999) linked leadership with the need to harvest the wellspring of creativity and knowledge among an organizations' employees in order to sustain the dynamic capabilities. They also noted that this would require significant changes in organizational cultures, systems, and views of human resources and would require investments in upgrading the firm's human capital. A second way to build these dynamic capabilities, according to Zahra (1999), was to selectively use external sources of organizational competencies to complement and augment the firm's existing skills, for example, through the use of outsourcing, joint ventures, and licensing agreements. Care must be taken not to rely too heavily on external sources to develop skills as this could lock out the internal skill set and contact rates with third-parties tend to be less frequent than internal contacts (Lei and Slocum (1992)). Zahra (1999) held the view that companies are trading off growth and profitability for short-term advantage, whereas building dynamic capabilities requires sustained investments in the firms' assets and resources in ways that set the company apart from its rivals.

Several authors have noted that one of the limitations to RBV and Business Excellence research is that the external environment is not taken into account (e.g., Miles, Snow et al. (1978); Henderson and Mitchell (1997); Das, Handfield et al. (2000); Fiol (2001)). The concept of 'Dynamic Capabilities' builds on the theories surrounding capabilities by applying the resource-based view to dynamic markets (Teece, Pisano et al. (1997)). In these markets, where the competitive landscape is shifting, the dynamic capabilities by which a firm manages integrates, builds and re-configures internal and external competences to address rapidly changing environments become the source of sustained competitive advantage. Eisenhardt and Martin (2000: p1107) defined Dynamic capabilities as *'the firm's processes that use resources – specifically the processes to integrate, re-configure, gain and release resources – to match and even create market change. Dynamic Capabilities, thus, are the organizational process and strategic routines by which firms achieve new resource configurations as markets emerge, collide, split, evolve, and die'*.

Eisenhardt and Martin (2000) noted that dynamic capabilities exhibit commonalities across effective firms or what they term 'best practice'. They have greater equifinality, homogeneity and substitutability across firms than the traditional resource-based view implies, and they vary with market dynamism. When markets are moderately dynamic such that change occurs in the context of stable industry structure, dynamic capabilities resemble the traditional conception of routines. That is, they are complicated, detailed, analytic processes that rely extensively on existing knowledge and linear execution to produce predictable outcomes. In contrast, in high-velocity markets where industry structure is blurring, dynamic capabilities take on a different character. They are simple, experiential, unstable processes that rely on quickly created new knowledge and iterative execution to produce adaptive, but unpredictable outcomes. Finally, well-known learning mechanisms guide the evolution of dynamic capabilities and underlie path dependence. Table 2-27 shows the distinction between dynamic capabilities under different industry conditions.

Table 2-27: Dynamic capabilities and types of dynamic markets

	Moderately Dynamic Markets	High Velocity Markets
Market definition	Stable industry structure, defined boundaries, clear business models, identifiable players, linear and predictable change	Ambiguous industry structure, blurred boundaries, fluid business models, ambiguous and shifting players, non-linear and unpredictable change
Pattern	Detailed, analytic routines that rely extensively on existing knowledge	Simple, experiential routines that rely on newly created knowledge specific to the situation
Execution	Linear	Iterative
Stable?	Yes	No
Outcomes	Predictable	Unpredictable
Key to effective evolution	Frequent, nearby variation	Carefully managed selection

Adapted from: Eisenhardt and Martin (2000)

Key to the views held by Eisenhardt and Martin (2000) is that dynamic capabilities are not vague or ill-defined, but consist of many well-known processes such as product development, strategic decision making and alliancing. Their value for competitive advantage lies in their ability to alter the resource base: create, integrate, re-combine and release resources. Whilst a specific dynamic resource might be firm specific, they can be shared across firms, although it has been noted that such sharing of practice is not straightforward (O'Dell and Grayson (1997); Szulanski, Winter et al. (2000); Harrington (2004)). Competitive advantage derived from both having a superior practice and '*using dynamic capabilities sooner, more astutely, or more fortuitously than the competition to create resource configurations that have that advantage*' (Eisenhardt and Martin (2000: p1117)).

Galunic and Eisenhardt (2001) recognized that research on dynamic capabilities has examined knowledge transfer, integrative capabilities, and product innovation processes. They sought to extend this work by examining the micro processes and roles that form the capabilities, the impact of social imperatives and how dynamic capabilities and

organizational structures can combine to constitute new organizational forms. Focusing on a large, multi-business Fortune 100 corporation, a multiple case study approach was taken to examine events where there had been a change in business divisions' responsibility (a 'charter change event'). A total of 11 such divisions were studied with 86 interviews being conducted.

The study identified three patterns. The first pattern was with new opportunities where it was found that the best opportunities were given to weaker divisions to improve their success. The second pattern, termed 'charter wars', emphasized inter-divisional rivalry in established markets resulting in better matches between divisions and their charters. The third pattern related to rapidly organized businesses being placed in a temporary home until a more permanent move could be agreed. The observations led to the definition of 'Dynamic communities', which have the following features shown in Table 2-28.

Table 2-28: Features of dynamic communities

Features	Description
Modular structures: Independent but related	Modularity generates diversity within the divisions, with each division having its own unique product-market domain that demands different skills. As a consequence the different divisions focus on different capabilities. But, given that the divisions compete in similar market places, there is an advantage to sharing common approaches and this aids the transfer of product responsibilities from one division to another.
Corporate culture: Competition and cooperation	Capitalizing on the change process required a corporate culture that emphasised both the competitive aspects as well as the common identity. This type of culture, where common rules for behaviour guide the actions of individual managers, is seen as a requirement of self-organizing systems.
Dynamic capabilities: Economic and social rules	The dynamic capabilities seem at first glance to be complicated, but in fact do not match the traditional concept of strategic processes. They consist of a few simple, often competing, rules that enable highly effective behaviour. These rules are economic and social, despite the fact that they are often weighed against each other in the short term, as they ensure the viability of dynamic communities in the long-term.
Leaders as architects, entrepreneurs and cultural guardians	Corporate executives play roles that go beyond the traditional roles of managing corporate boundaries and overseeing performance. Executives are much more entrepreneurial in spotting opportunities at the divisional level and re-crafting the corporate architecture, taking advantage of the resource stocks and helping to generate them.

Adapted from: Galunic and Eisenhardt (2001: p1243):

More recent work has led to the definition of the term 'Dynamic Managerial Capabilities' (Adner and Helfat (2003)). These authors conducted a single industry study where managers faced a similar, but changing, set of external conditions to test the proposition that managerial decisions at the corporate level are associated with heterogeneity in business performance. The analysis indicated that corporate-level managers in different firms made different decisions in response to changes in the external environment. In addition, the inclusion of a time varying corporate effect associated with corporate-level decisions led to a statistically significant increase in the explained variance of business profitability, after controlling for year, industry segment, 'stable' corporate, business, and segment-year effects. The authors note that Rosenbloom (2000) suggested leadership by individuals may be a 'central element' in the more general dynamic capability of an organization to change. Adner and Helfat (2003) proposed that dynamic managerial capabilities were rooted in three underlying factors:

1. Managerial human capital
2. Managerial social capital
3. Managerial cognition

They called for more work to be conducted in this area (Adner and Helfat (2003)). Table 2-29 summarizes the various definitions for dynamic capabilities given by the authors reviewed in this section.

The link between dynamic capabilities and knowledge and skills has been noted by several authors (Lei, Hitt et al. (1996); Pitt and Clarke (1999); Zahra (1999); Teece (2000)). Wiklund and Shepherd (2003) examined the way that organizations used their bundle of knowledge-based resources to see if there was a positive relationship with performance. A key point in their argument was that the 'O' in Barney's VIRO framework operates on the 'VIR' and that the knowledge-base resources could represent the 'O'. A survey of Swedish SMEs was conducted and the results found support the positive relationship between the knowledge resource and performance (Lei, Hitt et al. (1996); Zahra (1999)). It is interesting that Teece argued that, in a world where legal mechanisms isolate knowledge assets, dynamic capabilities are less critical (Teece (2000)), a view that reminds the reader of Hall's framework (Hall (1992)) that was discussed earlier.

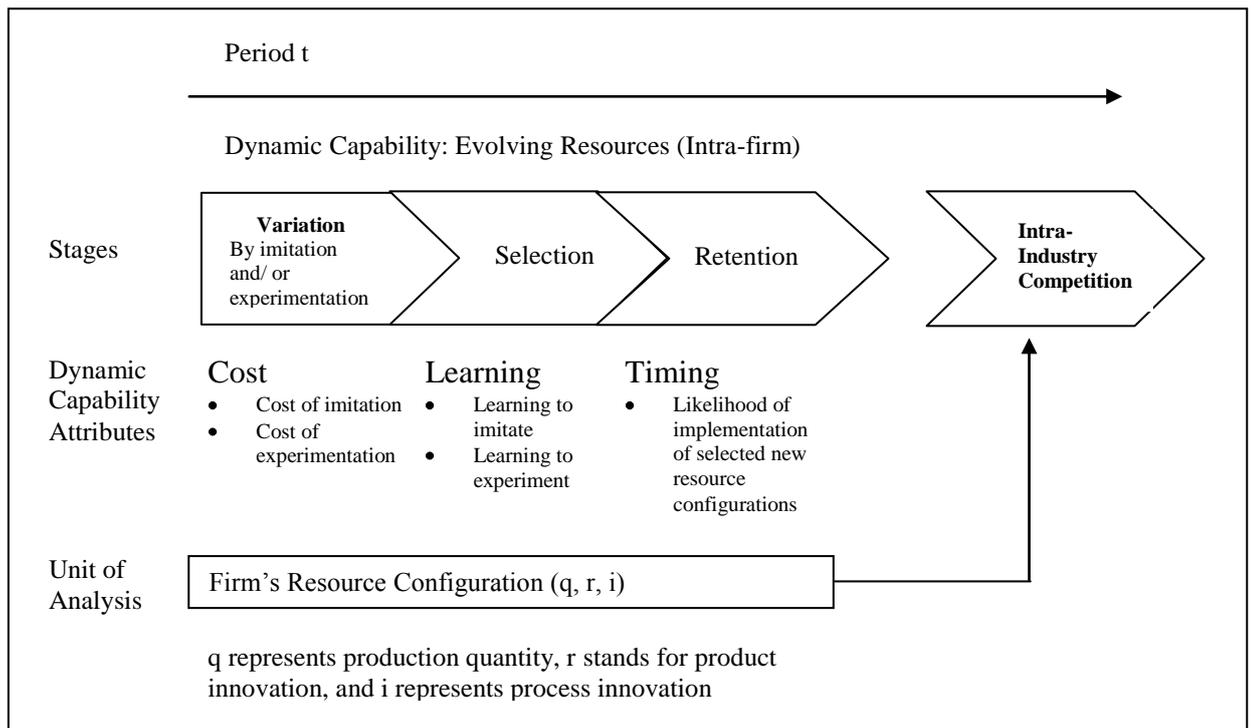
Table 2-29: Definitions of dynamic capabilities

Term	Definition	Reference
Strategic Capability	The capability of an enterprise to successfully undertake action that is intended to affect its long-term growth and development	Lenz (1980)
Dynamic Core Competences	Firms investing and upgrading their competences to create new growth alternatives.	Lei, Hitt et al. (1996)
Dynamic Capabilities	Capacity to reshape and reconfigure resources in response to change.	Teece, Pisano et al. (1997)
Dynamic Capabilities	Specific processes that create, reconfigure, integrate, or import resources.	Eisenhardt and Martin (2000)
Dynamic Capabilities	The organizational and strategic processes by which managers manipulate resources into productive assets in the context of changing markets.	Galunic and Eisenhardt (2001)
Dynamic Capabilities	Collective activity of modifying or creating routines. Changing how we earn a living now.	Winter (2003)
Dynamic Managerial Capabilities	The capabilities with which managers build, integrate, and reconfigure organizational resources and competences.	Adner and Helfat (2003)

Building on the work of Teece, Pisano et al. (1997) and Eisenhardt and Martin (2000), Zott (2003) used computer simulations to examine why firms in the same industry perform differently and, as a result, presented a four stage model that included:

1. Variation – by imitation (external) or experimentation (internal)
2. Selection – related to learning
3. Retention – related to timing
4. Intra-industry competition

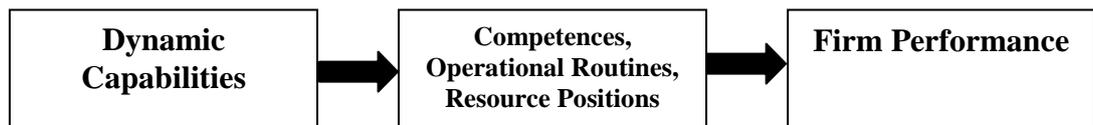
The model overview from the perspectives of one of the firms is presented in Figure 2-12 with the 'Dynamic Capability Attributes' of Cost, Learning and Timing. Zott (2003) noted that the model is closely linked to a system of evolutionary change as described by Helfat and Raubitschek (2000) and Zollo and Winter (2002). Helfat and Peteraf (2003) also introduced the concept of 'Capability lifecycles' to advance dynamic resource-based theory.



Adapted from: Zott (2003)

Figure 2-12: Model overview

Zott (2003) concluded that a consensus appears to be emerging in the strategy field on the nature of dynamic capabilities in that they are embedded in routine organizational processes aimed at effecting change. A schematic version of the consensus view is given in Figure 2-13. The theory developed in the paper shows that even if dynamic capabilities are equifinal across firms, performance differences between firms might occur due to the costs and the differential timing with which they are used. In addition Zott noted that '*In contrast to conventional wisdom, dynamic capabilities may thus serve to gain and sustain competitive advantage*' (Zott (2003: p120)).



Action of dynamic capabilities on resources and capabilities

- Invest and upgrade (Lei, Hitt et al. (1996))
- Integrate, build, reconfigure (Teece, Pisano et al. (1997))
- Gain, reconfigure, integrate, release (Eisenhardt and Martin (2000))
- Manipulate (Galunic and Eisenhardt (2001))
- Build, integrate and reconfigure (Adner and Helfat (2003))
- Modify or create (Winter (2003))

Resulting effect on resources and capabilities

- Match/ address changing environment (Teece, Pisano et al. (1997))
- Create a 'Mental buffer' (Savolainen (2000a))
- Create market change (Eisenhardt and Martin (2000))
- Improve effectiveness (Zollo and Winter (2002))

Adapted from: Zott (2003: p100)

Figure 2-13: Emerging consensus regarding dynamic capabilities and the link to performance

Zott (2003) noted that different search directions (imitation Vs experimentation) could explain the intrafirm performance and this could be a key to understanding how dynamic capabilities should be configured to achieve superior performance. It is suggested that empirical testing of the ideas would require the costs of imitation and experimentation to be calculated, together with the timing and frequency of change, and the speed of learning how to change. As costs of reconfiguration are normally hidden within a firm, measurement of this variable would be challenging. The question of the roles of leadership and culture was also raised by Zott (2003).

2.3.6 Implications from the resource-based view for the current research

Stevenson (1976), as cited by Snow and Hrebiniak (1980b), noted that one can only look at broad patterns between strategy and distinctive competences due to complexity. The fact that there are problems with identifying the resources that led to competitive advantage is also well documented (e.g., Grant (1991); Thomas, Pollock et al. (1999); Priem and Butler (2001); Walsh and Linton (2001)). One area where there is consensus, however, is that intangible resources play a significant part in generating competitive advantage (Itami (1987); Aaker (1989); Hall (1991); Hall (1992)). One theme that has emerged through the literature review is the parallel between the RBV research and the structure of the EFQM Excellence Model[®]. This parallel is illustrated in Table 2-30. The conclusion is that there is further support between Business Excellence and the RBV. One is reminded of the view of Powell (1995), who suggested that one of the most valuable uses of the Business Excellence frameworks is to provide a structure within which an organization may be considered.

Table 2-30: Comparing the EFQM Excellence Model® with RBV literature

Model Criterion Part	Resource	References
Leadership	Organizational alignment	Powell (1992a); Allen and Brady (1997)
	Trust	Barney and Hansen (1994)
	Organizational culture	Fiol (1991); Hall (1992); Penrose (1995); Watson and Korukonda (1995); Oliver (1997); Fiol (2001); Galunic and Eisenhardt (2001)
	Top-management skills	Castanias and Helfat (1991)
	Leadership	Norburn and Birley (1988); Thomas (1988); Finkestein and Hambrick (1996); Darling (1999); Galunic and Eisenhardt (2001); Zott (2003)
	Structure	Galunic and Eisenhardt (2001)
	Customer focus	Tena, Llusar et al. (2001)
Policy and Strategy	Strategic planning	Powell (1992b); Michalisin, Smith et al. (1997)
People	Organizational alignment	Powell (1992a)
	Human resource management	Wright and McMahan (1992); Lado and Wilson (1994); Flood, Smith et al. (1996); Galunic and Eisenhardt (2001)
	Trust	Barney and Hansen (1994)
	Know-how	Bowen and Lawler (1992); Hall (1992)
	Managerial competences	Webley and Cartright (1996)
	Continuous Improvement	Tena, Llusar et al. (2001)
Partnership and Resources	Information technology	Mata, Feuerst et al. (1995); Powell (1997)
	Legal assets, Other assets	Hall (1992); Lemak and Reed (1997)
	External co-operation skills	Rao, Solis et al. (1999)
	Learning	Fiol and Lyles (1985); Wruck and Jensen (1998); Fisher and White (2000)
	Knowledge	Grant (1996); Leibeskind (1996); Argote and Ingram (2000); Sveiby (2001)
Processes	Administrative skills	Powell (1993)
	Organization as a system	Tena, Llusar et al. (2001)
	Speed and flexibility on product and service design	Youssef, Boyd et al. (1996)
	Continuous improvement	Tena, Llusar et al. (2001)

Main Sources: Priem and Butler (2001); Tena, Llusar et al. (2001); Wright, Dunford et al. (2001)

A second key theme from the RBV literature review concerns the way that strategic assets are built over time (Aaker (1989); Dierickx and Cool (1989); Grant (1991); Hall (1991); Hall (1992)). The key driving factor of the EFQM Excellence Model® that relates to the improvement in performance relates to the '*Innovation and learning*' aspect (EFQM (1999a)). A number of RBV authors followed this learning theme when discussing the development of sustained competitive advantage. For example, Itami (1987) referred to the 'operations route' where assets are accumulated as by products of daily operations and Klein, Edge et al. (1991) 'meta-skills'. Both these views are compatible with the views of Zott (2003), who referred to 'internal' experimentation (continuous improvement/re-engineering) and 'external' imitation (benchmarking/ good practice transfer).

The concept of dynamic capabilities suggest that the environment may have an impact on an organization's ability to reconfigure its resources (Eisenhardt and Martin (2000)) and the effect of the external environment is rarely taken into account when conducting RBV and Business Excellence research (Miles, Snow et al. (1978); Henderson and Mitchell (1997); Das, Handfield et al. (2000); Fiol (2001)). The literature review in the first section, which examined the empirical work on the benefits for organizations that adopt Business Excellence, raised the potential effect of the external environment on the level of benefit and longer-term success of the organization (Hendricks and Singhal (1997); Hendricks and Singhal (2000); Hendricks and Singhal (2001a); Hendricks and Singhal (2001b); Przasnyski and Tai (2002); NIST (2002b)). It has also been noted that 'excellence' organizations form a 'mental buffer' to help them react to external environmental changes (Savolainen (2000a)). The effect of the external environment on the effectiveness of Business Excellence forms the third theme that has emerged from the RBV literature review. It would appear that the application of a Business Excellence philosophy through the use of a model might have an impact on the organization's ability to learn and subsequently re-configure its resources, but only under certain conditions. Barney, Wright et al. (2001) suggested that research involving resources, dynamic capabilities and knowledge would provide a valuable contribution to the RBV body of knowledge.

A final point of note from the RBV literature review is that the majority of the research, if not all, is focused on private organizations. The resource-based view has been found to be a better predictor of share value on the privatisation of Czech public sector organizations (Makhija (2003)), yet, when questioned, Grant expressed the opinion that there was a lack of understanding on the application of the RBV to public sector organizations (Grant (2004a)). A similar conclusion was drawn from the benefits research in the previous section. One of the principles of the Business Excellence models is that, whereas the detail may change, the overall concepts of excellence are as applicable to public organizations as private organizations. This is evidenced by the fact

that public sector organizations compete for the awards, sometimes in a separate category but sometimes head-to-head with private organizations. There is also a range of support documentation available. This discussion leads to the questions of whether the RBV may be applied to public sector organizations, whether Business Excellence works for public sector organizations, and whether the RBV is a good theoretical basis for Business Excellence. These are three important questions that the research addressed and will provide valuable contributions to the body of knowledge in both the RBV and Business Excellence fields.

Barney (2001b) suggested that the perspective chosen for RBV research should be dependent on the interest. Those interested in industry effects can use RBV as defined in 1991. Those interested in studying specific sources of sustained competitive advantage can take the basic 1991 logic and link it to papers such as Dierickx and Cool (1989) and Peteraf (1993). Finally, those interested in studying how resources and capabilities evolve over time can link the 1991 paper with the evolutionary theory of economic change model (Nelson and Winter (1982)) and the work of Teece, Pisano et al. (1997). Barney, Wright et al. (2001) noted the methodological issues that the RBV researcher faces, these being the need for the measurement of resources as they are intangible, the need for longitudinal studies and the need to use different methodologies, e.g., Administrative Science (e.g., surveys) and economics (e.g., modelling).

2.4 Research model and hypotheses

2.4.1 Research question and model

Considering the conclusions from the literature review, the following research question was formulated:

Does adopting a Business Excellence philosophy lead to the development of the ability to withstand changes in the external environment for both private and public organizations?

The question focuses on a number of points. Firstly, it asks whether Business Excellence works when viewed from the perspective of the Resource-based view of the firm. Despite the number of studies empirical work on the RBV has not evolved at the rate the theory has evolved (Hoopes, Madsen et al. (2003)). Secondly, it asks whether it is applicable to both private and public organizations. Thirdly, it challenges the generalizability of Business Excellence in that it is assumed that the philosophy is applicable to all organizations.

The literature review examined the empirical work conducted into the benefits of adopting a Business Excellence approach in support of the view that such adoption leads to improved business results. The Business Excellence critical success factor work identified Leadership as the critical success factor that would be used as the construct to measure the level of Business Excellence in the research. The section on Business Excellence and Leadership uncovered two important studies linking the two areas. The first of these was Prabhu and Robson's work using the 'Pilot' based instrument (Prabhu and Robson (2000)) and the second, the 'Leadership Excellence' instrument (Kanji and Sá (2001a); Sá and Kanji (2003)). So the first two constructs in the research model are Leadership Excellence, to reflect the measurement of the level of Business Excellence, and Performance.

The benefits literature review concluded that, although there is strong evidence for the advocacy of Business Excellence, there is some variety in the results and there could be important factors to examine through the current research. In particular, firm size and industry type appear to have an effect on the level of benefit. The third construct in the research model was therefore the Organizational Context.

There is some debate in the literature over the path dependency of the benefit. Some research suggested that such benefit is built over time whereas other research concluded that the performance of an award-winning firm is not differentiated until after award level performance is achieved. This latter point is particularly interesting, as the RBV literature supports the proposition that strategic capability, which leads to superior performance, is built over time (e.g., Aaker (1989); Hall (1991); Hall (1992); Hall (1994)). This raises the question as to whether Business Excellence does lead to superior performance or whether such performance is down to 'luck' (Barney (1986)), which could be caused by an event (Swords (1999)). The time taken to develop the assets and capabilities was therefore of interest and this led to the definition of the Strategic Capability construct.

Recent developments in the area of dynamic capabilities were found to have particular relevance to the current research, as a link could be drawn between the concept of the quality ideology of a an organization and its ability to react to change (Savolainen (2000a)). This feature fell under the scope of the Strategic Capability construct. Dynamic capabilities also recognize the impact of the dynamics of the industry on the ability of a firm to develop its strategic assets to a point where they are leading to superior performance. According to Zott (2003), the aspects of cost, learning and timing are key factors in developing dynamic capability. This was particularly interesting, given the calls to include the effect of the environment in RBV ((Henderson and Mitchell (1997); Priem

and Butler (2001)) and Business Excellence research (Das, Handfield et al. (2000); Leonard, McAdam et al. (2002)). These arguments led to the inclusion of the fifth and final construct in the research model, which was the Environmental Dynamics.

An initial research model was defined as shown in Figure 2-14. Later, in Chapter 3 of the thesis, the research model will be drawn in the context of the specific relationships under examination. For clarity in explanation of the constructs and for developing the methodology, it serves to show the constructs in a simple relationship. Each of the constructs is discussed in more detail in the next sections.

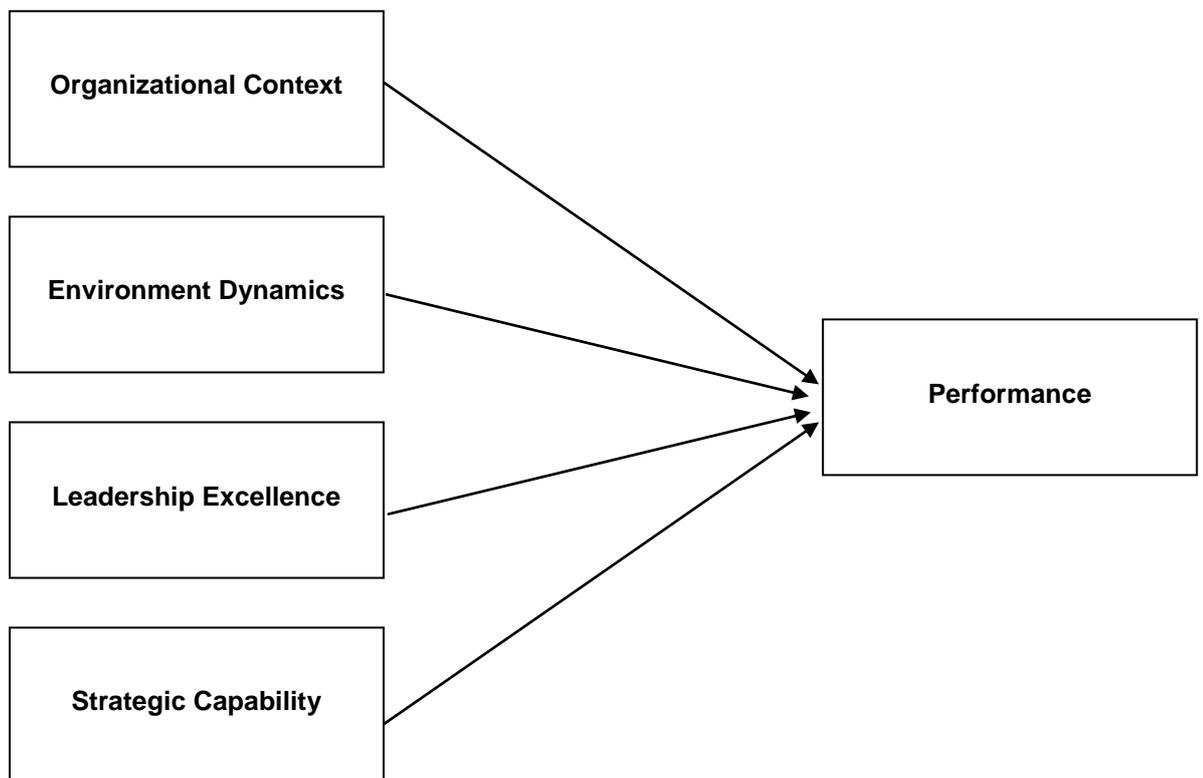


Figure 2-14: Initial research model

2.4.1.1 Performance construct

Empirical research supports the assertion that Business Excellence leads to superior performance. For example, GAO (1991); Hendricks and Singhal (1997); Terziovski and Samson (1999); Zahra (1999); Oakland (1999b); Curkovic, Vickery et al. (2000); Agus and Sagir (2001); Douglas and Judge (2001); Tena, Llusar et al. (2001); Hendricks and Singhal (2001b); Przasnyski and Tai (2002); NIST (2002b). A range of methods has been used to study the benefits, including surveys and secondary information such as

share-price performance. Performance has also been considered in researching the RBV of the firm examining the perception of the factors that contribute to sustained competitive importance such as in the work of Aaker (1989), Hall (Hall (1991); Hall (1992)) and of Snow and Hrebiniak (1980b).

2.4.1.2 Organizational context construct

The benefits of Business Excellence research indicated that firm size (Easton and Jarrell (1998); Terziovski and Samson (1999); Hendricks and Singhal (2001a); Hendricks and Singhal (2001b)), whole organizations or business units (NIST (2002b)) and industry type ((Easton and Jarrell (1998); Terziovski and Samson (1999); Beheshti and Lollar (2003)) have an effect on the level of benefit delivered. On the Whole Organization Vs Business Unit, it was noted that empirical research has tended to use the Business Unit as the unit of analysis (e.g., Schendel and Patton (1978)). It was also noticed that size was a factor in the strategic competences in hospitals (Douglas and Ryman (2003)).

Industry type was a variable in the work of Snow and Hrebiniak (1980b), although this did not have the effect that was anticipated. Different industries (Manufacturing, Service and Other) were also differentiated by Aaker (1989) and Hall (1992) considered firms in different 'Performance' categories. It was also noted, from the review of the benefits literature, that limited studies featuring public sector organizations were found, with only the work of Redman, Mathews et al. (1995), PriceWaterhouseCoopers (2000) and Agus (2004) being found. This was also the case with the resource-based view research, where it was noticed that there was a lack of research.

2.4.1.3 Environment dynamics construct

Related to the organizational construct where the industry type was considered as a factor, market conditions were noted to be an independent variable in the benefits research (Terziovski and Samson (1999); Przasnyski and Tai (2002)). The external environment has also been studied in RBV research (e.g., Snow and Hrebiniak (1980b); Bourgeois and Eisenhardt (1988)). The potential disruption effects of Schumpeterian shocks have been noted (Barney (1991a)) and Priem and Butler (2001) argued that the external environment has to be taken into account when considering the RBV, a view shared by Eisenhardt and Sull (2001). Barney (1986) expressed the view that to achieve above average returns, a firm must be better informed about the future value of the strategy or be lucky, and he recommend the use of environmental analysis and organizational analysis to improve forecasting the future. To aid this, Barney and Zajac (1994) provided a theoretical foundation on which to test the relationship between organizational resources, environmental context and firm performance. There are calls

for more research in this area (Henderson and Mitchell (1997); Das, Handfield et al. (2000)).

The reason for including the external environment as an independent variable in its own right was as a result of recent emergence of the concept of dynamic capabilities, as this field of work acknowledges the competitive landscape is shifting (Teece, Pisano et al. (1997)). Eisenhardt and Martin (2000) argued that the ability of a firm to reconfigure its resources is severely restricted in a fast moving environment, which may explain why some of the 'world-class' organizations have lost their competitive advantage over a relatively short space of time (Porter and Tanner (2003)). Specifically, Dervitsiotis (2004) predicted that Business Excellence is not expected to be effective in periods of turbulent times. He had earlier made the case for 'Sustainable Business Excellence', noting that a deterioration in the effectiveness of Business Excellence was signalled by limited available resources (Dervitsiotis (2003)).

2.4.1.4 Leadership excellence construct

The literature review identified that leadership is a critical success factor underpinning Business Excellence (For example, Saraph, Benson et al. (1989); Porter and Parker (1993); Youssef and Zairi (1995); Zairi (1995); Black and Porter (1996); Darling (1999); Edgeman and Scherer (1999); Savolainen (2000a); Dayton (2001); Guillen and Gonzalez (2001); Nabitz, Severens et al. (2001); Pannirselvam and Ferguson (2001); Bauer (2002); Perles (2002); Reiner (2002); EFQM (2003); Porter and Tanner (2003)). Leadership would therefore appear to be a suitable independent variable to select to measure the level of excellence in an organization. The literature review identified several studies on which this current work can build upon (e.g., Seddon (1998); Baxter and MacLeod (1999); Prabhu and Robson (2000); Kanji and Sá (2001a)).

It has been noted that the inability to identify the resources that lead to competitive advantage is one of the major limitations of the RBV of the firm (e.g., Thomas, Pollock et al. (1999); Priem and Butler (2001)). Focusing on one resource, leadership overcomes this limitation. There is also an interest in leadership from within the RVB literature. Of particular note, Zott (2003) called for work to investigate the effect of leadership on the dynamic capabilities of an organization.

2.4.1.5 Strategic capability construct

Whereas the leadership construct will examine an organization's level of excellence, this construct will consider its ability to develop strategic capability. The key factor will be ability of an organization to react to changes in the environment. In examining strategic

competences in hospitals, Douglas and Ryman (2003) reported that the value of the hospital's strategic competences was positively related to hospital financial performance. Tena, Llusar et al. (2001) have also reported a positive relationship between distinctive capabilities and performance.

A second factor will be the length of time it takes to build specific resources and capabilities. The benefits research revealed conflicting views on whether capability that leads to superior performance is built over time (Douglas and Judge (2001); Przasnyski and Tai (2002)) or is only evident once 'world-class' status is recognised (e.g., Hendricks and Singhal (2001a)). The former view is consistent with the majority of the RBV literature (e.g., Dierickx and Cool (1989); Grant (1991); Hall (1992)) although 'luck' can play a part (Barney (1986)) and under dynamic environmental conditions building strategic capability is difficult (Eisenhardt and Martin (2000)). Time is also a key component of Zott's model (Zott (2003)).

The third factor was the source of the capability. Many studies have examined organizations' perceptions of their sustained competitive advantage (e.g., Snow and Hrebiniak (1980b); Aaker (1989); Hall (1991); Hall (1992)). King and Zeihaml (2001) recognized that the level of consensus amongst managers on both an organization's strengths and weakness had positive effect on an organization's performance.

2.4.2 Construct definitions

Schwab (1999) advised that each construct should be accompanied with a construct domain definition and position in the nomological network (Schwab (1999)). A summary of these is given in Table 2-31.

Table 2-31: Construct definitions

Construct	Construct Domain Definition	Position in the Nomological Network	Key References
Performance	Level of performance of the organization against its own objectives and competition/ other agencies as perceived by senior management.	It is expected that the perception of the performance of the organization against its own objectives and that of others will be higher under certain conditions as defined in the other constructs.	Snow and Hrebiniak (1980b); Eisenhardt and Martin (2000); Hendricks and Singhal (2001a); Hendricks and Singhal (2001b); Przasnyski and Tai (2002); Zott (2003)
Organizational Context	Size of organization and industry type (whether public or private).	The relationships between Performance and Leadership Excellence, and Performance and Strategic Capability, will not be affected by the industry type.	Snow and Hrebiniak (1980b); Redman, Mathews et al. (1995); Easton and Jarrell (1998); Terziovski and Samson (1999); EFQM (1999a); PriceWaterhouseCoopers (2000); Przasnyski and Tai (2002)
		Size will have an impact on the relationship between Performance and Leadership Excellence.	Terziovski and Samson (1999); EFQM (1999a); Hendricks and Singhal (2000); Hendricks and Singhal (2001a); Hendricks and Singhal (2001b); Douglas and Ryman (2003)
Environment Dynamics	Dynamics of organization's external environment as perceived by senior management.	The relationships between Performance and Leadership Excellence, and Performance and Capability, will be lower in highly dynamic as opposed to moderate environments.	Teece, Pisano et al. (1997); Eisenhardt and Martin (2000); Galunic and Eisenhardt (2001); Zott (2003)

Construct	Construct Domain Definition	Position in the Nomological Network	Key References
Leadership Excellence	Measure of leadership that reflects the level of excellence of the organization such that the higher the level of leadership excellence the closer the organization is to being considered as 'world-class'.	There will be a positive relationship between the level of Leadership Excellence and Performance.	Dean and Bowen (1994); Zairi (1995); Baxter and MacLeod (1999); Petrick, Scherer et al. (1999); Higgs and Rowland (2000); Prabhu and Robson (2000); Nabit, Severens et al. (2001); Pannirselvam and Ferguson (2001); Kanji and Sá (2001a)
Strategic Capability	The ability to react to changes in the external environment and the time to develop organizational advantage as perceived by senior management.	There will be a positive relationship between the level of Strategic Capability and Performance. The sources of sustained organizational advantage will be developed over time.	Itami (1987); Dierickx and Cool (1989); Hall (1991); Klein, Edge et al. (1991); Barney (1991a); Hall (1992); Teece, Pisano et al. (1997); Eisenhardt and Martin (2000); Tena, Llusar et al. (2001); Zott (2003)

2.4.3 Hypotheses

Considering the model and construct definitions leads to a number of hypotheses that the research sought to find support for. These were:

H1: There will be a positive relationship between the level of Leadership Excellence and Performance (Dean and Bowen (1994); Zairi (1995); Petrick, Scherer et al. (1999); Yusof and Aspinwall (1999); Zahra (1999); EFQM (1999a); Das, Handfield et al. (2000); Higgs and Rowland (2000); Pannirselvam and Ferguson (2001); Kanji and Sá (2001a))

H1a: The strength of the relationship will be similar with private sector organizations and public sector organizations (Redman, Mathews et al. (1995); EFQM (1999a); PriceWaterhouseCoopers (2000))

H1b: The strength of the relationship will be higher with whole organizations than Business Units (NIST (2002b))

H1c: Size will have an impact on the strength of the relationship (Easton and Jarrell (1998); Terziovski and Samson (1999); Terziovski and Samson (2000); Hendricks and Singhal (2001a); Wiklund and Shepherd (2003))

H1d: Leadership Excellence will have a positive relationship with all stakeholder performance results (Miles, Snow et al. (1978); Wright, Dunford et al. (2001); EFQM (2003))

H1e: The strength of the relationship will be weaker in highly dynamic environments (Das, Handfield et al. (2000); Eisenhardt and Martin (2000); Fiol (2001); Leonard, McAdam et al. (2002); Dervitsiotis (2004); Jones (2004))

H2: There will be a positive relationship between Capability and Performance (Klein, Edge et al. (1991); Savolainen (1999); Zahra (1999); Rosenbloom (2000); Savolainen (2000a); Tena, Llusar et al. (2001); Douglas and Ryman (2003); Wiklund and Shepherd (2003))

H2a: The strength of the relationship will be weaker in highly dynamic environments (Barney and Zajac (1994); Henderson and Mitchell (1997); Das, Handfield et al. (2000); Eisenhardt and Martin (2000); Eisenhardt and Sull (2001); Fiol (2001))

H3: There will be a positive relationship between Leadership Excellence and Capability (Teece, Pisano et al. (1997); Ireland and Hitt (1999); Petrick, Scherer et al. (1999); Zahra (1999); Prahalad (2000); Zott (2003))

H4: Capability is developed over time (Dierickx and Cool (1989); Hendricks and Singhal (2000); Douglas and Judge (2001); Tena, Llusar et al. (2001); Hendricks and Singhal (2001a); Hendricks and Singhal (2001b); Przasnyski and Tai (2002); Sureshchandar, Rajendran et al. (2003); Warwood and Roberts (2004))

H5: Leadership Excellence has a positive relationship with capability, which leads to higher levels of performance (Tena, Llusar et al. (2001))

2.5 Chapter summary

This Chapter has seen a review of the literature from three perspectives: benefits of Business Excellence and the critical success factors, Business Excellence and leadership, and the resource-based view of the firm. Each perspective has contributed important insights to the research. The 'benefits' perspective showed that benefits could be derived from Business Excellence but the level of benefit and timing of benefit varied across the studies. Organization size and industry were noted to be key factors. The review of the resource-based-view of the firm led to the conclusion that was a good theoretical foundation on which to base Business Excellence research. A number of similarities were also drawn between the two subject areas, with it being noted that there was commonality between the structure of the model and the authors that have argued for particular sources of competitive advantage. The way that assets are developed also has some things in common with the philosophy of Business Excellence. This led to a review of the emerging dynamic capabilities literature.

The literature review allowed the definition of a research question that seeks to examine whether Business Excellence contributes to the success of an organization using the resource-based view of the firm as a basis of the research. Of particular interest are the conditions under which any advantages are observed. This has led to a research model with Performance as the dependent variable with Organizational Context, Environment Dynamics, Leadership Excellence and Strategic Capability as the four independent variables.

The research makes a contribution to a number of areas, including the Business Excellence and resource-based view of the firm bodies of knowledge. It also has a practical impact, as it will inform organizations on the conditions under which Business Excellence will be of value. We now move to Chapter 3, which outlines the research methodology that was used to conduct the research.

3 Methodology Chapter

Chapter 2 concluded with an initial research model, a number of relationships that were to be explored, and a number of hypotheses that were to be tested. In this Chapter the approach taken to conduct the research is described.

The Chapter commences with a discussion supporting the decision to adopt a positivist approach, which led to the research design used. A major section relates to the design of the data collection instrument given the challenge to include both public and private organizations in the research. Sampling was also a little complex given the need to cover both types of organization. One of the lessons taken from the study was that the data collection stage is far from a forgone conclusion. Several practical difficulties had to be overcome when conducting the research and it is hoped that these will be a lesson for others (see Tanner (2004b)). The Chapter concludes with a description of the data analysis plan, which forms the structure of the next Chapter.

3.1 Research philosophy

This section takes its structure from Remenyi, Williams et al. (1998: p45), where the research process from research question through the research strategy to research tactics is given. The research tactics are addressed in the next section.

The research question defined in Chapter 2 was:

Does adopting a Business Excellence philosophy lead to the development of the ability to withstand changes in the external environment for both private and public organizations?

As was seen in Chapter 2, research in the area of Business Excellence has included positivist (e.g., Hendricks and Singhal (1997); Das, Handfield et al. (2000); Link and Scott (2001); Kanji and Sá (2001a); Claver, Tari et al. (2003); Agus (2004); Mahadevappa and Kotreshwar (2004)), constructivist (e.g., ECforBE (1999); Savolainen (2000a); MacLeod and Baxter (2001); Powell (2001); Prajogo and Sohal (2004); Rao, Youssef et al. (2004)), and a mixture of the two approaches (e.g., Easton and Jarrell (1998); Bauer (2002)). Being exploratory in nature, both positivist and phenomenological research philosophies would be appropriate for the current work (Hair, Babin et al. (2003)).

The aspects of cost, time and the skill of researcher should be considered at the same time as the nature of the research question in deciding on the research strategy (Remenyi, Williams et al. (1998)). Cost was not a major consideration although, at the time the research was designed, the full cost of using a survey approach was not fully appreciated. A major consideration was time, as the research was conducted on a part-time basis and there was a desire to complete the work within a sensible timeframe. The skill of the researcher was not a major consideration with arguments for a scientific approach (due to previous doctoral research) being balanced with more recent experience conducting qualitative studies. On balance, the preference was to adopt a cross-sectional positivist approach.

Many authors (e.g., Gill and Johnson (1991); Trochim (2001); Saunders, Lewis et al. (2003)) distinguished between the two different approaches to research - deduction and induction. Deduction is concerned with the development of a conceptual and theoretical model prior to its testing through empirical observation. Whereas induction starts with observation of empirical data based upon which explanations and theories are constructed (Gill and Johnson (1991)). In a strict sense, both approaches lead to the use of different types of data. Deduction is concerned with quantitative data and induction with qualitative data (Gill and Johnson (1991); Saunders, Lewis et al. (2003)). Whether there is a major difference between the two is a matter of opinion. The differences lie more in the choice of research methods rather than any substantive differences at a metatheoretical level (Weber (2004)).

Creswell (1994), used by Saunders, Lewis et al. (2003: p90), suggested, that "*A topic on which there is a wealth of literature from which you can define a theoretical framework and a hypothesis lends itself more readily to the deductive approach*". In terms of induction, "*With research into a topic that is new and exciting much debate, and on which there is little existing literature, it may be more appropriate to generate data and analyze and reflect on what theoretical themes the data are suggesting*". The nature of the research propositions in this study pointed to the need for quantitative hypotheses testing. This is supported by the literature described later in this Chapter where it was noted that there were several instruments available for consideration for use in the study.

In choosing the particular approach the implications of the choice were in need of consideration. Table 3-1 outlines the implications of the choice.

Table 3-1: Contrasting implications of positivism and social constructionism

Feature	Positivism	Social Constructionism
Ontology (The observer)	Person (researcher) and reality are separate. The researcher must be independent	Person (researcher) and reality are inseparable (life-world). The researcher is part of what is being observed
Epistemology	Objective reality exists beyond the human mind	Knowledge of the world is intentionally constituted through a person's lived experience
Research object	Research object has inherent qualities that exist independently of the researcher	Research object is interpreted in light of meaning structure of person's (researcher's) lived experience
Human interests	Should be irrelevant	Are the main drivers of science
Method	Statistics, content analysis	Hermeneutics, phenomenology, etc.
Theory of truth (Explanations)	Correspondence theory of truth: One to one mapping between research statements and reality. Looking to demonstrate causality	Truth as intentional fulfilment: Interpretations of research object match lived experience of object. The aim is to increase general understanding of the situation
Research progresses through	Hypothesis and deductions	Gathering rich data from which ideas are induced
Concepts	Need to be operationalized so that they can be measured	Should incorporate stakeholder perspectives
Validity	Certainty: Data truly measures reality	Defensible knowledge claims
Reliability	Replicability: Research results can be reproduced	Interpretive awareness: Researchers recognise and address implications of their subjectivity
Units of analysis	Should be reduced to simplest terms	May include the complexity of 'whole' situations
Generalization through	Statistical probability	Theoretical abstraction
Sampling requires	Large numbers selected randomly	Small number of cases chosen for specific reasons

Adapted from: Easterby-Smith, Thorpe et al. (2002); Weber (2004)

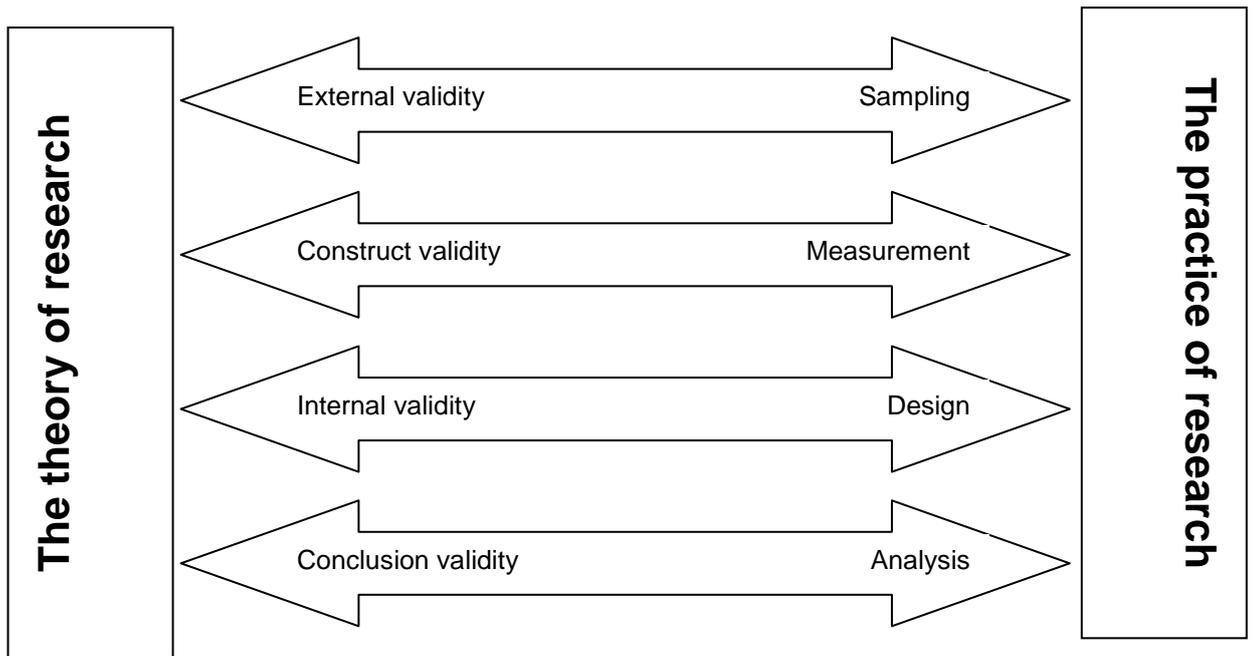
As noted by McGrath (1982) all research has to live with the pain of compromise. In the case of the survey approach chosen, the emphasis on generalization was traded against the concern for the context and measurement of behaviours. There have been calls for

research using a constructivist philosophy on the grounds that rich data is required in order to develop Business Excellence theory (Carr and Littman (1990); Leonard and McAdam (2001); Leonard and McAdam (2002b)), which has already been noted to be underdeveloped (Dale, Wu et al. (2001)). An additional argument is that, as Business Excellence is socially complex, objectivity cannot be preserved between researcher and object in Business Excellence research (Alvesson and Willmott (1996)). There have also been calls for constructivist strategy research (Mir and Watson (2000)).

Before discussing the approach to measures development and qualitative techniques used in the study, the decision to adopt a cross sectional approach as opposed to a longitudinal approach will be addressed. The literature review of the benefits of Business Excellence, critical success factors of Business Excellence and Leadership relating to Business Excellence noted an overwhelming number of cross-sectional studies compared to longitudinal studies. However, both Business Excellence (Leonard, McAdam et al. (2002); Leonard and McAdam (2002b)) and strategy researchers (Henderson and Mitchell (1997); Bowen and Wiersema (1999); Barney, Wright et al. (2001); Priem and Butler (2001)) have called for longitudinal studies. A cross-sectional approach was chosen for the current research as the focus was on examining the relationships in the research model. Between the years 1995 to 1997 over 85% of strategy research published in three A-class journals was cross-sectional in nature (Scandura and Williams (2000)). It is noted in section 6.1.4, which discusses potential future research, that longitudinal work could be used to examine the proposed causal relationships.

3.2 Approach to measures development

Stevens defined measurement as 'the assignment of numbers to objects or events according to rules' over 50 years ago (Carmines and Zeller (1979)). The trick is to make sure that the numbers actually mean something. Throughout the research the issues of validity and reliability are considered. Trochim (2001) provided a particularly useful way of defining the various categories of validity as shown in Figure 3-1. Each of the types of validity are further defined in Table 3-2. Whereas most authors broadly agree on the definitions of external, internal and statistical conclusion validity there is some debate over construct validity. The general view is that there are three types of construct validity: Construct, content and criterion related validity (Carmines and Zeller (1979); Churchill (1992); Scandura and Williams (2000)). All of these have been clustered under the term 'Construct validity' in the current work. In addition, the terms 'face validity' and 'content validity' have been clustered under 'Content validity' (Churchill (1992); Trochim (2001)).



Adapted from Trochim (2001: p viii)

Figure 3-1: A view of research

Bauer (2002) argued the field of measuring Business Excellence using quantitative instruments is underdeveloped, which could suggest an inductive approach. The complexity and challenge of establishing construct validity for a new measures has also been highlighted (Cronbach and Meehl (1955)). As a consequence the instruments used in this study are derived from other fields, such as that of strategy and leadership, to avoid this issue (Dean and Bowen (1994); Ladik (1999); Dale, Wu et al. (2001)). It includes both public and private sector organizations and statistical probability was chosen as an appropriate approach to allow generalization to both the two categories of organization and the population as a whole. Although there may be some subtle differences in the interpretation of excellence for both public and private sector organizations, the actual concepts are equally applicable to both (NIST (2002a); EFQM (2003)).

Several authors warn of the danger of using borrowed scales. Engelland, Alford et al. (1999) advised that domain definitions must be appropriate, experts should be used to improve content validity, scales developed before 1989 should be avoided due to validity and reliability concerns, and scales should only be subject to 'modest' refinement. Scales that do not report on validity and reliability should also be avoided (Churchill and Peter (1984); Peter and Churchill (1986); Engelland, Alford et al. (1999)) and care should be taken as construct validity may not be transferable between different situations (Peter and Churchill (1986)).

Table 3-2: Types of validity and reliability

Type	Description
External validity	<ul style="list-style-type: none"> External validity refers to the extent to which research findings can be generalized to other populations (Cook and Campbell (1979); Gill and Johnson (1991); Scandura and Williams (2000)).
Construct validity	<p><u>Construct validity:</u></p> <ul style="list-style-type: none"> Construct validity refers to the extent to which a particular measure relates to other measures consistent with theoretically developed hypotheses concerning the concepts measured (Carmines and Zeller (1979); Scandura and Williams (2000)). It is concerned with what the measure is measuring (Churchill (1992)). <i>'The degree of construct validity is a subjective judgment or inference which cannot be proven either through logic or empirical research'</i> (Peter and Churchill (1986: p2)). <p><u>Content validity:</u></p> <ul style="list-style-type: none"> <i>Face validity</i> - "Assumed" validity by people (Weber (1985)). <i>Content validity</i> - Content validity concerns the degree to which a measurement mirrors a particular domain of content (Carmines and Zeller (1979)). It focuses on the adequacy with which the domain of the characteristic is defined by the measure (Churchill (1992)). <p><u>Criterion-related validity</u></p> <ul style="list-style-type: none"> Have both <i>predictive</i> validity (forecasts the future) and <i>concurrent</i> validity (relates to the present). A key issue is that it is not related to theory (Carmines and Zeller (1979)). Most work refers just to predictive validity. Three types of predictive capability (Peter and Churchill (1986)): <ol style="list-style-type: none"> <i>Convergent</i> validity measures the degree of correlation between two measures. Relates to the level of systematic error. <i>Discriminate</i> validity is the primary measure as it concerns the degree to which a measure is unique. It is the only type that has low correlations. <i>Nomological</i> validity sometimes described as 'lawlike' as it predicts the pattern of relationships.
Internal validity	Internal validity is regarded as the approximate truth of cause-effect or causal relationships. (Gill and Johnson (1991); Scandura and Williams (2000); Trochim (2001)).
Statistical conclusion validity	Statistical conclusion validity refers to the possibility of the researcher drawing false conclusions about the presumed relationship between independent and dependent variables (Cook and Campbell (1979); Smith (1981); Scandura and Williams (2000)).
Reliability	Reliability is concerned with the degree of consistency of the results (Carmines and Zeller (1979); Peter and Churchill (1986); Gill and Johnson (1991)).

Adapted from Scandura and Williams (2000); Trochim (2001); Bauer (2002)

3.3 Use of qualitative techniques

Two types of qualitative techniques were used to collect data in the current research: semi-structured interviews and focus groups. The interviews followed the guidelines given by other researchers (e.g., Fontana and Frey (2000); Huberman and Miles (2002); Saunders, Lewis et al. (2003)). As noted by several authors (e.g., Jick (1979); Bickman and Rog (1997); Scandura and Williams (2000)), triangulation enhances validity. With the current research focus groups were used to improve the content validity of the questionnaire (Carmines and Zeller (1979); Peter and Churchill (1986); Churchill (1992); Scandura and Williams (2000); Churchill and Iacobucci (2002); Easterby-Smith, Thorpe et al. (2002)) as well as to validate the interpretations from the statistical data and models.

Group interviews are essentially a qualitative data collection technique that relies on the systematic questioning of several individuals simultaneously in a formal or informal setting (Fontana and Frey (2000)). As such they are somewhere between formal and informal interviewing. During the early 1940s Merton and Lazarsfield introduced the method of group interviewing into the social sciences (Madriz (2000)). As cited in Fontana and Frey (2000), Merton, Fiske et al. (1950) coined the term 'focus group' to apply to a situation in which the researcher asks specific questions about a topic after having already completed considerable research. They are particularly valuable in the process of triangulation (Cicourel (1974)). Frey and Fontana (1991) described a variety of Group Interview situations as summarized in Table 3-3.

Authors have noted that group interviews have a number of advantages, such as low cost, flexibility and they generate rich data (Fontana and Frey (2000)). They also have a number of problems, such as the need to ensure that all participants contribute to the discussion and the need to ensure that all the data is collected accurately (Saunders, Lewis et al. (2003)). To protect against these problems a number of actions were taken. Firstly, the information was presented in a structured way at the start of the session (Frey and Fontana (1991)). After presenting the information, pre-designed questions were asked in order to solicit a response or a specific brief was given to the focus group (Madriz (2000)). Secondly, use was made of targeted questions to get a contribution from all participants who were not actively participating, such as 'What do you think Chris?' (Saunders, Lewis et al. (2003)).

Thirdly, the focus groups were conducted in a relaxed setting (Saunders, Lewis et al. (2003)) For example, when conducting the focus groups the room was cleared wherever

possible so participants could interact freely. Finally, action was taken to ensure that the feedback was captured accurately (Saunders, Lewis et al. (2003)). This was achieved either by appointing a scribe or, when this was not possible, collecting the feedback through a syndicate session.

Table 3-3: Types of group interviews and dimensions

Type	Setting	Role of Interviewer	Question Format	Purpose
Focus Group	Formal-preset	Directive	Structured	Exploratory pre-test
Brainstorming	Formal or informal	Nondirective	Very structured	Exploratory
Nominal/ Delphi	Formal	Directive	Structured	Pre-test exploratory
Field, Natural	Informal spontaneous	Moderately directive	Very structured	Exploratory phenomenological
Field, Formal	Preset, but field	Somewhat directive	Semi structured	Phenomenological

Adapted from Frey and Fontana (1991)

In this thesis the term focus group has been chosen as opposed to group interview, as this accurately reflects the purpose of their use

3.4 Research design

'A research design provides the basic directions or 'recipe' for carrying out the project' (Hair, Babin et al. (2003: p57))). In this section the overall research design stages have been described and this is shown in Figure 3-2.

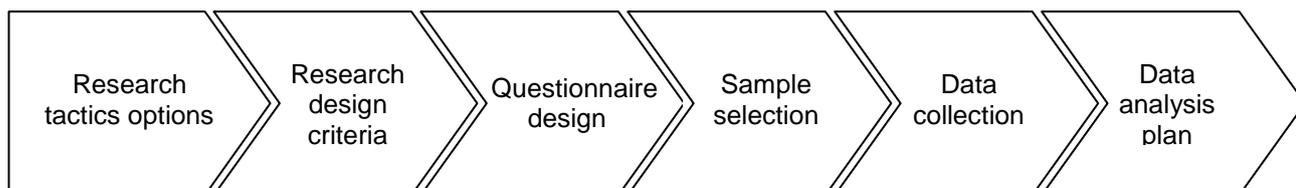


Figure 3-2: Research methodology followed

A positivist approach was selected for the research, but this still presents a number of options for the research tactics (e.g., Denscombe (1998); Remenyi, Williams et al. (1998); Easterby-Smith, Thorpe et al. (2002); Saunders, Lewis et al. (2003)). The final choice of using a survey was made considering research design criteria, which were derived from the literature review and from research methodology text. Table 3-4 provides a summary of these criteria.

Table 3-4: Research design criteria

Criteria	References	Response
Complexity of data required low	Gill and Johnson (1991: 979); Saunders, Lewis et al. (2003).	May use a remote survey as opposed to the need to conduct interviews.
Increase probability of getting a contribution	Stage 1 Thesis Critique (Tanner (2002)).	Design 'symmetrical' research and cover more than one option in the questionnaire.
Limited research on public sector organizations	Porter and Tanner (2003).	Include both public and private organizations in the sample.
Avoid bias through using a membership list sample	Porter and Parker (1993); Bauer (2002).	Work from commercial databases not award databases and membership lists.
Differences in responses depending on level of respondent in organization with self-reported scales – referred to as the 'Key informant problem'	Downey, Hellriegel et al. (1975); Downey and Slocum (1975); Huber and Power (1985); Bourgeois and Eisenhardt (1988); James and Hatton (1995); Dess, Lumpkin et al. (1997); Curkovic, Melnyk et al. (2000); Kanji and Sá (2001a).	Target senior managers and include a qualifying question.
Ensure a range of environmentally dynamic conditions	Snow and Hrebiniak (1980b); Bourgeois and Eisenhardt (1988); Lindgren (2001).	Select sample from various industries, including private and public.
Different level of benefits between business units and whole organizations	NIST (2002b).	Target business units and record whole organization responses.

Criteria	References	Response
Different results from large and small organizations	Terziovski and Samson (1999); Hendricks and Singhal (2001a); Hendricks and Singhal (2001b); Douglas and Ryman (2003).	Include size as a variable.
Maximize reliability and validity of instruments	Churchill (1979); Hair, Anderson et al. (1998); Bowd (2002).	Base data collection on previously used instruments.
	Jick (1979); Easterby-Smith, Thorpe et al. (2002).	Use focus groups to improve content validity of instruments.

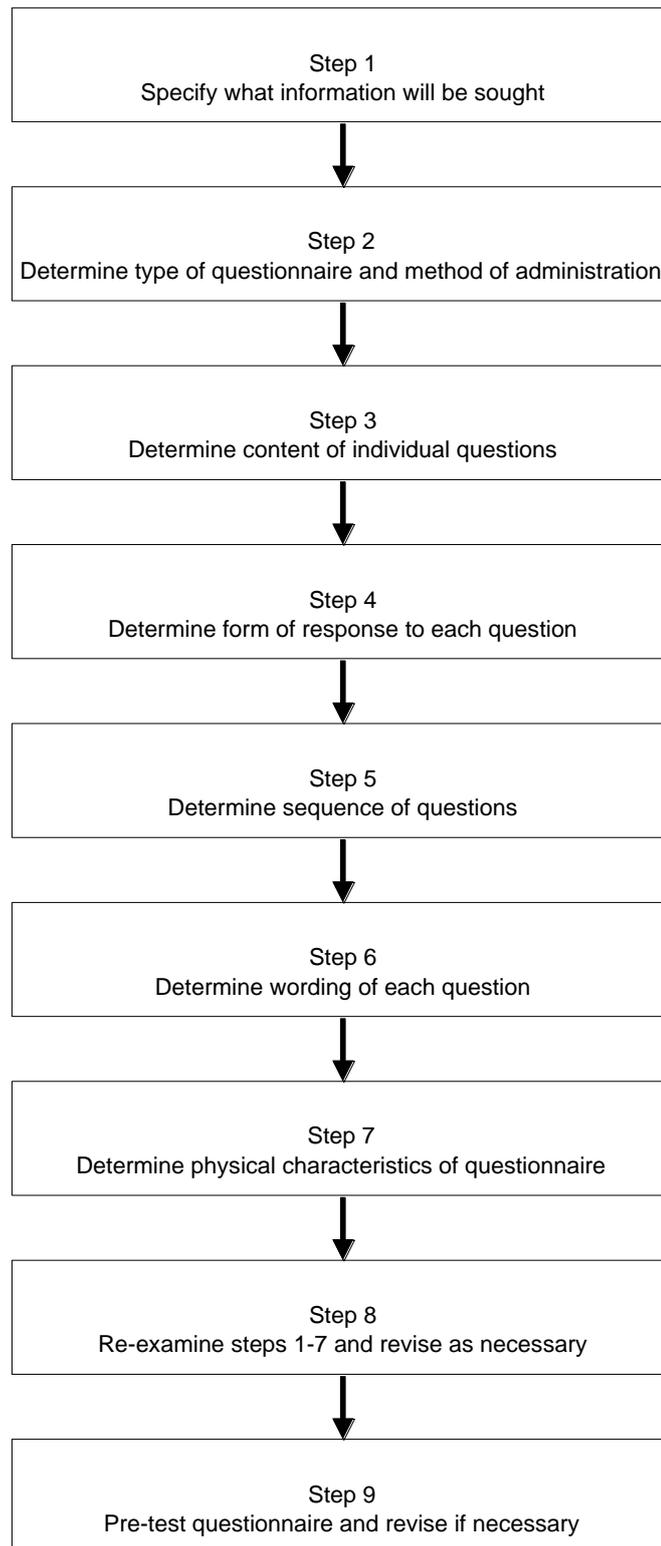
Of the four research tactics proposed by Easterby-Smith, Thorpe et al. (2002: p57) a survey was chosen from the detached positivist options. A postal survey had the ability to collect data from a wide range of organizations in a cost-effective manner.

This section has demonstrated the process used to select a positivist approach as the research paradigm and a postal survey as the research tactic. It has also listed a number of criteria that were defined prior to the start of the detailed design. In the next sections the major stages of the research methodology: Questionnaire design, Sample selection and Data collection are discussed.

3.5 Questionnaire design

The development of measures falls into three basic stages. Stage 1 is item development, or the generation of individual items. Stage 2 is scale development, or the manner in which items are combined to form scales. Stage 3 is scale evaluation, or the psychometric examination of the new measure (Schwab (1980) cited in Hinkin (1995)). This section covers stages 1, with stages 2 and 3 being discussed in the next Chapter. A meta-analysis on previous research concluded that the measures development process may not have a major effect on reliability, but it may have on validity (Churchill and Peter (1984)).

Guidance was taken from Churchill and Iacobucci (2002: p315)) who suggested nine steps for questionnaire design (Figure 3-3). Churchill and Iacobucci (2002) stressed the steps were not sequential and that a researcher should use an iterative process. This was, in fact, found to be the case in practice and the questionnaire was subjected to several review cycles. For clarity in this section, the actions taken under each of the steps have been described. Step 8 has been used to document the reviews that were performed and the reader should note that these specific reviews might have taken place during earlier steps.



Adapted from: Churchill and Iacobucci (2002)

Figure 3-3: Churchill's questionnaire design steps

The following sub-sections describe the approach that was taken in line with Churchill's approach.

3.5.1 Step 1: Specify what information will be sought

The information sought was derived directly from the research model defined in Chapter

2. The five constructs to be operationalized were:

1. Organizational Context
2. Environment Dynamics
3. Leadership Excellence
4. Strategic Capability
5. Performance

3.5.2 Step 2: Type of questionnaire and method of administration

Churchill and Iacobucci (2002) referred to the level of disguise, structure of the questionnaire and method of administration noting that these factors are interrelated. In the current study there was no need for the questionnaire to be disguised, but to increase the applicability of the questionnaire to all organizations the use of 'Business Excellence' jargon was avoided, as was the assumption that the target organizations knew what Business Excellence was.

A structured questionnaire was administered remotely. As noted below the use of open questions such as 'please give me your name' proved to be a challenge for some respondents, so a simple 'tick-box' was used wherever possible. This approach was suitable for the data sought (Gill and Johnson (2002); Saunders, Lewis et al. (2003)).

Some thought was given on whether to administer the questionnaire through a website. Personal preference dictated that this would not be practical due to the length of the questionnaire. Feedback from the pilots confirmed this decision. In some cases the questionnaire was distributed by e-mail. This was avoided as much as possible due to the quality issues described in the data collection section below and due to the difficulties in accounting for the responses.

3.5.3 Step 3: Determine content of individual questions

This section describes the instruments that were selected as a basis for the questionnaire. Due to the need to use scales that suited both public and private sectors, and the fact that most of the literature pertains to the private sector application, Step 5 (Determine the wording of the question), was a very significant step in the process. At this stage the changes made are not described but the reasons for selecting the instruments for modifications are stated. Although different to the final sequence on the questionnaire, the constructs have been described in the order of the research model.

First the Organizational Context is described followed by Environmental Dynamics, Leadership Excellence, Strategic Capability and, finally, Performance. When scales have been borrowed it is good practice to report on any changes (Schriesheim, Powers et al. (1993)). This has been kept in mind when describing the questionnaire development process and, so that direct comparisons may be made, the original instruments are provided in the appendices.

3.5.3.1 Organizational context

There were a number of factors identified that were considered important to the study. Firstly, the size of the organization has been shown to have an effect on the level of benefit achieved from Business Excellence (Hendricks and Singhal (2001a)). Organizational size is measured in one of two ways: Capacity or Scale of Operations, and each have their problems (Dobrev and Carroll (2003)). In the current study, size was captured in terms of number of people and turnover/ budget, these being used by other researchers (e.g., Hendricks and Singhal (2001a); Bauer (2002); Beheshti and Lollar (2003); Baidoun (2004)). Whether business unit/ division or whole organization was another factor (NIST (2002b)).

At the highest level the analysis considered two types of organization – public and private sector organizations. Which category the respondent fell into was important, but even public sector has different types, e.g., local councils and central government, which are subjected to different environments. A simple industry classification code was used based on the consultancy outlook reports (Abbott (2003)) to capture the industry of the respondent, as this was considered to be simpler than SIC coding and more applicable to the public sector. There was also the desire, had response rates permitted, to analyse the results by organizational type, for example, for public sector by local government, central government, Police, etc, as an added bonus. This was not possible, however, within the scope of the current work.

The final factor grouped together under the 'Organizational Context' heading was the level of the respondent. As discussed above, there is evidence that perceptions will be effected by the role of the respondent in the organization. The initial target for the survey was the most senior manager so the level of the respondent in their organization was recorded.

3.5.3.2 Environmental Dynamics

Environmental dynamism has been defined as the rate and the instability of environmental change (Simerly and Mingfang (2000)). There is no widely held consensus on how organizational environment should be assessed (Lenz (1980)). From the literature two main methods were noted for considering the dynamics of the industry. These are expert selection of the industries to study and self-reported perceptions of the environment. Examples of the use of these methods are given in Table 3-5. The self-reporting approach was found to be most popular. It was also noted that the instruments were often customized for the industry.

In considering the options, the Hart and Banbury (1994) approach was chosen for this study. Apart from being more recent than the Ireland, Hitt et al. (1987) instrument, the Hart and Banbury approach has been used by several other researchers and it was considered better for conversion for use in a public sector environment. The original Hart and Banbury instrument as used by Lindgren (2001) is given in Appendix 2.1: Competitive environment/turbulence instrument.

Table 3-5: Methods of considering environmental dynamics

Method	Instrument	Items	Reliability	References
Expert selection	Environmental uncertainty		Not applicable	Snow and Hrebiniak (1980b); Bourgeois and Eisenhardt (1988); Hough and White (2003).
Self-reported	Perceived environmental uncertainty	25 in 6 dimensions. 7 point Likert.	0.60 – 0.89	Ireland, Hitt et al. (1987) based on Miles, Snow et al. (1978).
	Competitive environment/Turbulence	Complexity (2 items), munificence (2 items) & dynamism (8 items) 7 pt Likert for 10 items, 5 pt for munificence items.	0.63-0.67	Hart and Banbury (1994) based on Dess and Beard (1984). Used by Lindgren (2001); Baum and Wally (2003); Wilberg (2003).
	Environmental volatility	Simple/ complex, static/ dynamic classification.	Not given	Bourgeois (1985) based on Duncan (1972).

Method	Instrument	Items	Reliability	References
Self-reported continued	Environmental uncertainty	16-item scale developed specifically for manufacturing in Taiwan. 3-factors: Customer uncertainty, Supply uncertainty and Competitor uncertainty.	0.68-0.72	Chang, Lin et al. (2002) based on Duncan (1972).
	Environmental dynamism	3-item on a 1 to 7 Likert scale.	0.79	Garg, Walters et al. (2003).
	Market-related dynamism	Major changes in market-related aspects of the business environment.	Not given	Homberg, Krohmer et al. (1999).
	Environment	10-item scale based on goal attainment developed for a savings and loans organization.	Not given	Lenz (1980).
	Level of domestic and competition from Japan	3-point categoric scale.	Not applicable	Das, Handfield et al. (2000).

3.5.3.3 Leadership Excellence

In discussing this construct it is worth remembering its purpose. Within the scope of the study the decision had been made to measure the level of 'Business Excellence' through a leadership based construct. Alternative decisions included measuring excellence through one of several other criteria, such as policy and strategy, people, partnership and resources, processes, or a combination of these (assuming that the EFQM version of Business Excellence was being adopted). But the study sought not to be restricted by the use of a specific excellence model and the literature review identified that Leadership was the critical success factor. Traditional leadership instruments such as MLQ and LPI measure the leader as an individual and not leadership in the organization, nor were they linked with the level of Business Excellence. So, in summary, Leadership was being measured as a proxy for Business Excellence, and a relationship between the two was one of the requirements of the instruments selected. A search of the literature revealed five potential leadership instruments and these are summarized in Table 3-6.

Table 3-6: Potential leadership instruments

Instrument	Items	Reliability/ alpha	References
EXCEL	8 attributes 16 items. 7 point Likert scale.	0.89	Sharma, Netemeyer et al. (1990) used by Caruana, Pitt et al. (1994).
PILOT	4 factors 60 items. 5 point scale leads to a 1 of 6 classification.	Not given	Prabhu and Robson (2000).
Leadership Excellence	6 factors 18 items. 10 point scale.	0.74 – 0.98	Kanji (2002) as used by Kanji and Sá (2001a) and Moura e Sa and Kanji (2003).
Leadership	1 factor covering leadership with 5 items. 7 point scale.	0.76	Claver, Tari et al. (2003) as used by Claver and Tari (2003).
Leadership and consistency of purpose	1 factor 1 item at 'Core concept' level. 24 potential items at 'Areas to address' level.	Not used	EFQM (1999a).

The Kanji (2002) Leadership Excellence instrument was chosen for a number of reasons. Both the EFQM (1999a) and Claver, Tari et al. (2003) instruments were unused at the time that the methodology was designed and, in fact, the EFQM (1999a) would require significant development. EXCEL is the most proven instrument but it measures 'Excellence' in a Peters and Waterman sense and not a 'Business Excellence' sense, and it has been used as a dependent variable to measure performance (e.g., Lindgren (2001); Wilberg (2003)). In addition, the linkage between the instrument and 'Business Excellence' in the context of this study could not be made. PILOT looked promising, as a level of Business Excellence classification could be derived from its use, but the instrument had the disadvantages that it was not in the public domain and it was designed specifically for a manufacturing environment.

Use of the Kanji and Sa's Leadership Excellence instrument had several advantages. Firstly, it had been designed for use in both the public and private sectors and had been used in several studies. Secondly, an early version of the instrument was available in the public domain, although this version required some modification to remove some basic design faults in the instrument, such as the use of double meaning questions such as '*Leaders develop shared meanings **and** interpretations of reality*' (Churchill and Iacobucci (2002); Hair, Babin et al. (2003)). It has since been discovered that the original instrument was used in Portuguese (Sá (2004)). The English version of the original instrument is given in Appendix 2.2: Kanji's Leadership Excellence instrument. Thirdly, the items in the questionnaire were found to be supported by the theory of other researchers (Table 3-7).

Table 3-7: Support for the content of the Leadership Excellence instrument

Areas Covered	Reference
Vision, support, challenge, attitude, behaviours, performance.	Jones (2004).
Commitment to and involvement in continuous improvement, establishing a culture of continuous improvement, focusing on people, learning.	Kaye and Anderson (1999).
Attention through vision, meaning through communication, trust through positioning, confidence through respect.	Bennis and Nanus (1985) as cited by Darling (1999).
Actively communicate a quality commitment to the employees, employees are encouraged to help implement changes in the organization, managers and supervisors allow employees to make their own decisions, managers and supervisors motivate their employees and help them perform at a high level in their tasks.	Claver, Tari et al. (2003).
Commitment to Business Excellence, allocation of resources, viewing employees as valuable and long-term, senior managers being dynamic, acting as friends. Philosophers and guides, evaluating the effectiveness of Business Excellence, providing a clear vision (based on both a customer and employee focus), making decisions on the basis of the vision, taking into account the external environment, being prepared for change, emphasis on quality rather than cost.	Sureshchandar, Rajendran et al. (2003).
Creating a learning environment for employees, creating value for the stakeholder, using continuous improvement, seeking innovation through performance measurement, top management positively relating to organization performance.	Su, Li et al. (2003).

3.5.3.4 Strategic Capability

How researchers measure resources and capabilities varies extensively (Hoopes, Madsen et al. (2003)). For example, as measures studies have used patent data (e.g., Henderson and Cockburn, 1994), survey responses (e.g., McGrath, MacMil and Venkataraman, 1995; McEvily and Zaheer, 1999), firm experience, market share (e.g., Levinthal and Myatt, 1994), human capital (e.g., Majoor and van Witteloostuijn, 1996;

Kraatz and Zajac, 2001), investments in functional areas (e.g., Helfat, 1994; Yeoh and Roth, 1999), property rights (e.g., Miller and Shamsie, 1996), and reputation (e.g., Kraatz and Zajac, 2001). In the current study three aspects of Strategic Capability are considered. These are path-dependency, sources of organizational advantage and level of strategic capability. Each will be discussed in turn.

Path dependency

Research into the benefits of Excellence has shown that some authors concluded superior performance is developed over time (Douglas and Judge (2001); Tena, Llusar et al. (2001); Przasnyski and Tai (2002); Sureshchandar, Rajendran et al. (2003); Warwood and Roberts (2004)) and some on the event of winning an award (Hendricks and Singhal (2001b)). The former view is supported by Hall (Hall (1991); Hall (1992)) in his research into intangible assets. Time to develop the capability was therefore an important aspect.

Two different approaches were considered as a measure of time. The first was that developed by Hall (Hall (1991); Hall (1992)) where the perception of 'Replacement periods' and 'Lead over the competition' were measured. An adaptation of this approach was considered suitable for this study. The other approach identified, Competitive advantage period (e.g., Mills and Dahloff (2003)), was not considered suitable due to its reliance on financial information that would have been difficult to obtain for both business units and public sector organizations.

Sources of organizational advantage

A composite list of potential assets and capabilities was generated from the literature (Table 3-8). The views of Snow and Hrebiniak (1980b) were dismissed as these were considered to be functions and not assets and capabilities. The Hall (1991) list was dismissed in favour of the Hall (1992) list, which was more extensive. The remaining assets and capabilities were mapped against one of the Business Excellence models, the EFQM Excellence Model[®], and a number selected on the basis of their fit with the model. The work of Hall was also considered, the logic being that as the Hall methodology was to be used, a solid basis would be Hall's own work, as a direct comparison could be drawn between Hall's study and the results of the current study. The analysis is provided in Table 3-9, which includes the classification of Assets (A) and Capabilities (C), using the definitions that an asset is something that an organization possesses and a capability is something that an organization does better than its competitors. The final list as used is given in Appendix 2.3: List of assets and capabilities.

Level of strategic capability

Strategic Capability is defined as an organization's ability to adapt to changes in its external environment. This ability has also been referred to as 'Strategic Flexibility' (Hamel, Prahalad et al. (1998); Lindgren (2001)). The concept builds on the idea of Savolainen (2000a), who proposed that an embedded quality ideology led to an organization being more adaptable to change.

The 'Strategic response capability' instrument used by Lindgren (2001), which was based on that developed by Bettis and Hitt (1995), was identified for use in this study. This was a 2 factor, 17 items 7-point scale with a reported alpha of 0.82-0.89. This scale as used by Lindgren (2001) is given in Appendix 2.4: Strategic response capability instrument.

Table 3-8: Potential assets and capabilities from the literature

Snow and Hrebiniak (1980b)	Aaker (1989)	Hall (1991)	Hall (1992)	Teece, Pisano et al. (1997)	Tena, Llusar et al. (2001)	Larréché (2002)
General management Financial management Production Marketing/ Selling Product research and development Distribution Production Personnel Applied engineering Basic engineering Legal affairs	Reputation for quality Customer service/ product support Name recognition/ High profile Retain good management and engineering staff Low cost production Financial resources Customer orientation/ Feedback/ Market research Product line breadth Technical superiority Installed base of satisfied customers Segmentation focus Product characteristics/ differentiation Continuing product innovation Market share Size/ location/ distribution Low price/ high value offering Knowledge of	Company reputation Employee know-how Product reputation Networks Specialist physical resources Supplier know-how Intellectual property rights Contracts Distributor know-how Trade secrets Public knowledge	Company reputation Product reputation Employee know-how Culture Networks Specialist physical resources Databases Supplier know-how Distributor know-how Public knowledge Contracts Intellectual property rights Trade secrets	Technological Complementary, such as an investment in a sales force or brake drums for brake pads Financial Reputation Structural Institutional Market (structure) assets Organizational boundaries (the level of integration)	Managerial competencies Employee know-how External co-operation skills Creation of a collective mind Organizational commitment Stimulation of the organizational learning process Speed and flexibility in the design of new products or services Reputation	Mission and vision Customer orientation Corporate culture Organization and systems Planning and intelligence Market strategy Human resources Technical resources Innovation Marketing operations Performance – positive results from actions International

	business Pioneer/ Early entrant in industry Operations adaptable to customers Effective sales force Overall marketing skills Shared vision/ culture Strategic goals Powerful well-known parent Location Effective advertising/ image Enterprising/ entrepreneurial Good co-ordination Engineering research development Short-term planning Good distributor relations					
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Table 3-9: Analysis of assets and capabilities

Model Criterion	Aaker (1989)	Hall (1992)	Teece, Pisano et al. (1997)	Tena, Llusar et al. (2001)	Larréché (2002).	Selected Assets (A) and Capabilities (C)
Leadership	Operations adaptable to customers Shared vision/ culture Enterprising/ entrepreneurial Good co-ordination Customer orientation (culture)	Culture Public knowledge		External co-operation skills Creation of a collective mind Organizational commitment Stimulation of the organizational learning process	Mission and vision Customer orientation Corporate culture Organization and systems	Culture (C) Public knowledge (A) Leadership (C) Organization & Structure (A) Systems (A) Co-ordination and co-operation (C) Learning (C)
Policy & strategy	Customer orientation/ Feedback/ Market research Segmentation focus Knowledge of business Strategic goals Short-term planning		Market (structure) assets Institutional		Planning and intelligence Market strategy	Customer focus (C) Capture customer information (C)

Model Criterion	Aaker (1989)	Hall (1992)	Teece, Pisano et al. (1997)	Tena, Llusar et al. (2001)	Larréché (2002).	Selected Assets (A) and Capabilities (C)
People	Retain good management and engineering staff Effective sales force Overall marketing skills Enterprising/ entrepreneurial	Employee know-how	Structural (?)	Managerial competencies Employee know-how	Human resources	Employee know-how (A) Staff skills and competences (A)
Partnership and resources	Financial resources Technical superiority Continuing product innovation Enterprising/ entrepreneurial Engineering research development Good distributor relations	Networks Specialist physical resources Databases Supplier know-how Distributor know-how Intellectual property rights Trade secrets	Technological Complementary, such as an investment in a sales force or brake drums for brake pads Financial		Technical resources Innovation	Networks (A) Specialist physical resources (A) Databases (A) Supplier know-how (A) Distributor know-how (A) Intellectual property rights (A) Trade secrets (A) Finance (A)

Model Criterion	Aaker (1989)	Hall (1992)	Teece, Pisano et al. (1997)	Tena, Llusar et al. (2001)	Larréché (2002).	Selected Assets (A) and Capabilities (C)
Processes	Customer service/ product support Low cost production Product line breadth Product characteristics/ differentiation Effective sales force Effective advertising/ image		Organizational boundaries (the level of integration)	Speed and flexibility in the design of new products or services Continuous improvement	Marketing operations	Customer service/ product support (C) Low cost production (C) Speed and flexibility in the design of new products or services (C) Continuous improvement (C)
Results	Reputation for quality Name recognition/ High profile Installed base of satisfied customers Market share	Company reputation Product reputation Contracts	Reputation	Reputation	Performance – positive results from actions	Reputation (A) Product reputation (A) Contracts/ installed customer base (A)

Model Criterion	Aaker (1989)	Hall (1992)	Teece, Pisano et al. (1997)	Tena, Llusar et al. (2001)	Larréché (2002).	Selected Assets (A) and Capabilities (C)
Other	Size/ location/ distribution Low price/ high value offering Pioneer/ Early entrant in industry Powerful well-known parent Location				International	

3.5.3.5 Performance

Performance is a common dependent variable in strategy research but it is one that raises a number of concerns, such as instability of performance advantage, oversimplification using simple models in a complex world and retrospect recall (March and Sutton (1997)). The mix of appropriate performance measures has even been found to vary according to industry and size of business (Maltz, Shenhar et al. (2003)). Venkatraman and Ramanujam (1986) recognized that different measures are required for different studies and defined three domains: financial, financial and operational performance and organizational effectiveness. Fitzgerald, Johnson et al. (1991), as cited by Neely, Mills et al. (2000), suggested a measurement framework with 'Results' and 'Determinants'. Results included financial performance and competitiveness, and determinants quality, flexibility, resource utilisation and innovation.

For a research study focusing on Business Excellence, an approach based on more than just financial measures and one that considers multiple stakeholders is most appropriate. This is despite the observation that effectiveness is often said to be important but the concept is not well defined (Steers (1975)).

Given that public sector organizations were included in the sample, a perception-based approach negating the use of reported financials was also appropriate. Perceptions are more accurate than archival data in any case (Miller and Cardinal (1994)). A number of potential instruments were identified for use in the study and these are shown in Table 3-10.

Table 3-10: Potential instruments to measure performance

Instrument	Items	Reliability/ alpha	References
Financial Measures (For example, Profitability)	Ratio of total income to total assets	Not applicable (not self-reported)	Snow and Hrebiniak (1980b)
Performance	5 factors 13 items 7 point scale	0.69-0.75	Hart and Banbury (1994) as used by Lindgren (2001)
Firm Performance	Subjective and objective data taken at various levels of the organization	0.84-0.87	Dess and Robinson (1984)
Business Excellence	1 factor 7 items 10 point scale	0.89	Kanji (2002)
Quality Management Results	4 factors 17 items 7 point scale	0.37-0.81	Claver, Tari et al. (2003)
Dynamic Multi- dimensional Performance Framework	5 dimensions: Financial, Market/ customer, Process, People development and Future performance	Not available	Maltz, Shenhar et al. (2003)

The use of financial data from either primary or secondary sources was considered inappropriate and the Dynamic Multi-dimensional Performance Framework was considered to be a consultancy tool. So the choice of instrument was between Hart and Banbury's, Kanji's, and Claver, Tari et al's, but each had its problems. Ideally the instrument would measure one factor for each stakeholder grouping. Only the latter instrument did this but it was an unproven scale with a very low alpha on the employee

indicators factor. Neither the Hart and Banbury or the Kanji instrument considered all the potential stakeholders. Although the former had a more established track record, it was designed for private sector use and only had 13 items covering 5 factors, which raised a reliability concern given the advice that at least three-factor scales should be used (Peterson (1994); Foreman and Money (2004)). It was therefore decided to generate a new scale through the combination of all the three instruments. Appendix 2.5: The performance scale captures the details of the individual instruments.

In the study questionnaire, performance was categorized into four factors, each capturing the perspective of a stakeholder group, these being customer, people, society and organization. Note was taken of the work of Campbell (1973) (cited in Steers (1975)) who identified 19 different univariate variables, which included in the top 5 'Overall performance', measured by employee or supervisory ratings and 'Employee satisfaction', measured by self-reported questionnaires. 'Productivity', measured typically with actual output data, 'Profit, or rate of return', based on accounting data, and 'Withdrawal', based on archival turnover and absenteeism data, were also in the top 5 and, although measured using self-reported scales, these areas were covered in the current research.

3.5.3.6 Summary

This section has discussed the selection of the base instruments for use in the study.

The next step is to determine the form of response for each of the questions, but before moving forward, Table 3-11 summarizes the original instruments selected for each construct, details of which are given in the appendices to aid reproducibility (Schriesheim, Powers et al. (1993)).

Table 3-11: Base instruments for each construct

Construct	Instrument Selected	Main References
Organizational Context	N/A	Douglas and Judge (2001); Hendricks and Singhal (2001a); Przasnyski and Tai (2002); NIST (2002b); Abbott (2003)
Environment Dynamics	Competitive environment/Turbulence instrument	Hart and Banbury (1994); Lindgren (2001)
Leadership Excellence	Leadership excellence	Kanji (2002)
Strategic Capability	Time to replace asset or capability (Path dependence) and sources of advantage	Aaker (1989); Hall (1992); Teece, Pisano et al. (1997); Tena, Llusar et al. (2001); Larréché (2002)
	Strategic response capability	Bettis and Hitt (1995) as used by Lindgren (2001)
Performance	Performance by stakeholder	Hart and Banbury (1994); Kanji (2002); Claver, Tari et al. (2003)

3.5.4 Step 4: Determine form of response of each question

Of all the instruments used as a basis of the questionnaire, only one from Claver, Tari et al. (2003), had reverse scales. Opinions are divided as to whether reversed scales are a good thing or not (Churchill and Peter (1984); Schriesheim and Eisenbach (1995)) and, as a consequence, the decision was taken to avoid reverse scales in the questionnaire. A second decision related to the number of points on the scale. Hair, Babin et al. (2003) advised the use of similar scales to avoid influences from shifting scales. It was therefore decided to adopt 7-point scales for consistency as opposed to the 10-point scale favoured by Kanji's Leadership Excellence and Business Excellence instruments (Kanji (2002)). The literature showed that there are differences in Cronbach's alpha coefficient between using a two-response category scale and more than two response category scale (Churchill and Peter (1984); Peterson (1994)), and there are no significant differences between using a Likert 1 to 5 scale and a 1 to 7 scale.

Turning to the number of items in a scale, there is a tendency towards higher reliability and lower measurement error when the number of items is increased (Churchill (1979)). However, this is not a very strong relationship and the greatest differences appear in scales between two and three items and those with more than three. Ten-item scales have very high coefficients (Peterson (1994); Foreman and Money (2004)), and very high coefficients (higher than 0.9) should be avoided, for they might entail redundancy between the items (Boyle (1991)).

There were also several approaches to positioning the statements in the instruments. These included 'Disagree/ Agree' for Environmental dynamics (Lindgren (2001)) and Performance (Lindgren (2001); Claver, Tari et al. (2003)), and 'To what extent' for Leadership Excellence and Performance (Kanji (2002)). For simplicity and reliability the wording of the statements for the scales followed the original wording as far as possible. The only complication was the performance instrument where it was decided to express this as a 'To what extent scale' to maintain consistency with the Leadership Excellence instrument, which was to follow it on the questionnaire.

The most difficult part of the questionnaire related to the Strategic Capability instrument for time, where the form of response went through several iterations based on the feedback received. To maintain consistency with the approach of Hall (Hall (1991); Hall (1992)) the first version asked three questions:

1. How long (in years) would it take to replace the asset or capability?
2. How important is the asset or capability?
3. How far in front or behind your competitors are you in the asset or capability?

The early tests highlighted some difficulties with this approach. Firstly, presenting the 26 assets and capabilities 3 times lengthened the questionnaire and there were comments about repetition. Secondly, respondents were finding this to be the most difficult part of the questionnaire and it was taking time to complete. The suggestion was made that respondents listed their top three strengths and weaknesses, but this was abandoned after trials led to difficulties in coding the responses. The final version distilled the part of the questionnaire down to a single page asking respondents to record whether they thought the particular asset or capability contributed to their Sustainable Organizational Advantage and how long it would take to replace it if lost. This was a compromise situation in that it made the questionnaire easier to complete, but did not give the level of detail required for a direct comparison with Hall. However, as this area was only one of

several aspects being examined the trade-off in order to improve the response rate was considered acceptable.

3.5.5 Step 5: Determine wording of each question

The approach to determine the wording of each question was to first build the questionnaire from the base instruments whilst, at the same time, developing draft wording for the items that were in need of modification for the application to public sector organizations. The resulting questionnaire was presented to four industry experts for completion in the researcher's presence to improve content validity before being revised. Hall (1992) noted one of the reasons why content validity could be compromised was when the respondent does not understand the question. One industry expert was from a large private sector organization, one a public sector local council directorate, one the CEO of a voluntary trust and the fourth from a small enterprise. Table 3-12 summarizes the major changes by construct made as a result of this exercise. The resultant questionnaire was subsequently subjected to a number of pre-tests to further improve content validity as described under step 9 below.

Table 3-12: Summary of main changes by construct

Construct	Feedback
Organizational Context	No changes required other than adding 'Police' as an additional category.
Environment Dynamics	<ul style="list-style-type: none"> • Remove terms such as 'business' to make it more acceptable to the public sector. For example, change '<i>The business outlook for the next 12 months looks good</i>' to '<i>The outlook for the next 12 months looks good</i>'. • Whereas private sector organizations face changes in their marketplace the equivalent in the public sector is changes in their funding. For example, the draft translated public sector statement for the private sector statement '<i>The market will grow for several years</i>' was '<i>Demand for services will grow for several years</i>'. After the feedback this statement was modified to '<i>Public sector spending will grow for several years</i>'.
Leadership Excellence	<p>Double-barrelled questions reduced.</p> <p>One item added:</p> <ul style="list-style-type: none"> • Leaders keep the mission current.

Construct	Feedback
Strategic Capability	<p data-bbox="636 408 1010 435"><u>Strategic response capability</u></p> <ul data-bbox="685 472 2047 746" style="list-style-type: none"> <li data-bbox="685 472 2047 547">• The major change was the removal of the item ‘<i>Research and Development</i>’ from the original instrument. This is because this function has no equivalent in the public sector. <li data-bbox="685 584 2047 746">• Other changes were minor. For example, the first translation of ‘<i>Business Concept</i>’ from the original instrument for the public sector was ‘<i>Service concept</i>’, but <i>Raison d’être</i> was considered more appropriate. Another example was the original term ‘<i>Financial platform</i>’, which neither expert understood so ‘<i>Financial viability</i>’ and ‘<i>Budget position</i>’ were used for Private and Public sector respectively. <p data-bbox="636 783 1368 810"><u>Time to replace and Sources of Organizational Advantage</u></p> <ul data-bbox="685 847 2047 967" style="list-style-type: none"> <li data-bbox="685 847 2047 967">• Only minor changes were required, some of which were common with the ‘Strategic response capability’ factor above. One example was changing ‘<i>Distributor know-how</i>’ to ‘<i>Service provider know-how</i>’ for public sector. A second example was the translation of ‘<i>Low cost production and or/ service delivery</i>’ to ‘<i>Value for money</i>’.

Construct	Feedback
Performance	<ul style="list-style-type: none"> • The first version of the performance instrument assumed that there would be no difference in the rating of the performance of the public sector and the private sector as a starting point. But the feedback from the experts proved this assumption to be false, as the public sector works to a completely different business mode. For example, with the private sector an increased demand is a good thing whereas in the public sector this is more a reflection of political and environmental forces. The customer is a fundamentally different stakeholder. Examples of changes in this respect were the translation of <i>'Has an increasing market share'</i> to <i>'Has an increasing share of budget'</i>. • A second issue that had to be overcome is that public sector organizations do not compete. As a consequence items such as <i>'Has a high competitive position'</i> were translated to <i>'Has a high performance rating'</i> and <i>'Has high profitability'</i> to <i>'Provides value for money'</i>. • A third issue was that some items were removed. These related to the TQM Practice questions in the Claver, Tari et al. (2003) instrument as they were not considered to represent organizational performance. • A fourth category of change was minor context changes. For example, under people <i>'Has low absenteeism compared to the industry standard'</i> was amended to <i>'Has low absenteeism compared to the public sector norms'</i>. Some other items were re-worded to make them simpler, for example, <i>'Employee satisfaction has historically improved'</i> to <i>'Has improving levels of employee satisfaction over time'</i>. • Finally some items added under the Social responsibility' and Employee satisfaction' areas. For example, <i>'Follows sustainability'</i> and <i>'Develops its staff at all levels of seniority'</i>.

3.5.6 Step 6: Determine sequence of questions

As mentioned in the introduction, Step 6, 'Determine sequence of questions', was considered at the macro-level prior to the commencement of Step 5. This led to the decision to structure the questionnaire following the guidance of Churchill and Iacobucci (2002) in the order of Organizational Context, Environment Dynamics, Strategic Capability (Strategic Response Capability), Strategic Capability (Time to develop and Sources of Organizational Advantage), Performance and finally Leadership Excellence. The reasons for this sequence were that the first questions were straightforward and questions 2 and 3 simple tick-boxes. Question 4, Strategic Capability (Time to develop and Sources of Organizational Advantage) was the most difficult question and so it was positioned after the respondent had warmed up and before they were tired. Questions 5 and 6 were also simple tick-box questions but the last question, related to Leadership Excellence, was the most sensitive.

Following the early tests some changes were made to the sequence of the questions. The major change was to move the Organizational Context section to the back as it was observed that completing the respondents' details was the one question people struggled with the most. They were senior managers after all. There was also a change to the physical characteristics of the questionnaire based on feedback, which will be discussed in the next section.

The Environment Dynamics question had a number of items where there was need for alternative statements to cover public sector organizations. The question was simplified by presenting the items that were common to both sectors first before listing those with alternatives. In the early versions two alternatives were presented on some questions and only one on others. It was noted that the respondents missed some questions when they were only presented with different format questions in this section

One other minor change to the sequence of the assets and capabilities on the Strategic Capability (Time to develop and Sources of Organizational Advantage) question was to put the assets and capabilities into alphabetical order.

3.5.7 Step 7: Determine physical characteristics of the questionnaire

As discussed previously it had been decided to administer the questionnaire through a postal survey but, at the same time, make the questionnaire available electronically. The main thrust of the design of the questionnaire was focused on the postal use of the questionnaire and the basic design was based on other work that had been well received (e.g., Bauer (2002); ECforBE (2002)).

Four issues are addressed in the remainder of this section. First, there is the issue of the branding of the questionnaire and the decision as to whether to adopt a 'professional organization' or 'poor DBA student' approach. Second, there is the instruction page of the questionnaire. Third, the covering letter is considered and then finally, the critical question of whether to use one or two versions of the questionnaire.

3.5.7.1 Branding of the questionnaire

A decision was made for the questionnaire and supporting material to carry the organization's brand, the European Centre for Business Excellence. This was to raise brand awareness during the collection of the primary data, as the organization was sponsoring this aspect of the work. This decision was taken with the knowledge that it could have an impact on the return rate by being perceived as a commercial exercise, such as a direct mail shot. As will be seen from the level of response given in the next Chapter, this concern was well grounded but there is no doubt the questionnaire did reinforce and raise brand awareness.

3.5.7.2 Questionnaire instruction sheet

The research called for a number of different types of organization to be included in the sample. It was decided to have a standard instruction sheet at the front of the questionnaire and to have targeted covering letters. The questionnaire instruction page was based on that used by others (Lindgren (2001); Bauer (2002)). Several issues were considered when constructing the instruction page. These are summarized in Table 3-13.

Table 3-13: Questionnaire instruction page considerations

Consideration	Concern	Solution
Unit of analysis	Unusable questionnaires would be returned and / or the number of completed questionnaires would be lower than the potential.	Include definition of 'your organization'.
Level of analysis	Unusable questionnaires would be returned, as the level of respondent was too junior.	Include definition of required respondent and option to snowball if required. A qualification question was also included on the questionnaire.
Value of the questionnaire to the respondent	Reduced response rate.	Include value statement as an example.
Ease of completion of the questionnaire	Reduced response rate.	Reinforce simplicity and time to complete.
Specific differences between public and private sector organizations	Reduced response rate and/ or inaccurate responses due to confusion.	Include a section defining how the questionnaire recognises both types of organization.

The draft questionnaire instruction page was subject to review and refinement through the focus groups described below under Step 8. No major changes were made apart from correcting typographical errors and changing the wording to reflect the content changes made.

3.5.7.3 Questionnaire covering letter

The first covering letter produced followed the guidance of Churchill and Iacobucci (2002: 349). This covered aspects such as the importance of individuals' contributions and the fact they were selected at random. It was the intention to customize the covering letters depending on the target group of respondent, but a major refinement based on feedback from the reviews was to simplify and shorten the letter, and to include a 'Valid Business Reason', which is an idea borrowed from a sales arena. This is defined as '*the potential customers' reason for seeing you*' (Miller and Heiman (1988: 237)). The valid business reason varied from the private to the public sector audience. In the former, the motivation

was the ability to identify potential competitive advantages that they could use to their benefit. For the public sector the motivation was to learn more about Business Excellence to enable them to improve their business planning, Business Excellence being a concept being forced upon them by the Government.

One change made during the course of the data collection was to provide an early insight into the results of the study. As the questionnaire was issued to target respondents on a rolling basis the later covering letters (and the letters used to chase up respondents) hinted at the early results to whet the appetite without biasing the responses.

3.5.7.4 Number of versions of the questionnaires

A major decision was whether to conduct the data collection with a combined public and private sector questionnaire, or two versions of the questionnaire with one for each type. A number of factors were considered in making this decision and these are shown in Table 3-14.

Table 3-14: Considerations for one or two questionnaire version options

Factor	Single Version	Two Versions
Required sample size	The ability to achieve an acceptable response greater.	There was a potential need to collect an acceptable response level for each version.
Simplicity of presentation	More complex where there were two options especially where a separate question structure was required.	Much simpler as only one option presented.
Simplicity of completion	Questionnaire length longer and slower to complete.	Shorter and faster to complete (estimate 10% from observation).
Comprehension of items	Enhanced by presenting both options.	Not considered to be a major issue.

From the feedback received when running the reviews it was decided to go with a single questionnaire for four main reasons:

- Lower risk to statistical power as there was more probability of getting a larger sample (Hair, Anderson et al. (1998))

- For items that had two options it was found that this improved the comprehension of the translation as public sector respondents could relate the question to a commercial environment
- It was a false assumption that the respondents could be categorized into 'Private' or 'Public' sector as public sector organizations become more commercially aware
- The problem of presenting two options to a respondent simply was solved.

The first three points need no further explanation but the fourth point has been expanded to capture the learning for others. Figure 3-4 captures the various stages of refinement that the questionnaire went through.

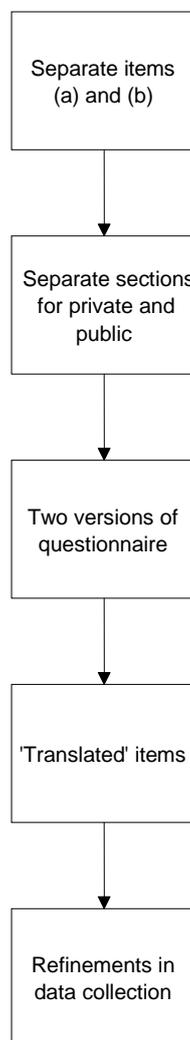


Figure 3-4: Stages of refinement of dual items to final questionnaire

The first version of the questionnaire took the approach of having (a) and (b) versions of the items that needed to be changed to suit the public sector. This was tested in the initial content validity tests and found to be limited. These first tests were conducted by getting the respondent to complete the questionnaire in the researcher's presence, followed by a debrief at the end of the exercise. Watching the respondent complete the questionnaire provided additional insights through their body language (Clayton (2003)) and one of these insights was that when presented with a mixture of item options, then a single item, some of the items were missed out.

The next version of the questionnaire took the approach of having all the common questions in one section, followed by specific questions for the public and private responses in separate sections. This approach was not popular with the test respondents and led to the conclusion that two versions of the questionnaire should be completed, or that the research method should be changed to utilize one-to-one interviews rather than using a postal questionnaire. The former was considered to be more practical given the desired sample size so a dual version of the questionnaire was produced and piloted. On separating the questionnaires into two versions, the conclusion was that although this simplified the questionnaire for the respondent, it had major implications for the research.

The matter was given consideration at the Wisconsin theme group in October 03. This is mentioned as it demonstrates the value of actively participating in such support groups. The cost, 36 hour journey and exposure to 'American' Shakespeare was well worth the investment as an inspired member of the group suggested that the problem should be solved using a 'translation' approach as used when using dual language questionnaire. A version of the questionnaire was produced where a public variation of the item was reproduced in a second colour underneath, or beside, the general statement. When tested with some of the early respondents the changes were received positively and so this was the method used. As Figure 3-5 indicates, a further refinement was required when the practicalities of using the questionnaire were considered, but this will be discussed in the data collection section below.

3.5.8 Step 8: Revisit previous steps

Determining construct validity is a subjective process that may be improved through the use of experts to improve content validity (Carmines and Zeller (1979); Churchill (1992); Clayton (2003)). Peter and Churchill (1986) in particular noted the need to rely on both judgemental as well as empirical relationships when assessing construct validity. During the development of the questionnaire five review cycles were conducted and these are

shown in Figure 3-5. The first review consisted of four industry representatives examining the questionnaire in order to ensure that the wording of the items could be understood in their industries. This was described under Step 5 in section 3.5.5 above.

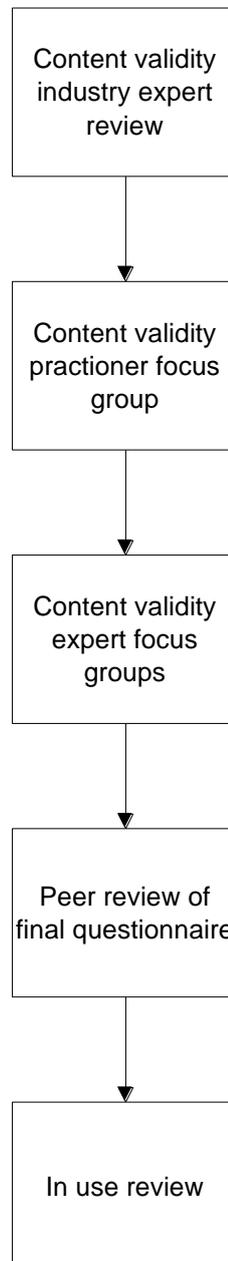


Figure 3-5: Questionnaire review cycles

The second review cycle involved a focus group of four Business Excellence practioners, two from private sector and two from public sector organizations, considering the content validity of the questionnaire. It was the review of this version of the questionnaire that identified there was a major concern with part 3 of the questionnaire, which sought to

examine the sources of organizational advantage. There were also some changes to the items on the questionnaire, with some items being added. A summary of the feedback is shown in Appendix 3.1: Practitioners' focus group feedback. The focus groups were managed using the qualitative methods outlined in section 3.3 above.

The third cycle exposed the revised version 3 of the questionnaire to two five-person focus groups with Business Excellence experience. One focus group comprised public sector experts, and the other private sector experts. The focus groups were conducted at the same time, but in different rooms. A plenary session held at the end reviewed the feedback and this included some issues that are addressed in the data collection section below. Appendix 3.2: Private and public sector focus group contains the summary feedback from both groups.

The penultimate review was conducted on version 4 of the questionnaire with a peer group at the October 03 Theme Group. The focus group consisted of five members and to demonstrate the quality of the participants Figure 3-6 shows two of the group captured during a moment of relaxation. Several minor changes were made to the wording, for example, refining questions so that they were not so leading, but the major change as described above was to re-combine the two versions of the questionnaire into a single version.

At the end of the questionnaire design process the questionnaire was at version 5. The last box in Figure 3-5 relates to some cosmetic changes made when preparing for the data collection, and these will be described below. The final version of the questionnaire is given in Appendix 4: The final questionnaire.



Figure 3-6: Wisconsin focus group members in a moment of relaxation

3.5.9 Step 9: Pre-test questionnaire

Due to the decision to base the questionnaire on existing instruments and due to the effort put into the review cycles, a pilot study was not considered necessary. Despite this, to reduce the risk, some preliminary analysis was conducted after approximately 50 questionnaires had been returned. The alphas were calculated for all the relevant instruments and a correlation analysis conducted on three of the constructs. Table 3-15 and Table 3-16 contain these preliminary results.

Table 3-15: Initial alphas recorded

Construct	Reported Alpha	This Study (N=54)
Environmental Dynamics	0.63 - 0.67	0.68
Leadership Excellence	0.74 – 0.98	0.85 - 0.97
Strategic Response Capability	0.82 - 0.89	0.94
Performance	Not applicable	0.66 - 0.88

Table 3-16: Initial correlations for three of the constructs (N=54)

		Performance	Leadership Excellence	Capability
Performance	Pearson correlation Sig. (2-tailed) N	1		
Leadership Excellence	Pearson correlation Sig. (2-tailed) N	0.769** .000 47	1	
Strategic Capability	Pearson correlation Sig. (2-tailed) N	0.743** .000 46	0.722** .000 54	1

** Correlation significant at the 0.001 level (2-tailed)

One additional benefit of conducting this early analysis (apart from having the comfort that the research was on course to deliver a defensible contribution) was that the results could be used to sell participation in the study. This point has been discussed elsewhere.

3.5.10 Summary of questionnaire design

This section has described the approach to designing the questionnaire. The Churchill and Iacobucci (2002) approach was followed and a number of review cycles were conducted. A complete copy of the final questionnaire has been given in the Appendix 4: The final questionnaire.

It was noted that some further refinements were made when the data collection activities commenced and these are described below. In the next section the sampling approach is described.

3.6 Sample selection

The scope of the sample selection stage is defined as starting with the definition of the attributes of the required sample and ending when the potential respondents had been identified and recorded in a database. Trochim (2001) noted that most research necessitates a multi-stage approach to sampling. In the current study the situation was complicated by the desire to include both public and private organizations in the sample. Prior research (e.g. *ECforBE* (1997); *ECforBE* (1999); Hendricks and Singhal (2001b); Bauer (2002); Przasnyski and Tai (2002); NIST (2002b)) used the convenience of award winners as a sample and this research recognizes the limitations caused by the bias in the sample. To check for bias in this research the source of the respondents was recorded.

3.6.1 Unit and level of analysis

The need to target respondents at a senior level in the organization was a further complication. It has already been mentioned that several actions were taken to ensure this, such as clearly stating the level of the analysis in the questionnaire introduction, providing the option of passing the questionnaire to 'a more appropriate executive' and including an organizational qualification level on the questionnaire. One further action was to change the emphasis of the covering letter so that some were addressed to the senior executive and others to a contact asking them to pass it to an appropriate contact in a 'snowballing' approach (e.g., Moser and Kalton (1971); Denscombe (1998); Trochim (2001)).

The unit of analysis was defined as an organizational unit that had its own leadership team and its own discrete stakeholder results. This definition is in line with that used for award applications where it must be possible to assess all aspects of the organization. This approach was also taken for practical reasons, as it increased the probability of getting an acceptable response as, for example, it was possible to target 83 leaders in

the Inland Revenue whereas, only considering the Inland Revenue, as an organization, the target would have been one. It was also considered that it would be easier to connect with organizational unit leaders than very senior executives. Responses were therefore being sort from whole organizations (multinational and SMEs), Divisions, Business Units, Regions and Directorates. The approach also had the benefit of providing a wide range of organizational sizes, and size was one of the variables being examined.

3.6.2 Sampling approach

The design of the research considered the need for efficient sampling (Hair, Babin et al. (2003)) Several factors were considered in estimating the required sample size, most of which related to statistical power. Taking a general view, Cohen (1977), as cited by Hair, Anderson et al. (1998), recommends a statistical power of 80% and significance level of 0.05. On consulting Hair a sample size of over 130 would be required to achieve a power of 80% with an effect size of 0.35 at a 0.05 significance level. The required sample size reduces to over approximately 65 when the effect level increases to 0.50 (Hair, Anderson et al. (1998: p12-13)). A review of empirical work in the Business Excellence literature suggested that a small to moderate effect size was expected, setting the required sample size at around 200 to be on the safe side. The danger of excess power was not a major risk with this sample size, this being a raised when the sample size exceeds 1000 (Hair, Anderson et al. (1998)).

A second consideration was the required number of observations for the factor analysis. For this Hair, Anderson et al. (1998) suggest an absolute minimum of 5 observations per variable, with a 10 to 1 ratio being more suitable. Examining the questionnaire it may be seen that the largest instruments were the Performance instrument with 39 items, followed by the Leadership Excellence item with 26 items. Taking the Performance instrument this gave a minimum sample size of 195, with an ideal of 390.

A third consideration was the power required to detect a statistically significant R^2 in the regression analysis. Taking the worse case of 5 independent variables in the regression, a sample size of 100 would be required to detect a statistically significant R^2 of 12% at a 0.05 significance level, with a 5% R^2 being detectable at a sample size of 250 (Hair, Anderson et al. (1998: p165)).

The final consideration was generalizability. Turning to Hair yet again the suggestion is a minimum ratio of observations to variables of 5 to 1, with 15 to 20 to 1 being more desirable. Taking the worse case again of 5 independent variables, this would require a

minimum sample size of 100. Taking all the considerations, the objective was to have a sample size of 200 with a minimum of 100.

Potential respondents were identified from a number of sources. These were:

- Two bought-in commercial databases, one for private and one for public sector organizations
- Public sector conference attendees
- Personal networks

As the number of potential respondents was low, with a range of between approximately 80 to 150 depending on the source, a 100% sample was taken (Moser and Kalton (1971)). In designing the approach some assumptions were made about the likely response rates. It was estimated that an average response rate of 10% would be achieved with the worst-case scenario of no lower than 5%. Although a quota sampling approach was not used the ideal number of responses was set at 100 public sector and 100 private sector organizations. If this could not be achieved it was calculated that, with a 5% return, 100 responses would be collected with a sample of 2000 potential respondents. If only a very small return was achieved there was a high confidence that at least 50 returns would be achieved, although it was recognised this would lead to concerns over the limitations.

Given the potential respondents had to be identified from a downloaded excel spreadsheet, selected, checked for duplication, linked to address data that was copied from a web-page in some cases, and transferred to an excel database that was used for the mailing, the identification of the target respondents was an extremely time consuming process. It was estimated that 25 contacts could be processed per hour and so over 84 hours effort was expended for the 2100 contacts identified in the sample.

3.6.3 Sources of potential respondents

Each of the four categories are now briefly described.

3.6.3.1 *Bought-in commercial database for private sector organizations*

Two commercial databases were 'purchased'. The first, OneSource, was used as the source of the potential private sector organizations, which draws its data from sources such as Dunn and Bradstreet. Of the 17 different industry sectors covered by OneSource 7 were chosen on the basis of their level of growth as consultancy industry sectors

(Abbott (2003)), their commercial interest to the consultancy and their use in prior studies (e.g., Snow and Hrebiniak (1980b); Bourgeois and Eisenhardt (1988); Lindgren (2001)). These industry sectors were Automotive & Aerospace, Communications, Computers & Electronics, Construction, Finance, Services and Utilities & Energy. From these 7 industries a total of 27 subgroups were selected. Using the database 500 potential executive contacts were downloaded for each industry sub-sector. The limit of 500 was imposed as the researcher only had access to a preview version of the database (the subscription cost was £10,000 per year). This did not give a major cause for concern as the organizations were of mixed origin (e.g., sizes). Later in the research a potentially more suitable database was identified in the Hemsco database, but this database is not available through Henley although access could have been gained through LUBS.

Each sub-industry group gave a number of contacts for the organizations included and when a response is only being sought from one contact it is important to choose the most knowledgeable person (Huber and Power (1985)). A set of rules was therefore designed to ensure that a consistent approach was taken to selecting the individuals. Given the 'valid business reason' of the determination of competitive advantage, the Strategy or Marketing Director was selected as the target respondent if such a contact was listed. The second option was the Managing Director and the third, the Chief Executive or Chairperson. In some cases only 'Directors' were listed and so the first director in alphabetical order was selected to avoid duplication. Once all the potential respondents were identified a check for duplication was made. It was concluded that this was extremely necessary as several organizations were found to trade under different names or/ and in different industry sectors.

3.6.3.2 *Bought-in commercial database for public sector organizations*

A database of Chief Executives from local councils was purchased. Entitled the 'Municipal Yearbook', this provided over 420 potential contacts. Although some data manipulation was required this was not as labour intensive as for the OneSource data. One lesson from using this database was that, although the database was purchased for use in 'research', the vendor had a different understanding of research than the researcher. When potential respondents on the original list were sent a chase-up letter, as is normal research practice, the vendor issued a threatening letter accusing breach of contract as the licence was for a one-shot use. This increased the cost of the survey by over £300 and considerable aggravation as the vendor threatened court action if we did not pay their 'fine'. After paying the invoice the vendor started to send '25% off your next purchase' discount vouchers, which make handy targets if one wants to practice throwing darts.

The inclusion of central government organizations was considered but no commercially available database was identified. Sources within central government suggested that one way of identifying suitable contacts would be through web-searches, but on attempting this it was found to be impractical. In fact one of the network contacts kindly offered to provide a list of senior contacts with the Inland Revenue, but this took their secretary several days' effort to provide a list of 83 contacts, and they had the advantage of internal systems!

3.6.3.3 Public sector conference attendees

To overcome the problem of not having central government representation, two conference lists were obtained, one from a 'Public Sector Excellence' conference in February 2003 and the other a 'Police Excellence' conference in September 03. Some consideration was given to bias as these were 'Business Excellence' conferences, but as no direct Business Excellence questions were being asked this was considered a manageable limitation, as the source of all the respondents was recorded as a data field.

3.6.3.4 Personal networks

Over the years a number of personal contacts have been made. To this was added potential contacts from the consultancy database, other networks such as Business Excellence networks and by targeting contacts in large organizations with the request to distribute the questionnaire internally. The actions taken to manage any bias through the use of such an approach have been well described elsewhere in this section.

3.6.4 Summary of selected sample

Although technically a result, it is considered of value to record the number of identified contacts who received the questionnaire segmented by source, and the respective response rates. This data is summarized in Table 3-17.

Table 3-17: Sample sizes by source and respective responses

Source	Issued	Responses	% Response
OneSource	1074	25	2.3%
Municipal Yearbook	453	47	10.4%
Networks	318	82	23.6%
Conference lists	261	38	14.6%
Total	2106	192	9.1%

The response rate was disappointing but very close to the anticipated figure of 10%. Other studies have returned higher response rates (e.g., Das, Handfield et al. (2000); Beheshti and Lollar (2003); Baidoun (2004)) but this has not always been the case (e.g., Link and Scott (2001)). Low response rates are expected from direct mail surveys (Churchill and Iacobucci (2002)), especially to senior executives (Simons (1995); Collins and Porras (1998); Agle, Mitchell et al. (1999); Simons, Pelled et al. (1999); Makhija (2003)). An option when considering publication of the research will be to consider the effect of removing the OneSource sample, thereby improving the generalizability of the research to the higher responding population.

3.7 Data collection approach

Sample selection concluded with the potential respondents being recorded in a database.

The scope of the data collection stage was defined as starting with the mass production of the questionnaire and ending when the data collection step was considered over.

Figure 3-7 defines the main steps in the approach.

Before describing the steps some general points will be made about the approach taken.

The approach was designed following the advice of Saunders, Lewis et al. (2003). In addition to the selection of a 'Valid Business Reason', which was described above, to increase the response rate the non-monetary incentive of a copy of a summary of the research was given in the covering letter and there was a question on the questionnaire so that the respondent could indicate whether they wanted to receive this. Feedback in the development of the questionnaire suggested that there was an issue over confidentiality as a leadership scale was being used, so the confidentiality of the results was reinforced in the covering letter as well as on the questionnaire. A follow-up was also conducted as shown in Figure 3-7.

Some advice was not taken. A freepost licence was organized to provide return postage although it is noted that a higher response may have been achieved using stamps. Given the forecast response rate, this could have added as much £500 to the cost of the research. It was also noted that Saunders, Lewis et al. (2003) suggested and other researchers have used (e.g., Lindgren (2001); Wilberg (2003)), a prior notification to increase the rate of response. Apart from the potential cost (£500 again), the timing did not suit such an approach. The data collection commenced in November 03 and the target cut-off date was 29 February 04. Given that Christmas was bang in the middle of this period, it was decided to have a break over the Christmas period, so two weeks were taken out of the schedule with the objective of running the first data cycle collection November to Christmas and the second data collection cycle early January to February.

The description of the approach has been given in the context of the postal questionnaire. Where there was a difference between the postal approach and questionnaires distributed by e-mail, this has been noted.

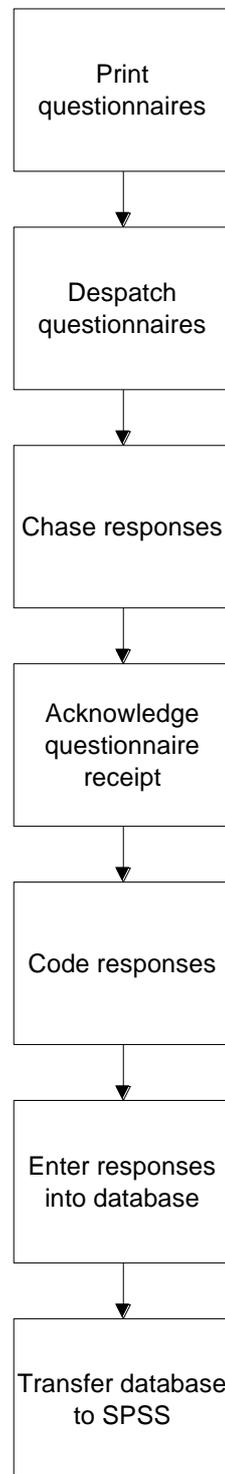


Figure 3-7: Main steps in the data collection stage

Print questionnaires

One of the major lessons from this study is that *'it is not over until the fat lady sings'*. From the point that the questionnaire was designed and potential respondents were identified the perception was that it would be plain sailing, but the first step in the approach threw up some challenging practicalities.

Firstly, the final questionnaire had the public sector translations in blue and this proved to be very effective. However, in going into production it was found that the cost of printing two colour questionnaires was expensive and, more importantly, it would have put a 2 to 3 week delay in the process, meaning that the data collection would have not commenced until 2004. Both litho-printing and colour laser printing were explored, and although laser printing was more convenient, the equipment lacks reliability when producing large numbers. The questionnaire therefore had to be changed to a black and white version, with a very different text style replacing the blue. The modified version was tested with a group of 3 respondents and although it was not considered as good as the colour version, this comment was only made by the three respondents who had experienced the colour version.

Another point concerns the file type. The word version of the questionnaire was converted to an acrobat version as this gave a slightly more professional result and it improved security, as respondents receiving the questionnaire by e-mail were unable to change it. It was found, however, that when printed by the respondents, acrobat files sometimes did not print with the required resolution. Some early versions were returned with no check boxes on them. At this point the use of acrobat files was abandoned and word files used.

One complication with the approach was the need to customize the questionnaire. This was done for three reasons. Firstly, in the pre-tests it was found that the most difficult task for a senior leader was to complete his or her name and address. This came to light during the observed interviews. Secondly, in the focus groups the view was expressed that having the questionnaire pre-printed with the respondents name and address looked more professional. Finally, it was possible to include a code on the questionnaire so that the source of the response could be tracked.

The customization requirement was satisfied through the purchase of a Dymo LabelWriter machine, which prints labels direct from a database. The label was attached to the last page of the questionnaire in a pre-defined box. Where questionnaires were

despatched my e-mail, a variant of the questionnaire was used that had an embedded source code and space for the name and address to be completed.

One issue that did come to light during the despatch questionnaire step was one of photocopier quality. The questionnaires were printed on demand using a fast black and white laser printer. Due to the need to label the questionnaires everyone had to be handled and it was found that several questionnaires were misprinted with text missing. It was therefore necessary to implement a quality control check on the output of the photocopier machine.

Despatch questionnaire

As mentioned above, the covering letters were customized depending on the target respondent and it was found that printing the letters, signing them individually, printing the questionnaire labels, attaching them to the questionnaire and stuffing a window envelope with the letter, customized questionnaire and freepost return envelope was a simple, if time consuming, task. The researcher's thanks goes to his family at this point for completing this task during the course of the study, while he was off watching WHU play.

Chase responses

After a three to four week period non-respondents were chased either by e-mail or by post. With both methods a hint of the results was included, as the preliminary analysis had been completed. For the postal chases the incentive of a free copy of one of my books was given in order to increase the response rate and to reinforce personal credibility.

The follow-up had a small impact and did increase the response rate by approximately 10%. It was interesting that, whereas several people still had the questionnaire in their in-tray, many remarked that they had not received the questionnaire in the first place and so requested a second copy. This was particularly noted for contacts that had been sent the questionnaire by post and then chased by e-mail. It is likely that a 'protective PA' effect was being observed in these cases. It is also worth noting that, for the OneSource targets, many of the rejections came from executive assistants so they did not land anywhere near the desks of the intended respondents.

Acknowledge questionnaire receipt

For those respondents who were kind enough to participate in the study a follow-up letter was issued by Professor John Oakland, who is the CEO of the sponsoring organization

and well-known in the field, having written several best selling books. The main purpose of this action was to build future relationships and prepare the ground for the pre-release of the results to test validity (Jick (1979)).

Code responses

On receipt of the responses, the date received was noted on the database together with whether the respondent wanted a summary of the results. Two additional codes were added, which were for the source of the respondent and whether they fell into the private or public sector category.

Enter responses into database

Periodically the returned questionnaires were transferred into an excel database. Excel was chosen as this was easier to use for the data entry operatives and it facilitated a 100% cross-check prior to commencing the analysis. At this point the issue of missing data was not considered with the fields simply being left blank. As a generalization, the only part of the questionnaire that had missing data was part three, which considered the sources of organizational advantage and replacement periods.

Transfer database to SPSS

Although some data had been used to set up the receiving SPSS data file and to conduct some preliminary analysis, the final transfer of the data to the SPSS data file was made in early March 04, to signal the completion of the collection of data at the end of February 04.

3.8 Data analysis plan

The analysis followed the advice of Hair, Anderson et al. (1998: p25-27) who suggested that six steps should be followed:

1. Define research problem and technique
2. Develop analysis plan
3. Evaluate assumptions
4. Estimate model
5. Interpret the variates
6. Validate the model

The research problem was derived from the literature and discussed in the literature review in Chapter 2 and this Chapter has focused on the research techniques. Chapter 3 is structured around the next four steps. After testing the assumptions regarding normality of the data and purifying the instruments, a number of models are estimated and the results interpreted. In order to improve confidence in the results, focus groups and other feedback mechanisms were used to seek feedback on the analysis. These activities build the platform for a discussion on the results, which is the subject of Chapter 5.

Given that a dependence relationship with one dependent variable was examined and the data was metric, multivariate regression was the appropriate analysis technique for testing most of the hypotheses, with Structured Equation Modelling (SEM) required for one hypothesis (Hair, Anderson et al. (1998: p20-21)). Returning to Chapter 2, where a number of hypotheses were proposed, Table 3-19 provides a reminder of these hypotheses and identifies the multivariate techniques that were used to test them. This table identifies the configuration of the research model for each hypothesis, together with the multivariate technique used to test the relationship. The table also contains a list of the variates used in the specific regression equations.

The multivariate regression analysis called on the need to test the effect of moderating variables and this was achieved in two ways. Where the moderating variable was a metric variable, the product of the predictor variable and moderator variables was included in the regression equation (Baron and Kenny (1986); Jepsen, Berthon et al. (1996); Schwab (1999)). The moderator hypothesis is supported if the interaction is statistically significant (Baron and Kenny (1986)). Where the moderator variables were categorical, dummy variables were deployed, using indicating coding.

The quality of structured equation modelling has been criticized by researchers (Chin (1998)). Such results should be reported in such a way that allows replication. Table 3-18 summarizes the main requirements and provides the necessary information, where applicable.

Table 3-18: Requirements of SEM reporting

Requirement	Comments
Population from which the sample was obtained	See section 3.6.3.
Distribution of the data to determine adequacy of the statistical estimation procedure	See section 4.1.
The conceptual model to determine the appropriateness of the statistical models analyzed	See Figure 4-7.
Statistical results to corroborate the subsequent interpretation and conclusions	See Table 4-33 and Table 4-34.
Computer programme and version number	Amos 5 version build 5138.
Computer	Toshiba Portégé with Pentium III processes running at 933MHz and with 496MB of RAM.
Changes to default parameters	None.
Correlation and standard deviations to third significant digit	Not given due to space restrictions.

Adapted from Chin (1998)

3.9 Chapter summary

This Chapter has focused on how the research approach was designed and executed. Given the chosen philosophy of a positivist approach, a questionnaire for the postal survey was designed and tested prior to its use to collect the data. The sample was unique as it covered organizations of different sizes and from different industries. A key feature of the research was that both public and private organizations were covered and these operate to different business models. The instruments to collect the data for analysis had to be modified to accommodate this.

The data collection itself presented a number of challenges, such as the need to avoid using a colour questionnaire and the customization of the questionnaire. The response rate from one of the data sources was disappointing, but the overall results provided enough data to conduct the analysis with some confidence. The cost of the questionnaire was tracked and the estimated investment to collect the data was £3000. Had additional steps been taken to improve the response rate, notably using a pre-survey teaser and using stamps in place of a freepost service, the cost of these steps is estimated to have been another £1000 and it is unlikely that this would have increased the response rate significantly.

The next step after collecting the data was to analyze the data using the approach outlined at the end of this Chapter. This forms the basis of the next Chapter.

Table 3-19: Multivariate techniques to test hypotheses

Hypotheses	Variates Utilized			Multivariate Technique
	Independent	Categoric	Dependent	
<p>Hypothesis 1 Research Model</p> <pre> graph LR LE[Leadership Excellence] --> P[Performance] OC[Organizational Context] --> P ED[Environment Dynamics] --> P </pre>				
<i>H1: There will be a positive relationship between the level of Leadership Excellence and Performance</i> (Dean and Bowen (1994); Zairi (1995); Petrick, Scherer et al. (1999); Yusof and Aspinwall (1999); Zahra (1999); EFQM (1999a); Das, Handfield et al. (2000); Higgs and Rowland (2000); Pannirselvam and Ferguson (2001); Kanji and Sá (2001a))	Leadership Excellence		Performance	Simple regression
<i>H1a: The strength of the relationship will be similar with private sector organizations and public sector organizations</i> (Redman, Mathews et al. (1995); EFQM (1999a); PriceWaterhouseCoopers (2000))	Leadership Excellence	Sector: Public and Private	Performance	Multivariate regression
<i>H1b: The strength of the relationship will be higher with whole organizations than Business Units</i> (NIST (2002b))	Leadership Excellence	Whole Organization and Business Unit	Performance	Simple & Multivariate regression
<i>H1c: Size will have an impact on the strength of the relationship</i> (Easton and Jarrell (1998); Terziovski and Samson (1999); Terziovski and Samson (2000); Hendricks and Singhal (2001a); Wiklund and Shepherd (2003))	Leadership Excellence Size (LogP)/ (LogT)	Size Dummy	Performance	Multivariate regression
<i>H1d: Leadership Excellence will have a positive relationship with all stakeholder performance results</i> (Miles, Snow et al. (1978); Wright, Dunford et al. (2001); EFQM (2003))	Leadership Excellence		8 stakeholder groups	Simple regression
<i>H1e: The strength of the relationship will be weaker in highly dynamic environments</i> (Das, Handfield et al. (2000); Eisenhardt and Martin (2000); Fiol (2001); Leonard, McAdam et al. (2002); Dervitsiotis (2004); Jones (2004))	Leadership Excellence Environment Dynamics	Environment Dummy	Performance	Multivariate regression

Hypotheses	Variates Utilized			Multivariate Technique
	Independent	Categoric	Dependent	
<p>Hypothesis 2 Research Model</p> <pre> graph LR SC[Strategic Capability] --> P[Performance] ED[Environment Dynamics] --> moderates SC_P[] style SC_P width:0px,height:0px </pre>				
<p><i>H2: There will be a positive relationship between Capability and Performance (Klein, Edge et al. (1991); Savolainen (1999); Zahra (1999); Rosenbloom (2000); Savolainen (2000a); Tena, Llusar et al. (2001); Douglas and Ryman (2003); Wiklund and Shepherd (2003))</i></p>	Capability		Performance	Simple regression
<p><i>H2a: The strength of the relationship will be weaker in highly dynamic environments (Barney and Zajac (1994); Henderson and Mitchell (1997); Das, Handfield et al. (2000); Eisenhardt and Martin (2000); Eisenhardt and Sull (2001); Fiol (2001))</i></p>	Capability Environment Dynamics	Environment Dummy		Multivariate regression
<p>Hypothesis 3 Research Model</p> <pre> graph LR LE[Leadership Excellence] --> SC[Strategic Capability] </pre>				
<p><i>H3: There will be a positive relationship between Leadership Excellence and Capability (Teece, Pisano et al. (1997); Ireland and Hitt (1999); Petrick, Scherer et al. (1999); Zahra (1999); Prahalad (2000); Zott (2003))</i></p>	Leadership Excellence		Capability	Simple regression

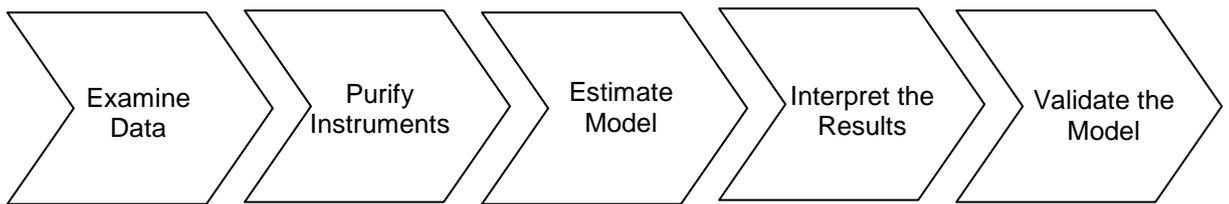
Hypotheses	Variates Utilized			Multivariate Technique
	Independent	Categoric	Dependent	
Hypothesis 4 Research Model <div style="text-align: center; margin: 10px 0;"> <pre> graph LR A[Replacement Period] --> B[Performance] </pre> </div>				
<i>H4: Capability is developed over time</i> (Dierickx and Cool (1989); Hendricks and Singhal (2000); Douglas and Judge (2001); Tena, Llusar et al. (2001); Hendricks and Singhal (2001a); Hendricks and Singhal (2001b); Przasnyski and Tai (2002); Sureshchandar, Rajendran et al. (2003); Warwood and Roberts (2004))	Replacement Periods Log (Time)	Sources of organizational advantage	Performance	Simple Regression Descriptive Statistics
Hypothesis 5 Research Model <div style="text-align: center; margin: 10px 0;"> <pre> graph LR A[Leadership Excellence] --> B[Strategic Capability] B --> C[Performance] </pre> </div>				
<i>H5: Leadership Excellence has a positive relationship with capability, which leads to higher levels of performance</i> (Tena, Llusar et al. (2001))	Leadership Excellence		Capability Performance	SEM

4 Results and analysis

The last Chapter described the approach followed to collect the data for the analysis.

This Chapter makes use of the advice of Hair, Anderson et al. (1998: p25-27) to analyze the data collected using the steps also outlined in the previous Chapter (See Section 3.8).

First the data was examined to test the assumptions required so that it could be used in multivariate analysis. The instruments were then purified checking for issues such as reliability. Once the instruments had been confirmed, the data was subjected to a number of statistical analyses to test the hypotheses and the results interpreted and validated in preparation for the next Chapter, which discusses the results. Figure 4-1 displays schematically the steps taken in this Chapter.



Adapted from: Hair, Anderson et al. (1998)

Figure 4-1: Data analysis approach steps 3 to 6

4.1 Examining the data

As pointed out by Hair, time spent in examining the data prior to the application of the multivariate techniques is time well spent (Hair, Anderson et al. (1998)). This section commences with a summary of the sample collected in terms of the different categories as a basis of understanding the data better. Before examining areas such as the normality of the data the subject of missing data is addressed to complete the basic data manipulation.

Normality, skewness, kurtosis and the identification of case and variable outliers were next addressed through graphical examination of the data and statistical tests. This was followed by a number of tests of means to examine whether there is a statistically significant difference between the responses from the various key groups: public vs. private, level of leadership and whole organizations Vs business units. These latter tests for statistically significant differences gave an insight for the analysis that was conducted. Tests on normality, linearity and the homoscedasticity of the variates were conducted once the instruments were purified.

4.1.1 Sample statistics

Based on the literature several categories were selected for inclusion in the research.

Taking the total sample of 193 responses

Table 4-1 provides a breakdown of the sample by type of organization, leadership level of respondent and whole organization Vs business unit.

Table 4-1: Breakdown of responses by category

Categories and Sub-categories	Count
<i>Public Vs Private Organizations</i>	
Public	101
Private	92
<i>Leadership Levels</i>	
Most senior executive	59
Senior manager	101
Middle manager	25
Other	8
<i>Whole Organizations Vs Business Units</i>	
Whole organizations	110
Business units	83

Data for the size of the organization in terms of number of people and turnover/ budget were examined. The untransformed data showed high skewness and kurtosis (up to 100) and so the data was transformed by taking the log (Hair, Anderson et al. (1998)). The descriptive statistics for the transformed data is given in Table 4-2. Based on these results, the log of the size as measured by both number of people (LogP) and turnover/ budget (LogT) were used in the model. Data transformation was also attempted by taking the square root of the original data (Sharma (1996)), but this did not offer any improvement over the original data.

Table 4-2: Descriptive statistics for log (P) and Log (T)

Variable	Mean	Skewness	Kurtosis	Potential Outliers
Log P	2.93	-0.14	-0.23	60, 145
Log T	1.87	0.21	0.11	193

The response rate of public and private organizations was 12.7% and 6.5% respectively, but due to the features of the sample, the actual number of responses was almost equal (101 to 92, respectively). Figure 4-2 shows the response by industry type, raising some concerns over response bias. This result is a consequence of the responses received to the questionnaire from the various sources as dictated by the sampling frame documented in Table 3-17.

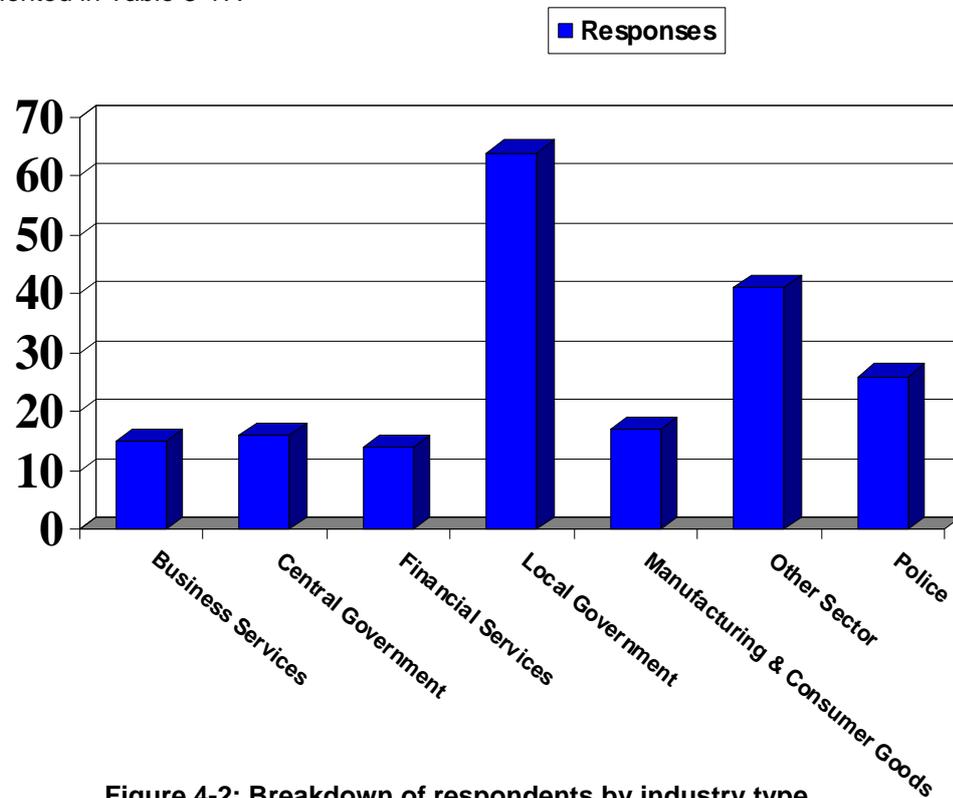


Figure 4-2: Breakdown of respondents by industry type

Churchill defined non-response error as ‘a failure to obtain information from some elements of the population that were selected and designated for the sample’ (Churchill and Iacobucci (2002: p528)). This study did not seek to obtain data from particular industry types other than just the broad private and public sector classification, only the responses had a distribution of different environmental conditions. The potential limitation in the research due to the inequality shown here is noted, however. To test for non-response bias a test of means was performed on both the main industry clusters and the sources. The main area of concern was with the performance and leadership instruments, a point that is taken up in the next section.

4.1.2 Testing the means

A number of tests of means were calculated across the dataset to examine statistically significant difference in response from different categories. This was conducted so that a decision could be made on what sub-sets of data would be used in the analysis. The key questions to be examined were:

Was there a difference between the responses of:

1. Public and private sector?
2. Whole organization and business units?
3. Leadership levels?

The first two were tested using an independent samples t-test and the latter using ANOVA (George and Mallery (2003)). The conclusion was that there were some statistically significant differences in the responses given on some items for both public/private organizations and the whole organization/ business unit responses. No clear patterns emerged and although examining the differences between public and private organizations was outside the scope of the current study, it did raise a concern over different factor structures for both these categories (Hair, Anderson et al. (1998)).

The test of means on the leadership levels confirmed that this category was showing signs of bias on the response from the different leadership levels, as expected due to the 'key informant' problem (Downey and Slocum (1975); Bourgeois (1985); Dess, Lumpkin et al. (1997); Kanji and Sá (2001a)). Although there were differences across a number of items, the measurement of the Strategic Capability in Part 2 and Leadership Excellence in Part 5 of the questionnaire were the two that were most effected. As a consequence, consideration was given to removing both the 'Middle Manager' and 'Other' categories from the data analysis, but the main conclusion was that the test of means was in need of re-visiting once the final variates had been identified.

4.1.3 Treatment of missing data

Hair advised that missing data may only be replaced by imputations when the data is missing completely at random (MCAR) (Hair, Anderson et al. (1998)). Calculation revealed that 0.30% of the data was missing and inspection of the cases that had missing interval variables identified case 6 as a potential for removal (16 missing variables), followed by case 31 (10 missing) and 128 and 179 at 7 missing each. From a variable perspective, item 4.37 had 7 missing responses, items 4.6, 1.36 and 4.38 had 6 missing responses and item 4.15 had 5 missing responses. No cases or variables were removed at this point.

Analysis of the data concluded that missing data was MCAR supporting the use of an imputation method, which was mean substitution (Hair, Anderson et al. (1998)). It is recognized that a Little's test could have been performance to support this conclusion.

4.1.4 Graphical examination of the data

All the interval variables were examined to assess their degree of normality and to identify potential outliers (cases and variables). Table 4-3 presents the range of skewness and kurtosis statistics for all the interval data by questionnaire part. Taking the guidelines given by Hair, that skewness should be within a range of plus/ minus 1 and kurtosis plus/ minus 3 (Hair, Babin et al. (2003)), the only item that caused concern was item 4.19. This did have a number of outliers identified, but was not the only one. In total, 187 potential outliers were identified originating from 78 cases across the data set. Case 51 was the most frequent cause of outliers and this contributed 9 outliers.

Table 4-3: Skewness and kurtosis statistics by part

Part	Skewness	Kurtosis
One - Environment	-0.77 to 0.03	-1.07 to 0.18
Two - Capability	-1.01 to - 0.14	-0.75 to 0.97
Four - Performance	-0.35 to 1.55	-1.00 to 3.36
<i>Result excluding item 4.19</i>	-0.35 to 1.01	-1.00 to 1.00
Five - Leadership excellence	-1.14 to -0.56	-0.69 to 1.12

An analysis of the outliers was also conducted from an item perspective, as it was possible that the variable was an outlier as opposed to the specific cases. The nature of the outliers in respect of the key categories was also examined to see if this was a cause. A summary of the analysis is presented in Appendix 5: Analysis of outliers by item.

4.1.5 Summary of interval data examination

The analysis of the missing data, descriptive statistics, outliers, and the data in Table 4-3 and Appendix 5: Analysis of outliers by item, enabled a number of conclusions to be drawn:

- Missing data was missing completely at random (MCAR) and so imputation techniques may be applied (Hair, Anderson et al. (1998)).
- The data exhibited a normal distribution, with the exception of item 4.19, which was a Societal Performance item *'Develops policies to reduce and prevent health*

and safety risks'. On reflection it was noted that this item had double-barreled wording (Churchill and Iacobucci (2002)).

- A number of potential outliers were identified (187 in total) which represented 0.50% of the observations collected.
- Case 51 was identified as a potential for removal as this had contributed 9 outliers. This was followed by cases 151, 153, 171 that contributed 7 each.
- There was evidence that some of the outliers on Part 5 Leadership may be caused by the leadership level of the respondent. There was also a suggestion that 'Whole organization' responses were potentially leading to a number of outliers.
- There were a total of 11 potential outlier variables, with 1 in Part 1 Environment and Part 2 Strategic Capability, 4 in Part 4 Performance and 5 in Part 5 Leadership.

At this stage, no data was removed from the data set, the conclusions being captured to inform decisions later in the analysis.

4.2 Purify the instruments

4.2.1 Outline of approach taken

A unique feature of the research was that the scales were modified to allow their use in public sector organizations. However, all the original scales were derived from theory and, in some cases, scales had been used by several previous researchers.

Purification was conducted using two methods. First, the inter-item correlations and Cronbach's alpha on the scales as defined on the questionnaire were examined, seeking any inter-item correlation below 0.3 (Hair, Anderson et al. (1998)) and to ensure that the alphas were above the minimum acceptable level of 0.60 (Nunnally (1967)). Purification consisted of removing any suspect items and re-calculating the alpha, being mindful that, whereas reducing the number of items lowers reliability (Churchill and Peter (1984)), the acceptable alpha is dependent on the number of items in the scale (Peterson (1994); Foreman and Money (2004)).

The second method, Exploratory Factor Analysis (EFA) was used to examine the scales on a scale-to-scale basis. As noted by Hair, factor analysis is an interdependence technique, and one of the conditions of its use is that there are no independent/independent relationships (Hair, Anderson et al. (1998)). For this reason, EFA was not

used as a technique to examine the underlying structure of all the items in the questionnaire, although it did seek to confirm the structure of the individual instruments as opposed to be used to simplify the data. The factor analysis was conducted on the full sample of 193 responses and varimax rotation used. Hair suggested a factor loading of 0.40 for such a sample size (Hair, Anderson et al. (1998)) and this was used as a starting point for the easy-read matrix. Factors were selected based on their Eigen values being > 1.0, the percentage of variance being > 60% and the ability to assign logical names (Hair, Babin et al. (2003)). Once the factors had been identified, correlation analysis was used to examine the reliability of the purified scales.

The descriptive statistics of the resulting variates were also examined to ensure that the basic assumptions of the use of the multi-variate techniques were not violated (Hair, Anderson et al. (1998)).

Given the preceding analysis, a decision was made as to what variates should be used in the analysis for each construct. On one hand, the EFA route had the potential to develop variates that were a closer fit to the data collected, especially given the fact that the sample included both public and private sector organizations. On the other hand, Churchill noted that there is a good reason for keeping the original variables when they were developed from the theory (Churchill (1979)). In the end, the selection of the measures was based on a number of factors, including their reliability, their relevance and the impact of increasing the number of variates as a ratio to the number of observations, with one in five being the lower limit whereas fifteen to twenty per variate is more acceptable (Hair, Babin et al. (2003)).

A final activity before moving onto the next stage of estimating the model was to perform a cluster analysis, a technique also used by Agus and Sagir (2001) in his research to classify the level of TQM adoption. The earlier test of means suggested some statistically significant differences between results from the different categories. It was thought prudent to check at this stage that the main categories were not falling into discriminate groups (Hair, Anderson et al. (1998)).

4.2.2 Part 1- Environment Dynamics

It was noted that there were no major problems with the data identified during the data examination stage of this analysis for the Environment instrument, with just one outlier being identified on item 1.3, case 95.

The work of Hart and Banbury noted that the original Dess and Beard scale had a 3-factor solution of Complexity, Munificence and Turbulence, whereas their own studies revealed a 4-factor solution which, regrettably, is not given (Hart and Banbury (1994)). They reported alphas of between 0.63 and 0.67 for the three-factors, whereas in this study, the factors varied from 0.23 to 0.73, there being a problem on the 2-item factors. In using the scale Lindgren chose to combine the 12 factors into one scale, resulting in an alpha of 0.764 before purification by removing one item (1.9: *Actions by my firm heavily affect our competitors*), which led to a final alpha of 0.770 (Lindgren (2001)). In the current study the alpha using all 12 items was 0.688. Three items had an inter-item correlation below 0.3, one of which was the same as that removed by Lindgren. The other two were item 1.6, '*The business outlook for the next 12 months looks good/ **The public service outlook for the next 12 months looks good***', and item 1.10, '*The market will grow for several years/ **Public sector spending will grow for several years***'. Given the state of the public sector, where the government has an aggressive aim to reduce public sector spending, it is not unsurprising that there were marked differences between public and private perceptions. The alpha using the 9-item scale was 0.770, and so this scale was selected as a solution.

The initial factor analysis on all items gave a measure of sampling adequacy (MSA) of 0.725 with no individual items having an MSA of below 0.5 (Hair, Anderson et al. (1998)). Three different factor scenarios were considered, these being 3, 4 and 5-factors, and the results compared to those of Hart and Banbury and Lindgren. Of the three solutions, the 3 and 4-factor solutions identified Munificence as a separate factor. Complexity and Turbulence did not separate into discrete factors in any of the three solutions. The percentage of variance explained was 52% in the 3-factor solution, 62% in the 4-factor and 70% in the 5-factor, thereby rejecting the 3-factor solution. With both the 4-factor and 5-factor solutions, a number of items loaded on two or more factors, most of the alphas were below the threshold of 0.6 and no logical names could be given to the factors. For these reasons all the factor solutions were rejected and a summated score on the 9-items identified by looking at the correlations used in the analysis as the Environment Dynamics variate. The descriptive statistics of the final scale are given in Table 4-4.

Three outliers were identified, with case 30 being at the top end of the scale and cases 52 and 183 at the lower. The critical ratios were both within the + or -1.96 limit, indicating normality (Sharma (1996)).

Table 4-4: Environment variate reliability and descriptive statistics

Items					
1.1	Our customers' requirements are continually changing rapidly				
1.2	The social values in society are continually changing rapidly				
1.3	There are many unforeseen threats that we have to cope with				
1.4	The performance of our organization is highly influenced by unpredictable public politics				
1.5	Our business environment is very complex with many unclear factors and relations influencing our organization/ Our public service environment is very complex with many unclear factors and relations influencing our organization				
1.7	The business environment is continually changing rapidly/The public service environment is continually changing				
1.8	It is very difficult to anticipate change in the business environment/It is very difficult to anticipate change in the public service environment				
1.11	New competition is unpredictable/Demand for our resources is unpredictable				
1.12	The innovation rate in the market is high/The number of policies and new initiatives is high				
	Alpha	Mean	SD	Skewness (CR)	Kurtosis (CR)
	0.770	4.634	0.852	-0.217 (-1.24)	0.149 (0.43)

4.2.3 Part 2 – Strategic Capability

During the examination of the data it was noted that there was a problem with item 2.3, where 19 outliers were identified. The inspection of the correlations, however, showed that the two components, Robustness and Response Capability, had alphas of 0.911 and 0.907 and no items had an inter-item correlation of below 0.3.

On running the EFA, the MSA was 0.912 with no individual item having an MSA below 0.5. A 4-factor solution was extracted, all of which had an Eigen value above 1, and the percentage of variance explained was 63%. The factors, together with their corresponding item loadings, are given in Table 4-5.

Table 4-5: Strategic Capability factors from EFA

Factor	Components and Loading					
Response Capability	2.21	Conceptualize a response and make decisions and plans to meet opportunities	.819			
	2.22	Reconfigure resources and implement necessary changes to meet opportunities	.799			
	2.19	Reconfigure resources and implement necessary changes to meet threats	.772			
	2.18	Conceptualize a response and make decisions and plans to meet threats	.749			
	2.20	Sense new business or technological opportunities	.664			
	2.17	Sense potential threats (legislative, political, technological, competitive, customer demands etc)	.564			
	2.1	Leadership approach	.509			
Strategy Robustness	2.3	Business concept		.780		
	2.4	Long-term goals		.706		
	2.5	Market strategy		.637		
	2.6	Service/ product portfolio		.627		
Organizational Robustness	2.11	Financial strategy			.828	
	2.12	Financial viability			.740	
	2.8	Human resource strategy			.556	
Knowledge Robustness	2.14	Information management and knowledge strategy				.771
	2.15	Sustainability (corporate & social responsibility) strategy				.626
	2.9	Competency (skills) base				.549

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. a Rotation converged in 7 iterations.

Table 4-6 summarizes the descriptive statistics for the variates. As can be seen there were some problems identified with normality in that the critical ratio indicated high skewness in three out of the four variates. One potential outlier, case 51, was identified on the Response Capability variate and two cases, 55 and 144, on the Organizational Robustness variate.

Table 4-6: Strategic Capability factors reliability and descriptive statistics

Factor	Alpha	Mean	SD	Skewness (CR)	Kurtosis (CR)
Response Capability	0.912	4.723	1.043	-0.782 (-4.47)	0.170 (0.49)
Strategy Robustness	0.811	4.991	1.028	-0.609 (-3.48)	0.198 (0.57)
Organizational Robustness	0.749	4.696	1.202	-0.451 (-2.56)	-0.082 (-0.24)
Knowledge Robustness	0.671	4.496	1.004	-0.139 (-0.79)	-0.411 (1.18)

A secondary factor analysis was conducted to see if the scale could be further simplified and all the factors loaded onto a single factor explaining 68.7% of the variance. A summated single variate 'Strategic Capability' was therefore computed. This variate had a mean of 4.723, SD of 0.887, skewness of -0.509 and kurtosis of 0.18, with critical ratios being -2.91 and 0.53, respectively. A number of potential outliers were identified, these being cases 51, 144 and 171. Removing these outliers led to revised critical ratios of -1.27 and -1.96 indicating normality, which was confirmed by a non-significant Kolmogorov-Smirnov test (Sharma (1996); Hair, Anderson et al. (1998)). The Cronbach's alpha for the scale with all the data was 0.846.

4.2.4 Part 4 – Performance

Examining the Performance items showed that there was a non-normality problem with item 4.19. In addition, four of the items, 4.1, 4.4, 4.7 and 4.19 had a number of outliers. Calculating the inter-item correlations determined that no correlations were below 0.3, and Table 4-7 lists the Cronbach Alpha's for each of the stakeholder groups.

Table 4-7: Reliability statistics for the stakeholder groups

Stakeholder Group	Number of Items	Cronbach Alpha
Customer satisfaction	7	0.802
Employee satisfaction/ motivation	11	0.910
Social responsibility	8	0.878
Key outcomes	11	0.891

An EFA was run for the complete performance set giving an overall MSA of 0.888 and all the individual items had an MSA above 0.5. Potential of 8 and 9-factor solutions were identified. The 9-factor solution varied from the 8-factor by separating the items related to recruitment, but this did lead to one item loading on the two separated factors. The 8-factor solution was therefore selected and Table 4-8 lists the factors and their corresponding item loadings and Table 4-9 the reliability and descriptive statistics.

Table 4-8: Performance factors from EFA

Factor	Components and Loading									
Employee Results	4.14	Has improving levels of employee satisfaction over time	.806							
	4.13	Has high employee satisfaction	.792							
	4.11	Develops its staff at all levels of seniority	.697							
	4.10	Has the ability to retain outstanding staff	.643							
	4.12	Collects relevant information from employees to measure their satisfaction	.633							
	4.18	Ensures individuals know how to contribute to the success of the organization	.582							
	4.17	Has a well-defined people management plan linked to the overall business plan	.534							
	4.19	Has recruited outstanding staff	.521							
	4.8	Has undertaken recruitment and admission of employees effectively	.509							
Employee Absence	4.16	Has low employee turnover compared to the industry standard/ compared to the public service norms		.785						
	4.15	Has low absenteeism compared to the industry standard/ compared to the public sector norms		.752						
Key Outcomes	4.34	Has a positive cash flow/ balanced budget			.777					
	4.29	Has a strong financial performance			.729					
	4.33	Has high profitability/ provides value for money			.722					
	4.30	Achieves it goals			.683					
	4.39	Has a good overall organizational performance			.673					
	4.31	Has achieved the desired service and/ or product outcomes			.605					
	4.32	Has a high competitive position/ performance rating			.592					
	4.1	Has a high customer demand/ Has a high demand for its services			.470					
New Products and Services	4.37	Will introduce new products and services				.827				
	4.36	Will change its existing products and services				.822				
	4.38	Will have an active services and/ or product development programme					.714			
	4.35	Will seek to diversify in the marketplace/ sub-contract additional services					.639			

Factor	Components and Loading									
Customer Results	4.2	Is concerned about collecting information from its customers in order to measure their satisfaction					.679			
	4.4	Has implemented a process to listen to and solve customer complaints				.678				
	4.3	Has customers whose satisfaction that has improved over time				.580				
	4.7	Has a high standard of quality in service and/ or products				.505				
Sustainability	4.20	Develops policies to protect the environment					.863			
	4.23	Is environmentally responsible					.819			
	4.25	Follows sustainability policies					.702			
	4.19	Develops policies to reduce and prevent health and safety risks					.684			
Community	4.21	Is actively involved in the local community						.804		
	4.22	Is well respected by the local community					.738			
	4.24	Develops the local economy						.561		
Growth	4.6	Has an increasing market share/ Has an increasing share of budget							.898	
	4.5	Has a positive sales growth /Has increased funding							.881	

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.
a Rotation converged in 8 iterations.

Table 4-9: Performance reliability and descriptive statistics

Factor	Alpha	Mean	SD	Skewness (CR)	Kurtosis (CR)
Employee Results	0.910	4.654	1.140	-0.410 (-2.34)	-0.277 (-0.80)
Employee Absence	0.729	4.809	1.417	-0.571 (-3.26)	-0.031 (-0.09)
Key Outcomes	0.899	5.139	1.030	-0.739 (-4.22)	0.548 (1.57)
New Products and Services	0.837	4.641	1.205	-0.524 (-2.99)	0.227 (0.65)
Customer Results	0.816	5.193	1.103	-0.785 (-4.49)	0.685 (1.97)
Sustainability	0.880	5.165	1.237	-0.938 (-5.36)	0.868 (2.49)
Community	0.823	4.794	1.492	-1.026 (-5.86)	0.492 (1.41)
Growth	0.912	4.220	1.634	-0.200 (-1.14)	-0.756 (-2.17)

From the critical ratios in Table 4-9 it can be seen that there is a potential problem with skewness on all the variates and with kurtosis on a number. A number of potential outliers were also identified, with Case 51 being an outlier on Employee Results, Key Outcomes and Customer Results. It was also a potential outlier on New Products and Services along with cases 53 and 129, and Sustainability with Cases 16, 123, 153 and 171.

Due to the number of factors, a secondary factor analysis was conducted. Using all the factors 2 and 3-factor solutions were examined, with the 3-factor solution giving a clear sustainability factor and two results factors with separate factors cross loading.

Table 4-10 gives the factor loadings of the three components and Table 4-11 provides the descriptive statistics.

Table 4-10: Performance factors from secondary EFA

Factor	Components and Loading			
	Component	Loading		
CSR (Corporate & Social Responsibility)	Community	.877		
	Sustainability	.863		
Employee Outcomes	Employee Absence		.885	
	Employee Results		.633	
Organization Outcomes	New Products and Services			.767
	Key Outcomes			.668
	Growth			.617
	Customer Results			.574

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

a Rotation converged in 5 iterations.

Table 4-11: Secondary performance factors reliability and descriptive statistics

Factor	Alpha	Mean	SD	Skewness (CR)	Kurtosis (CR)	Potential Outliers
CSR	0.773	4.980	1.237	-1.044 (-5.97)	0.968 (2.78)	16, 51, 123, 153, 171
Employee Outcomes	0.694	4.731	1.125	-0.416 (-2.38)	0.029 (0.08)	51
Organization Outcomes	0.677	4.798	0.901	-0.613 (-3.50)	0.946 (2.72)	51, 106, 153

A final activity was to see if the three secondary factors loaded onto a single Performance factor. This was found to be the case with the combined factors explaining 63% of the variance. This variate had a mean of 4.836 and a SD of 0.864. Skewness was -0.791 and kurtosis 1.695, with critical ratios of -4.52 and 4.87 , respectively. Cases 51, 153 and 171 were noted as potential outliers and removing these outliers resulted in a non-significant Kolmogorov-Smirnov test (Sharma (1996); Hair, Anderson et al. (1998)).

4.2.5 Part 5 – Leadership excellence

The final construct is Leadership Excellence and this is the construct where most problems were expected. Examination of the data indicated that there were statistically significant differences in the responses of leaders at different levels, and a total of 5 of the 26 items were potential outlier variables. These were:

- '5.7 *Leaders identify the organization's purpose*'
- '5.10 *Leaders develop policies and strategies consistent with the organization's mission, vision and values*'
- '5.11 *Leaders anticipate change*'
- '5.15 *Leaders monitor resources and use feedback to review strategies for customer satisfaction*'
- '5.20 *Leaders are accessible*'

The scale for Leadership Excellence was based on the work of Kanji (Kanji and Sá (2001a)) and it must be remembered that the model contained six constructs. Data was collected for all six constructs in this study although only one related to the measure of Leadership Excellence, which was the prime focus of this study. Despite this, the purification of the instrument looked at all six areas. Examination of the reliability showed that no item had an inter-item correlation of below 0.3 and the alphas, compared to those reported elsewhere, are given in Table 4-12.

Table 4-12: Reliability statistics for Kanji's leadership instrument

Construct	Reported Alphas (Kanji and Sá (2001a))	Cronbach Alpha This Study
Organizational Values	0.844	0.923
Vision	0.736	0.930
Mission	0.790	0.912
Strategy	0.906	0.921
Key Issues	0.927	0.922
Leadership Excellence	0.978	0.946

The EFA returned an MSA of 0.946 and no individual item was lower than 0.5. The initial factor solution identified 3-factors accounting for a total of 73.4% of variance. In this solution, Leadership Excellence and Key Issues were clearly identified as two factors,

and the remaining items clustered into the third factor. A 6-factor solution was then run and this accounted for 82.5% of variance. This gave a clear Leadership Excellence factor, a Mission/ Vision factor, a Key Issues factor, an Organizational Values Factor, a Strategy factor a mixed Key Issues/ Strategy factor. It was therefore decided to use the Leadership Excellence factor as a single summated score.

Examining the descriptive statistics of the summated factor gave a mean of 4.974, a standard deviation of 1.197, skewness of -0.640 and kurtosis of -0.125, with critical ratios of -3.66 and - 0.36, respectively. One outlier, case 51, was identified as a potential problem. Removing this outlier resulted in a statistically significant Kolmogorov-Smirnov test, suggesting that there was still a potential problem with normality (Sharma (1996); Hair, Anderson et al. (1998)).

4.2.6 Multicollinearity

To check for multicollinearity a correlation matrix of the independent variates was conducted (Table 4-13). This analysis indicated that there was a statistically significant correlation between Leadership Excellence and Strategic Capability, indicating that multicollinearity between these two variates was a potential problem.

Table 4-13: Correlation matrix of the independent variates

	Environment Dynamics	Leadership Excellence	Strategic Capability
Environment Dynamics	1		
Leadership Excellence	0.030	1	
Strategic Capability	-0.002	0.563 (**)	1

** Correlation is significant at the 0.001 level (2-tailed).

4.2.7 Cluster analysis

Before moving on to test the hypotheses, it felt prudent to use cluster analysis to establish whether the data fell into discrete groups for public and private, whole business and business unit and level of leadership natural groups. Agus and Sagir (2001) took a similar approach in his work. The cluster analysis was run using all the independent variates against the three categories, and the count of the numbers in each of two or four clusters is given in Appendix 6: Cluster analysis of variates by category. The cluster analysis made use of Ward's method. The conclusion from the analysis was that no category of responses was falling into a specific group and, as a consequence, the data could be treated as a homogenous group.

4.2.8 Test of means on final variates

As a final check a series of test of means was conducted to examine the effect of the different categories for the final variates. Table 4-14 summarizes the means and standard deviations for public vs. private sector and whole organization vs. business unit samples, with Table 4-15 giving the independent sample results for the Private Vs Public sector and Table 4-16 for Whole Organization Vs Business Unit. The conclusion from these results is that there is a statistically significant difference between the Performance means of the public and private sector samples, suggesting that Private sector organizations were achieving a higher level of performance than public sector organizations using the instrument developed.

Table 4-14: Test of means on final variables – Sector and Organization

Category	N	Environment Dynamics		Strategic Capability		Leadership Excellence		Performance	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD
Private Vs Public Sector									
Private	92	4.443	.833	4.929	.932	5.018	1.154	4.937 *	.978
Public	101	4.808	.834	4.541	.805	4.882	1.236	4.744 *	.737
Whole Organization Vs Business Unit									
Whole Organization	110	4.737	.825	4.631	.876	4.788	1.220	4.742	.914
Business Unit	83	4.498	.872	4.854	.891	5.158	1.138	4.961	.779

* p<0.05, ** p<0.001. t-test: Levene's test of equality of means

Table 4-15: Independent samples test Private Vs Public sector

Variate	Condition	Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Environment Dynamics	Equal variances assumed	.042	.838	-3.037	191	.003	-.365	.120	-.602	-.128
	Equal variances not assumed			-3.037	189.402	.003	-.365	.120	-.602	-.128
Strategic Capability	Equal variances assumed	1.577	.211	3.105	191	.002	.388	.125	.142	.635
	Equal variances not assumed			3.084	180.742	.002	.388	.126	.140	.637
Leadership Excellence	Equal variances assumed	1.295	.257	.788	191	.432	.136	.173	-.204	.477
	Equal variances not assumed			.791	190.878	.430	.136	.172	-.203	.475
Performance	Equal variances assumed	6.654	.011	1.564	191	.119	.194	.124	-.051	.438
	Equal variances not assumed			1.544	168.405	.124	.194	.126	-.054	.442

Table 4-16: Independent samples test Whole Organization Vs Business Unit

Variate	Condition	Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Environment Dynamics	Equal variances assumed	.528	.468	1.943	191	.053	.239	.123	-.004	.481
	Equal variances not assumed			1.928	171.371	.055	.239	.124	-.006	.483
Strategic Capability	Equal variances assumed	.427	.514	-1.736	191	.084	-.223	.128	-.476	.030
	Equal variances not assumed			-1.732	175.181	.085	-.223	.129	-.476	.031
Leadership Excellence	Equal variances assumed	.935	.335	-2.147	191	.033	-.370	.172	-.710	-.030
	Equal variances not assumed			-2.168	182.584	.031	-.370	.171	-.707	-.033
Performance	Equal variances assumed	.483	.488	-1.751	191	.081	-.219	.125	-.465	.028
	Equal variances not assumed			-1.791	188.151	.075	-.219	.122	-.456	.022

Table 4-17 summarizes the means given by the various levels of leadership for each of the four constructs.

Table 4-17: Test of means on final variables – Leadership level

Category	N	Environment Dynamics		Strategic Capability		Leadership Excellence		Performance	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD
Most senior executive	59	4.694	.833	4.871	.760	5.525	.979	5.013	.751
Senior manager	101	4.531	.857	4.801	.916	4.860	1.141	4.837	.922
Middle manager	25	4.686	.745	4.385	.764	4.269	1.193	4.595	.710
Other	8	5.328	1.006	3.780	1.056	3.911	1.437	4.286	1.041
Total	193	4.634	.852	4.727	.887	4.947	1.197	4.836	.864

Examining the breakdown of the Post Hoc ANOVA results showed that there were differences at all levels and that these differences varied depending on the variable. Table 4-18 summarizes the ANOVA analysis and Table 4-19 the post-hoc difference in means analysis. LSD was used as a technique as it is the most conservative.

Table 4-18: ANOVA results for final variates - Leadership levels

Variate	Condition	Sum of Squares	df	Mean Square	F	Sig.
Environment	Between Groups	5.200	3	1.733	2.444	.065
	Within Groups	134.057	189	.709		
	Total	139.257	192			
Capability	Between Groups	11.904	3	3.968	5.391	.001
	Within Groups	139.114	189	.736		
	Total	151.017	192			
Leadership Excellence	Between Groups	40.603	3	13.534	10.917	.000
	Within Groups	234.313	189	1.240		
	Total	274.916	192			
Performance	Between Groups	5.712	3	1.904	2.618	.052
	Within Groups	137.449	189	.727		
	Total	143.160	192			

One must be mindful of the low sample sizes at the Middle Manager and Other Manager leadership levels when examining the results. One conclusion is that the level of respondent was a limitation in the research with particular reference to the difference between the Most Senior and Senior Manager level on the Leadership Excellence responses. Secondly, when computing the regression results the calculations were repeated with samples taken at the different levels to ensure that these differences were not having a major impact on the results. It might be that a different effect would be observed if the lower two leadership levels were omitted from the analysis.

Table 4-19: Post hoc ANOVA results on leadership levels (Multiple comparisons)

Variate	(I) Level of respondent	(J) Level of respondent	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Environment	Most senior executive	Senior manager	.163	.138	.240	-.110	.435
		Middle manager	.008	.2010	.968	-.389	.405
		Other	-.634(*)	.317	.047	-1.260	-.008
	Senior manager	Most senior executive	-.163	.138	.240	-.435	.110
		Middle manager	-.155	.188	.412	-.526	.216
		Other	-.797(*)	.309	.011	-1.407	-.187
	Middle manager	Most senior executive	-.008	.201	.968	-.405	.388
		Senior manager	.155	.188	.412	-.216	.526
		Other	-.642	.342	.062	-1.317	.033
	Other	Most senior executive	.634(*)	.317	.047	.008	1.260
		Senior manager	.797(*)	.309	.011	.187	1.407
		Middle manager	.642	.342	.062	-.033	1.317

Variate	(I) Level of respondent	(J) Level of respondent	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Capability	Most senior executive	Senior manager	.070	.141	.621	-.208	.347
		Middle manager	.487(*)	.205	.018	.083	.891
		Other	1.092(*)	.323	.001	.454	1.730
	Senior manager	Most senior executive	-.070	.141	.621	-.347	.208
		Middle manager	.417(*)	.192	.031	.039	.795
		Other	1.022(*)	.315	.001	.401	1.644
	Middle manager	Most senior executive	-.487(*)	.205	.018	-.891	-.0823
		Senior manager	-.417(*)	.192	.031	-.795	-.039
		Other	.605	.349	.084	-.082	1.293
	Other	Most senior executive	-1.092(*)	.323	.001	-1.730	-.454
		Senior manager	-1.022(*)	.315	.001	-1.644	-.401
		Middle manager	-.605	.349	.084	-1.293	.082

Variate	(I) Level of respondent	(J) Level of respondent	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Leadership Excellence	Most senior executive	Senior manager	.665(*)	.182	.000	.306	1.025
		Middle manager	1.257(*)	.266	.000	.733	1.781
		Other	1.614(*)	.420	.000	.787	2.442
	Senior manager	Most senior executive	-.665(*)	.182	.000	-1.025	-.306
		Middle manager	.591(*)	.249	.018	.101	1.08
		Other	.949(*)	.409	.021	.143	1.76
	Middle manager	Most senior executive	-1.257(*)	.266	.000	-1.781	-.733
		Senior manager	-.591(*)	.249	.018	-1.082	-.101
		Other	.358	.452	.430	-.534	1.250
	Other	Most senior executive	-1.614(*)	.420	.000	-2.442	-.787
		Senior manager	-.949(*)	.409	.021	-1.756	-.143
		Middle manager	-.358	.452	.430	-1.250	.534

Variate	(I) Level of respondent	(J) Level of respondent	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Performance	Most senior executive	Senior manager	.176	.140	.210	-.100	.452
		Middle manager	.417(*)	.204	.042	.016	.819
		Other	.727(*)	.321	.025	.093	1.361
	Senior manager	Most senior executive	-.176	.140	.210	-.452	.100
		Middle manager	.242	.191	.206	-.134	.617
		Other	.551	.313	.080	-.067	1.169
	Middle manager	Most senior executive	-.418(*)	.204	.042	-.819	-.016
		Senior manager	-.242	.191	.206	-.617	.134
		Other	.309	.346	.373	-.374	.992
	Other	Most senior executive	-.727(*)	.321	.025	-1.361	-.093
		Senior manager	-.551	.313	.080	-1.169	.067
		Middle manager	-.309	.346	.373	-.993	.374

LSD * The mean difference is significant at the .05 level.

4.2.9 Summary

In bringing this section to a conclusion a number of observations are made. These are:

- A total of 6 variates have been identified: Environment Dynamics, Strategic Capability, Leadership Excellence, Organizational Outcomes, Employee Outcomes and Corporate & Social Responsibility (CSR), the first three being independent variables and the latter three, dependent variables. Simple descriptive statistics (Sharma (1996); Hair, Anderson et al. (1998)) indicate that the data approached normality in all cases and all Cronbach alphas were above the 0.60 threshold. The items used in the factor analysis all had an MSA above the 0.5 threshold.
 - The Environment Dynamics variate is composed of a 9-item summated scale. Three cases were identified as potential outliers, these being cases 30, 52 and 183.
 - The Strategic Capability variate was developed as a summated score from four primary factors, these being Response Capability, Strategy Robustness, Organizational Robustness and Knowledge Robustness. Three potential outliers were identified, these being cases 51, 144 and 171.
 - A factor analysis confirmed the Leadership Excellence variate, which was based on the work of Kanji (Kanji and Sá (2001a); Kanji (2002)). One potential outlier, case 51, was identified.
 - Three-second order Performance dependent variates were developed, Organizational Outcomes, Employee Outcomes and CSR using a secondary factor analysis of eight primary factors. Several potential outliers were identified for Organizational Outcomes cases (51, 106 and 153), Employee Outcomes (case 51) and CSR (16, 51, 123, 153 and 171). The 3-second order factors also loaded onto a single factor, Performance. Cases 51, 153 and 171 were identified as potential outliers on this variate.
- Three other variates were identified in an earlier section of the Chapter, these being two for organization Size (LogP and LogT) and one for the Replacement Period (LogTime).
- Three categoric variables were also defined. These are private and public sector, whole organization vs. business unit and the level of respondent.
- A correlation analysis identified a high level of multicollinearity between two of the independent variates, Leadership Excellence and Strategic Capability

- A cluster analysis supported the assumption that the data formed a homogenous group. Testing means on the final variates by categoric variable suggested that the level of leadership might have an impact on the analysis.

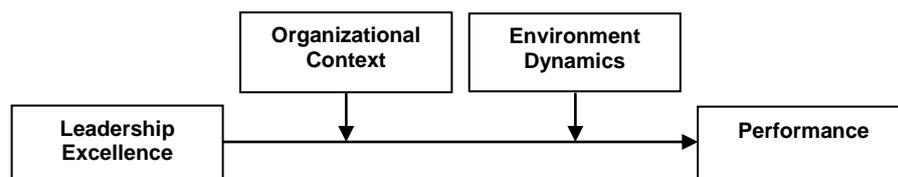
4.3 Estimate the models and interpret the results

Although shown as two separate steps in Figure 4-1, the estimation of the models following the guidelines given in Table 3-19 and the interpretation of the output is discussed here under one section for convenience. The emphasis in this section is one of statistical significance, practical significance being the main focus of the next Chapter.

The last section concluded with a number of observations relating to the set of variates that have been developed for use in the analysis. Due to the number of outliers, and the fact that the test of means showed that the level of leadership could be having an impact, all the models were run first with all data, then with the outliers removed, then with just the top two leadership levels and then, finally, with both the outliers removed and only using the top two leadership levels. In some instances the sample was also split into private and public sector responses.

4.3.1 Leadership Excellence and Performance

One of the key questions investigated by this research was whether Business Excellence, as measured through the Leadership Excellence construct, was correlated to higher levels of performance. A number of simple regression equations were run in order to establish whether such relationships could be determined. Each hypothesis will be examined in turn based on the defined research model:



4.3.1.1 H1: There will be a positive relationship between the level of Leadership Excellence and Performance

For this hypotheses simple regression equations were run with Leadership Excellence as the independent variable and Performance as the dependent variable. Table 4-20 provides the results of the regression. Plots of the residual errors against the predicted errors showed a random scatter plot and approaching normal distribution in all cases supporting the linearity of the data.

Table 4-20: Regression of Leadership Excellence and Performance

Data Set	R ²	Sig F	B	Stand Beta	Sig t
All data	0.319	0.000	0.408	0.565	0.000
Less outliers	0.251	0.000	0.331	0.501	0.000
Top leaders	0.295	0.000	0.416	0.543	0.000
Top leaders less outliers	0.232	0.000	0.340	0.482	0.000

The results show support for the hypothesis that Business Excellence, as measured through Leadership Excellence, has a positive relationship with the Performance. The conclusion was not effected by the removal of the outliers or by only taking the top leaders' responses.

As an additional test the Comprehensive Performance Ratings (CPA) for some public sector respondents were obtained from the Audit Commission (site:www.audit-commission.gov.uk/cpa/index). The ratings for 45 respondents on a Poor, Weak, Fair, Good and Excellent rating system were treated as the dependent variable with Leadership Excellence being the independent variable. The model had a poor fit ($R^2 = 0.1$ and non-significant) and Leadership Excellence was non-significant. This result was not considered to be important, as the CPA ratings were only available for the organization as a whole and not at a Business / Service Unit level. For example, the closest to a police rating was the rating for the respective local council.

4.3.1.2 H1a: The strength of the relationship will be similar with private sector organizations and public sector organizations

Simple regressions were run with a split sample to examine whether there was a difference between the strength of the relationship between Leadership Excellence and Performance for public sector and private sector organizations. The results are given in Table 4-21. Plots of the residual errors against the predicted errors showed a random scatter plot and approaching normal distribution in all cases supporting the linearity of the data.

Table 4-21: Difference between the results for public and private organizations

Data Set	Public Sector					Private Sector				
	R ²	Sig F	B	Stand Beta	Sig t	R ²	Sig F	B	Stand Beta	Sig t
All data	0.403	0.000	0.378	0.635	0.000	0.266	0.000	0.437	0.516	0.000
Less outliers	0.329	0.000	0.312	0.574	0.000	0.196	0.000	0.340	0.443	0.000
Top leaders	0.398	0.000	0.384	0.631	0.000	0.230	0.000	0.452	0.480	0.000
Top leaders less outliers	0.311	0.000	0.308	0.566	0.000	0.181	0.000	0.369	0.425	0.000

The standardized betas indicate that the strength of the relationship between Leadership Excellence and Performance is higher for public sector organizations than for private sector organizations. Removing the outliers and/ or only taking the top-level managers did not have a major impact on the results. It was noted that the coefficient of determination was higher for public sector sample than for the private sector sample, reflecting a weaker fit of the model in the latter case. This was confirmed by examination of the standard deviations, which feature in the calculation of R² and of the standardized betas. Like the other scales used Leadership Excellence is a consistent scale across both samples and so the lower standardized betas in the private sector case may be a consequence of limitations in the data as opposed to being a signal of a weaker relationship.

Due to the concern with the data, a second regression was run including the private/ public category as a dummy variable. This resulted in an R² of 0.326 and standardized beta of 0.560 for Leadership Excellence. Crucially, the dummy variable for the sector was non- significant, indicating that the results from the two sectors were not statistically significantly different. On this evidence the hypothesis was accepted

4.3.1.3 H1b: The strength of the relationship will be higher with whole organizations than business units

To test this hypothesis a simple regression was run on the complete data sample with the Whole Organization/ Business Unit included as a dummy variable. The model had an R² of 0.321, was significant to 0.000 and the residuals approached normality. The results are given in Table 4-22, from which it was concluded that Whole Organization/ Business

Unit category did not have an impact on the Leadership Excellence and Performance relationship. The hypothesis was therefore rejected.

Table 4-22: Effect of whole business vs. business unit on the Leadership Excellence and Performance relationship

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.811	.220		12.783	.000		
	Leadership Excellence	.403	.044	.559	9.237	.000	.976	1.024
	Whole or Business Unit	.069	.105	.040	.660	.510	.976	1.024

a Dependent Variable: Performance

4.3.1.4 H1c: Size will have an impact on the strength of the relationship

To test this hypothesis two regressions were run on the complete data sample with organization size as measured by the log (number of people) and log (turnover/ budget). The results are given in Table 4-23 and the residuals approached normality.

Table 4-23: Effect of organization size on the Leadership Excellence and Performance relationship

Size Variate	R ²	Sig F	B	Stand Beta	Sig t
Log (P)	0.356	0.000	0.180	0.205	0.001
Log (T)	0.368	0.000	0.199	0.230	0.000

The results show that organization size, when measured both as a function of number of people and turnover/ budget, does have a statistically significant positive effect on the relationship between Leadership Excellence and Performance. When running the regression with the interaction variable (product of Leadership Excellence and the log of the size variable (LogP or LogT)), neither the size variable nor the interaction variables were statistically significant. This indicates that size was not operating as a moderating variable.

A common cut-off point for SMEs as used by other researchers was 500 persons (Warwood and Roberts (2004)), although a cut off of 250 has also been used (Wiklund

and Shepherd (2003)). The analysis was repeated using a dummy variable for size where organizations with less than 500 people were coded 0 and above 500 1. This resulted in the t-test for the dummy variable for size to be non-significant (Sig. 0.274). The calculation was repeated with a cut-off of 250 employees, but again the dummy variable for size was non-significant (Sig. 0.193). The conclusion was therefore that size does make a difference and that larger organizations display a more positive relationship between Leadership Excellence and Performance than smaller organizations. The hypothesis was therefore accepted. It was not possible to account for the effect by classifying the organizations into large organizations and SMEs.

4.3.1.5 H1d: Leadership Excellence will have a positive relationship with all stakeholder performance results

The next hypothesis considered one of the fundamental concepts of the EFQM Excellence Model®. This was that Business Excellence organizations have a positive impact on all the stakeholder groups, these being the customers, employees, society and the organization itself. To test for these relationships separate regressions were first run on the full data sample using Leadership Excellence as the independent variable and the different Performance variates as the dependent variable where appropriate. Table 4-24 summarizes the results, which are presented in descending standardized beta order. In all cases the residuals approached normality.

Table 4-24: Relationship between Leadership Excellence and different stakeholder Performance measures

Stakeholder	Dependent Variable	R ²	Sig F	B	Stand Beta	Sig t
Employees	Employee Outcomes	0.332	0.000	0.542	0.576	0.000
Organization	Key Outcomes	0.246	0.000	0.427	0.496	0.000
Customer	Customer Results	0.193	0.000	0.405	0.440	0.000
Organization	New Products/ Services	0.126	0.000	0.357	0.355	0.000
Society	CSR	0.097	0.000	0.322	0.312	0.000
Organization	Growth	0.032	0.000	0.246	0.180	0.000

The results show that Leadership Excellence does have a positive impact on Employee Outcomes, Key Outcomes and Customer Results, which are the three main stakeholder groups. The three remaining areas had a poor fit with the regression equation and to test the possibility that this was due to the difference between the public and private sector organizations the regressions were recalculated using a split file (Tanner (2004a)). This

did not have a major effect on the results. The conclusion was drawn that there was support for the hypothesis in the case of the Employee, Organization and Customer stakeholders, but not for the Society stakeholders.

4.3.1.6 H1e: The strength of the relationship will be weaker in highly dynamic environments

One of the hypotheses tested under the Strategic Capability set of hypotheses related to whether the dynamics of the industry had a statistically significant negative effect on its relationship with Performance. It was therefore speculated that the relationship between Leadership Excellence and Performance might be affected in a similar way. A multivariate regression was run with the Environment Dynamics variate and a Leadership Excellence/ Environment Dynamics interaction variable in the model. This led to a model with an R² of 0.360 with an F statistically significant at the 0.000 level. The results are given in Table 4-25.

Table 4-25: Effect of Environment Dynamics on the Leadership Excellence and Performance relationship

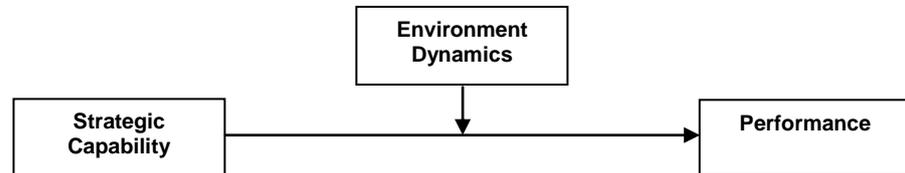
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tol	VIF
1	(Constant)	-1.017	1.164		-.874	.383		
	Leadership Excellence	1.070	.223	1.483	4.803	.000	.035	28.173
	Environment Dynamics	.842	.251	.830	3.355	.001	.055	18.095
	Interaction variable	-.146	.048	-1.206	-3.038	.003	.021	46.574

a Dependent Variable: Performance

From the results in Table 4-25 it appears that the Environment Dynamics is having a moderating effect on the leadership Excellence – Performance relationship, but high multicollinearity with a tolerance of < 0.1 gives cause for concern in drawing conclusions (Hair, Anderson et al. (1998)). As a consequence an alternative model was examined with Environment Dynamics as a dummy variable (see below). This suggested that, although the variable loaded at the 0.1 significance level, the standardized beta was slightly positive at 0.10. The hypothesis was therefore rejected.

4.3.2 Strategic Capability and Performance

The next area examined was the effect of Strategic Capability on an organization's Performance. There was also an interest in seeing whether the Environmental Dynamics affected any relationship. The research model was:



The two hypotheses were:

4.3.2.1 H2: There will be a positive relationship between Strategic Capability and Performance

4.3.2.2 H2a: The strength of the relationship will be weaker in highly dynamic environments

Running two simple regression equations with Strategic Capability and Performance as the dependent variable (model 1), and adding Environment Dynamics as a second independent variable together with an interaction variable (model 2), tested both of these relationships. The results gave an R^2 of 0.521 with an F-factor significance of 0.000 for model 1, with an R^2 of 0.545 and F-factor significance of 0.000 for model 2. The residuals approached normality. Table 4-26 summarizes the results for both models.

The results show that Strategic Capability does indeed have a positive relationship with Performance and that this relationship is strong with a standardized beta of 0.722. This result leads to the acceptance of Hypothesis H2.

Environment Dynamics was also found to be a statistically significant factor, but with a positive relationship. The interaction factor was also statistically significant indicating that Environmental Dynamics was indeed a moderating factor, but as with the Leadership Excellence and Performance relationship above, multicollinearity was too high for such a conclusion to be confirmed. Hypothesis H2a also called for this relationship to be negative and so no evidence could be found to support hypothesis H2a, where the dynamics of the environment were expected to have a negative impact on the relationship between Strategic Capability and Performance.

Table 4-26: Examining the relationship Between Capability and Performance

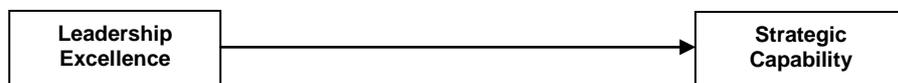
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tol	VIF
1	(Constant)	1.513	.234		6.457	.000		
	Capability	.703	.049	.722	14.426	.000	1.000	1.000
2	(Constant)	-1.368	1.201		-1.139	.256		
	Strategic Capability	1.209	.256	1.242	4.727	.000	.035	28.672
	Environment Dynamics	.644	.265	.635	2.428	.016	.035	28.397
	Interaction variable	-.114	.057	-.739	-2.013	.046	.018	55.981

a Dependent Variable: Performance

It was noted that other researchers had also used a 7-point scale and had chosen to select the 5-7 scores as representing highly dynamic conditions (Das, Handfield et al. (2000)). This approach was also tried with a dummy variable being established to represent moderately dynamic environments (Environment Dynamics score 1 to 5) and highly dynamic environments (Environment Dynamics score 5.0001 to 7). On running the regression the dummy variable was statistically significant at the 0.05 level, but the standardized beta positive and low at 0.14. The hypothesis was therefore rejected.

4.3.3 Leadership Excellence and Strategic Capability

So far we have found that Business Excellence, as measured through Leadership Excellence, does have a positive relationship with Performance taken at an overall perspective and at the People, Organization and Customer stakeholder perspectives. Strategic Capability has also been found to have a positive relationship with Performance. A key question now is whether there is a positive relationship between Business Excellence, as measured through Leadership Excellence, and Strategic Capability. This relationship was summarized in hypothesis H3. The research model for this hypothesis was:



4.3.3.1 H3: There will be a positive relationship between Leadership Excellence and Capability

This hypothesis was tested by running a simple regression equation with Leadership Excellence as the independent variable and Strategic Capability as the dependent variable. Table 4-27 summarizes the results for all data sets. In all cases the residuals approached normality.

Table 4-27: Examining the relationship between Leadership Excellence and Strategic Capability

Data Set	R²	Sig F	B	Stand Beta	Sig t
All data	0.312	0.000	0.417	0.563	0.000
Less outliers	0.255	0.000	0.358	0.505	0.000
Top leaders	0.279	0.000	0.402	0.528	0.000
Top leaders less outliers	0.215	0.000	0.342	0.464	0.000

Again the different data sets did not have a major effect on the results, which showed that there was indeed a positive relationship between Leadership Excellence and Strategic Capability. As a consequence hypothesis 3 was accepted.

The regressions were also run on the original 8 Performance factors splitting the file between public and private organizations as shown in Table 4-28.

Table 4-28: Relationship between Strategic Capability and the eight stakeholder Performance factors

Results Area	Public Sector					Private Sector				
	R ²	Sig F	B	Stand Beta	Sig t	R ²	Sig F	B	Stand Beta	Sig t
Employee Results	0.375	0.000	0.873	0.612	0.000	0.565	0.000	0.917	0.752	0.000
Key Outcomes	0.378	0.000	0.843	0.615	0.000	0.549	0.000	0.913	0.741	0.000
Employee Absence	0.234	0.002	0.877	0.484	0.000	0.102	0.000	0.463	0.319	0.002
Customer	0.153	0.000	0.527	0.391	0.000	0.370	0.000	0.762	0.608	0.000
Community	0.114	0.001	0.475	0.337	0.001	0.294	0.000	1.038	0.542	0.000
New Products/ Services	0.095	0.002	0.442	0.308	0.002	0.102	0.002	0.445	0.319	0.002
Sustainability	0.074	0.006	0.355	0.271	0.006	0.292	0.000	0.834	0.540	0.000
Growth	0.065	0.010	0.491	0.255	0.010	0.356	0.000	0.959	0.597	0.000

The results show some differences between the public and private sector. Although all the results are statistically significant at the 0.05 level, the strength of the relationships vary depending on the stakeholder group/ Performance factor as shown in Table 4-29, where the results have been put in standardized beta order.

Table 4-29: Standardized betas for Strategic Capability and the eight stakeholder Performance factors

Public Sector		Private Sector	
Employee Results	0.612	Employee Results	0.752
Key Outcomes	0.615	Key Outcomes	0.741
Employee Absence	0.484	Customer	0.608
Customer	0.391	Growth	0.597
Community	0.337	Community	0.542
New Products/ Services	0.308	Sustainability	0.540
Sustainability	0.271	Employee Absence	0.319
Growth	0.255	New Products/ Services	0.319

The general trend was that the standardized betas were higher for the private sector organizations, but, as before, there is a health warning on the fit of the data, which makes such conclusions unreliable. Employee Results and Key Outcomes are top of the list for both types of organization, but for private sector organizations the Customer and Growth are the next, with Sustainability also featuring higher up the table. Hair notes that the value of the standardised betas may only be compared in the context of the specific regression that is under examination (Hair, Anderson et al. (1998)), reinforcing the care that needs to be taken over the interpretation of these results.

4.3.4 Strategic Capability is developed over time

Part 3 of the questionnaire considered the factors that led to organizational advantage and sought perceptions on how long it would take to replace such advantages. The work sought to build on the work of Hall (Hall (1991); Hall (1992); Hall (1994)), who asked private sector Chief Executives to consider these factors. In addition, the Business Excellence benefits research (e.g., Hendricks and Singhal (2001a)) raised the debate as to when the benefit of the approach is delivered. For these reasons Part 3 collected both categorical and time-perception data.

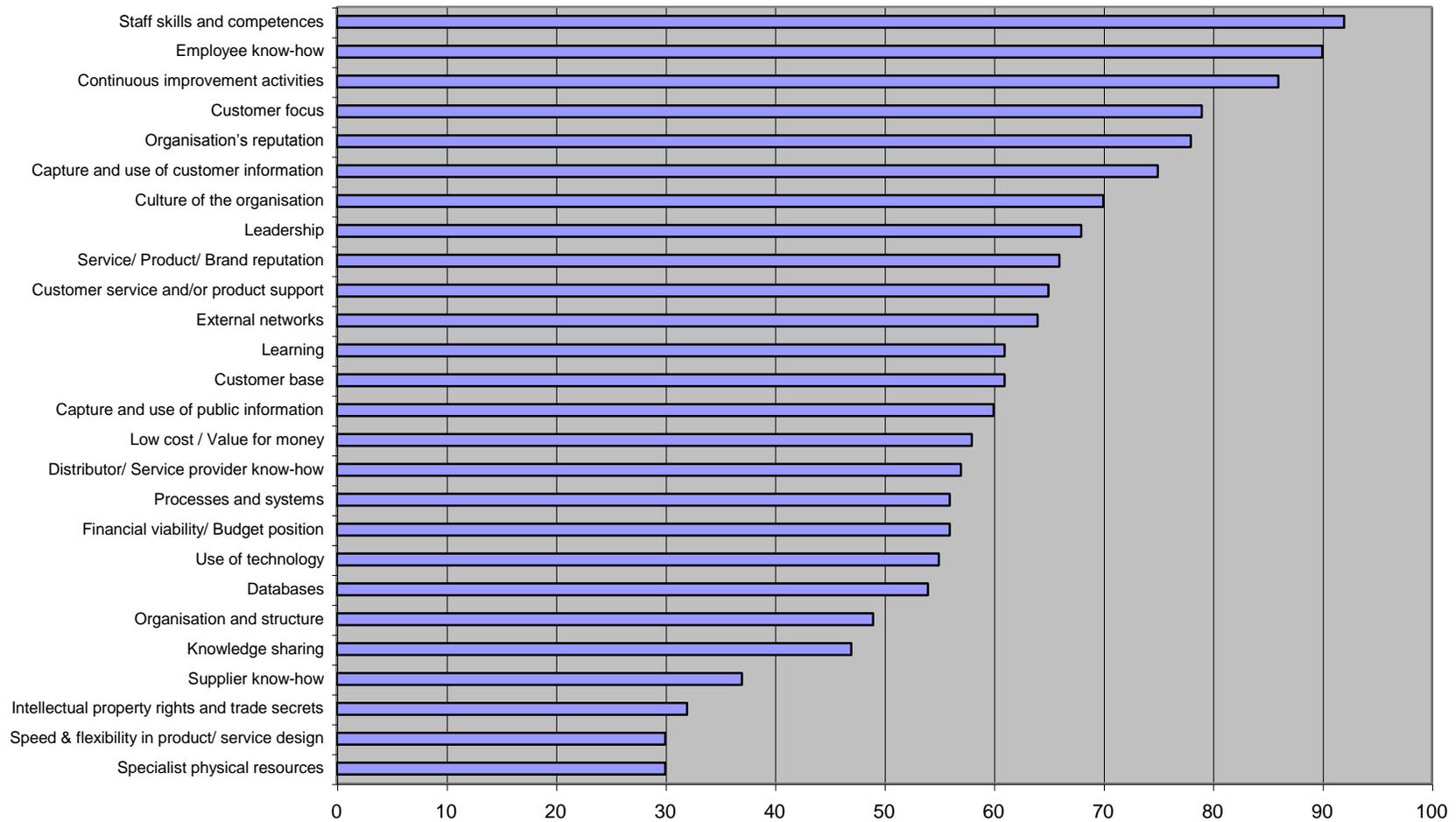
Part 3 of the questionnaire was found to be the most challenging to complete and had to be dramatically simplified during the questionnaire design. Despite this simplification, respondents found answering the questions difficult, which resulted in a high number of cases with missing data as shown in Table 4-30.

Table 4-30: Sources of organizational advantage missing data

Source of Advantage	# Missing	% Missing
Capture and use of customer information	22	12
Capture and use of public information	22	12
Continuous improvement activities	28	16
Culture of the organization	20	11
Customer base	21	12
Customer focus	24	14
Customer service and/or product support	20	11
Databases	20	11
Distributor/ Service provider know-how	17	9
Employee know-how	21	12
External networks	19	10
Financial viability/ Budget position	22	12
Intellectual property rights and trade secrets	15	8
Knowledge sharing	19	10
Leadership	19	10
Learning	25	14
Low cost / Value for money	27	16
Organization and structure	15	8
Organization's reputation	15	8
Processes and systems	17	9
Service/ Product/ Brand reputation	21	12
Specialist physical resources	14	7
Speed and flexibility in product/ service design	17	9
Staff skills and competences	24	14
Supplier know-how	16	9
Use of technology	17	9

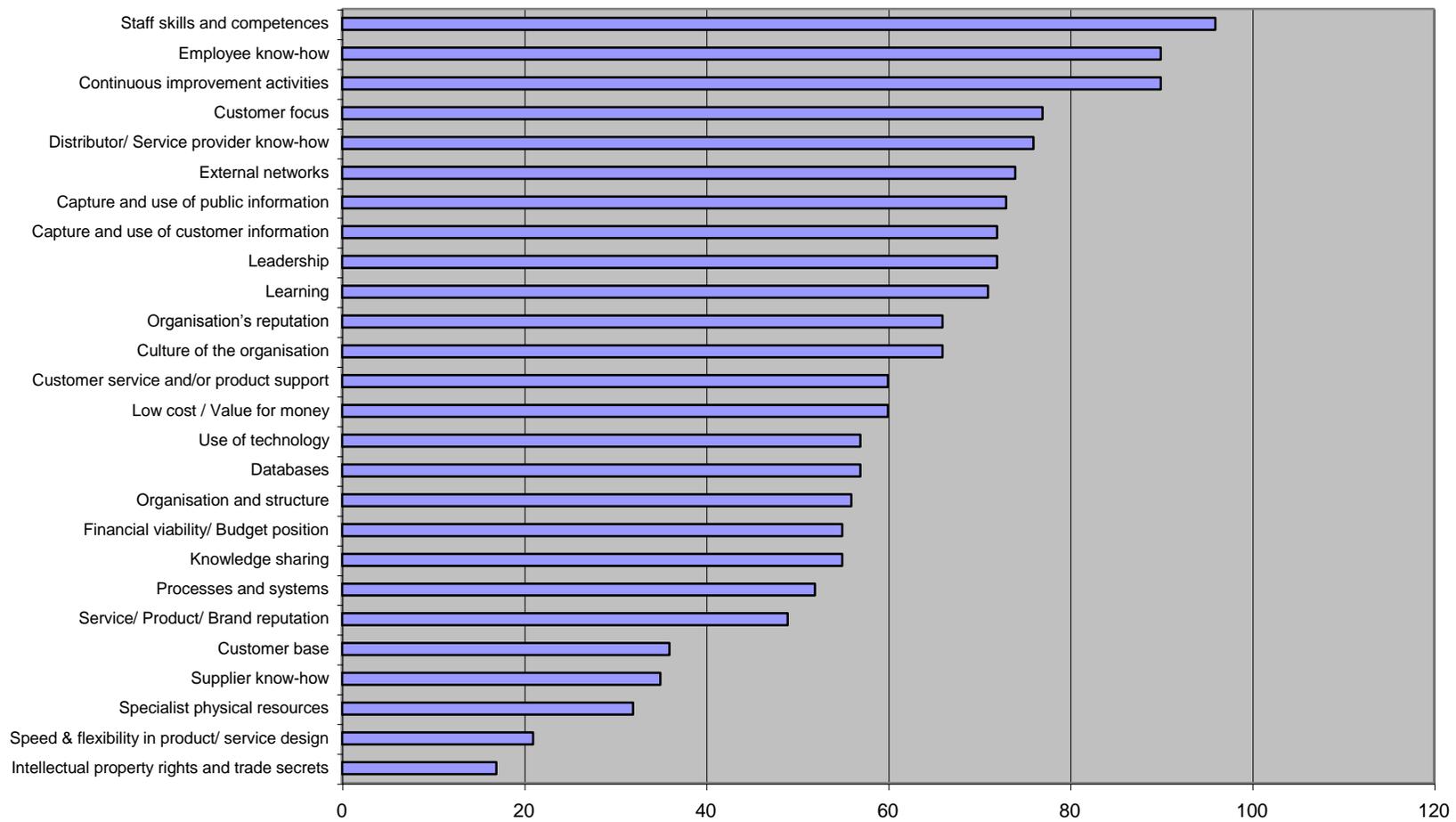
Despite this limitation the results provide a valuable insight into how respondents view the sources of organizational advantage. Figure 4-3, Figure 4-4 and Figure 4-5 show these results for the total sample, public sector and private sector, respectively.

Considering the top ten sources of organizational advantage, the interpretation of these results is that people are a common source of organizational advantage for both public and private sector organizations, but private organizations also rely heavily on their brands and reputations. This conclusion is consistent with the argument that one of the limitations of the Resource-based View is that it underestimates market positioning (Wernerfelt (1984); Priem and Butler (2001)). Public sector organizations, on the other hand, rely on their external perspective such as their service providers and networks. One final comment is that the culture of the organization was considered to be a higher rated advantage in private sector organizations.



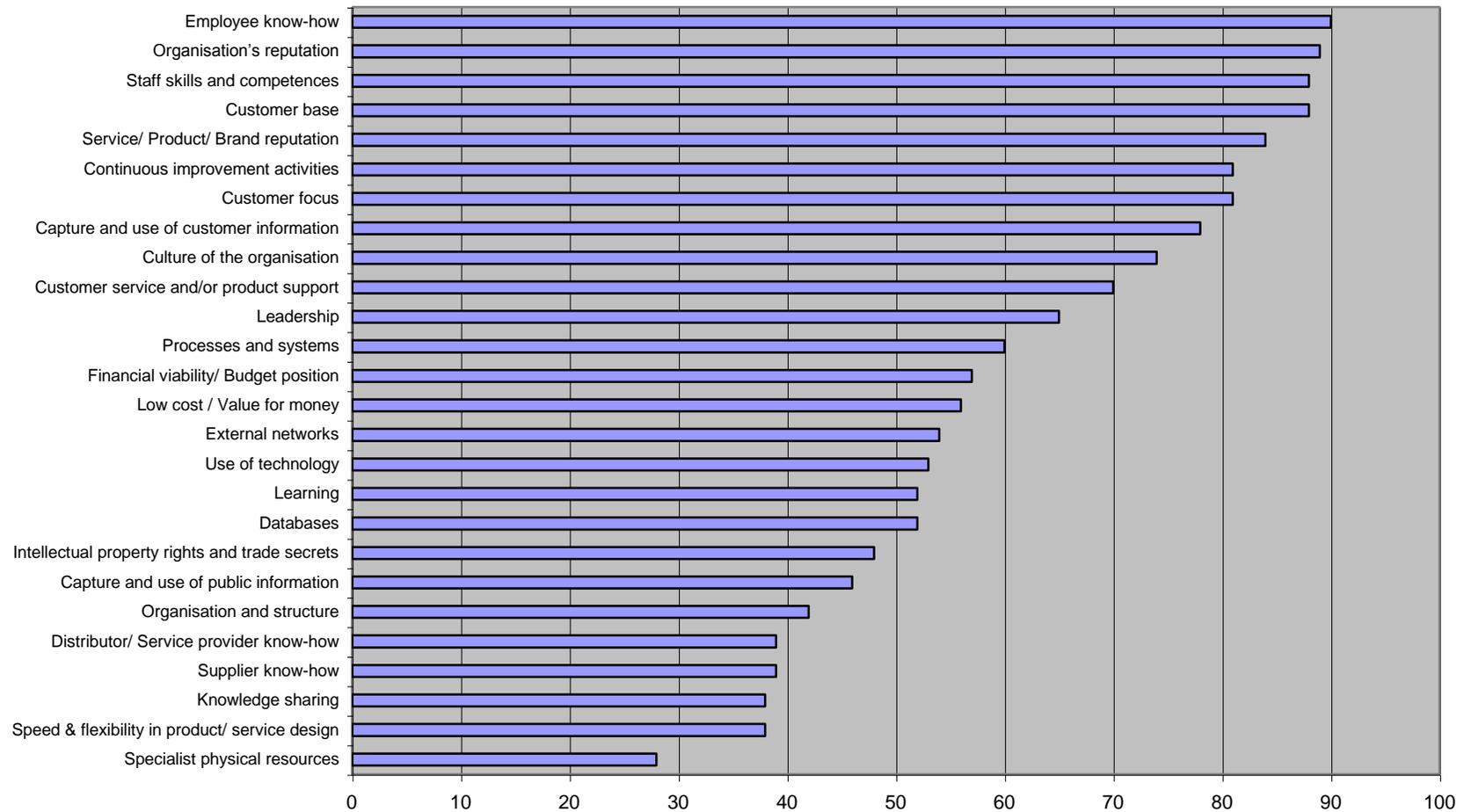
(All cases (N=193) Adjusted for non-respondents)

Figure 4-3: Contributors to SOA shown as % respondent (All cases)



(Public sector (N=101) Adjusted for non-respondents)

Figure 4-4: Contributors to SOA shown as % respondent (Public sector)



Private sector (N=91) Adjusted for non-respondents)

Figure 4-5: Contributors to SOA shown as % respondent (Private sector)

The second aspect to part three was the measurement of the perceived time it would take to replace the sources that contributed to the sustainable organizational advantage. It was hoped that the data could have been used as a ratio variable but it was clear from the responses that this data was not normal, with skewness and kurtosis being as high as 5 and 40, respectively. There was also a concern over missing data, as many respondent failed to give a response of the replacement period as they found this to be difficult. For example, the top item was '*Staff skills and competences*', but although 156 out of 169 respondents reported this as a source of organizational advantage, only 136 gave a replacement period.

Due to its non-normality the Replacement period data was transformed by taking a log function. The descriptive statistics for the transformed data showed that of the 26 items, 4 had a question mark against their normality, and only 5 did not have any identified outliers. Of these outliers cases 141 and 191 were candidates for removal as they occurred several times, over 10 times with the latter. As with the other data in the data set, no outliers were removed at this point.

The results of this study were also compared with the results of Hall. Table 4-31 compares the results of the two studies and this includes the replacement period data.

It is not surprising that this study did not exactly replicate the work of Hall. In fact there were some differences experienced by Hall himself between his 1991 and 1992 papers (Hall (1992)). The current study utilized a different sampling frame, had slight wording revisions to account for its use in both the private and public sector, and it has already been noted that respondents had difficulty in estimating the replacement periods, a factor not recorded by Hall. The general conclusions are that, for private sector, the employees' contribution is significant as is the organizations reputation and brand. As a generalization, it can take in the order of three to five years to rebuild an asset if lost, and it is expected that this is a similar timeframe to the time it would take to fully introduce an excellence philosophy into an organization (Douglas and Judge (2001); Hendricks and Singhal (2001a)).

Table 4-31: Comparison of the results of Hall and this study

Results Hall (1991); Hall (1992)				This Study (Private Sector Organizations)	
Position	Intangible Resource	Average Replacement Period	Range	Position	Average Replacement Period
1	Employee know-how	4.6	4.4-4.7	1	3.4
1	Company reputation	10.8	8.1-14.0	2	6.5
1	Product reputation	6.0	6.3-6.8	5	5.3
4	Networks	3.4	3.0-3.9	15	2.9
5	Specialist physical resources	-	-	26	2.9
6	Supplier know-how	3.1	2.4-4.4	23	2.7
7	Intellectual property rights	-	--	19	5.0
8	Contracts	-	-	4	4.6
9	Distributor know-how	1.6	1.4-1.9	22	2.4
9	Trade secrets	-		19	5.0

Table 4-31 shows that for the top ten sources of organizational advantage in the private sector organizations, the average Replacement Periods varies between 2.4 to 6.5 years. Table 4-32 provides a comparison of the top ten sources of organizational advantage and their replacement periods for private sector, public sector and the combined sample. The replacement periods have been calculated using two methods. Firstly, by taking the average of the log distribution and secondly by reporting the medium. Easton and Jarrell (1998) noted that medians are often used to interpret financial data, as it is non-normal, as medians are more robust to non-normality problems, such as outliers.

Table 4-32: Replacement periods for top 10 sources of competitive advantage

Public Sector			Private Sectors			Total Sample		
Source of Organizational Advantage	Replacement Period (Yrs)		Source of Organizational Advantage	Replacement Period (Yrs)		Source of Organizational Advantage	Replacement Period (Yrs)	
	Mean	Median		Mean	Median		Mean	Median
Staff skills and competences	3.7	3.0	Employee know-how	3.4	3.0	Staff skills and competences	3.6	3.0
Employee know-how	3.4	3.0	Organization's reputation	6.5	5.0	Employee know-how	2.6	3.0
Continuous improvement activities	2.2	2.0	Staff skills and competences	3.4	3.0	Continuous improvement activities	2.4	2.0
Customer focus	2.1	2.0	Customer base	4.6	5.0	Customer focus	2.4	2.0
Service provider know-how	3.3	3.0	Service/ product/ brand reputation	5.3	5.0	Organization's reputation	6.0	5.0
External networks	2.4	2.0	Continuous improvement activities	2.6	3.0	Capture and use of customer information	2.5	2.0
Capture and use of public information	2.0	2.0	Customer focus	2.7	3.0	Culture of the organization	3.8	3.0
Capture and use of customer information	2.2	2.0	Capture and use of customer information	2.9	3.0	Leadership	2.4	2.0
Leadership	2.3	2.0	Culture of the organization	4.1	3.5	Service/ Product/ Brand reputation	4.8	5.0
Learning	2.8	3.0	Customer service and/ or product support	2.4	3.0	Customer service and/or product support	2.4	2.0

4.3.4.1 H4: Strategic Capability is built over time

Hypothesis 4 sought to examine the relationship between the Strategic Capability variate and the time required to build the capability. Examination of this relationship was attempted by considering the relationship between the Log (Replacement Period) for the top ten overall sources of sustainable organizational advantage as the independent variable and Strategic Capability as the dependent variable. A stepwise regression approach was used with the entry level set at the default of 0.05, but none of the Replacement periods loaded. This was confirmed by re-running the regression using the enter approach. The model had an R^2 of 0.382 but was non-significant. It was therefore concluded that the approach taken was unable to provide evidence to support this hypothesis other than the Replacement Period data already discussed above.

4.3.5 Leadership Excellence developing Strategic Capability

The final hypothesis, *H5: Leadership Excellence has a positive relationship with strategic capability, which leads to higher levels of performance*, sought to establish a causal path between Business Excellence, as measured through Leadership Excellence, Strategic Capability and Performance. As this required a path analysis Structured Equation Modelling (SEM) was used to examine the path using the advice of many authors and in particular Hair, Anderson et al. (1998) and Byrne (2001). SEM is known to be a powerful but intolerant technique. Maruyama (1998) noted that the roots of SEM go back to the 1920s when Sewell Wright, a geneticist, attempted to solve simultaneous equations to disentangle genetic influences across generations. At times one wonders whether he has got it working yet.

A confirmatory modelling strategy was used when conducting the structured equation modelling, assessing the fit of a single model to the data. It is recognised that such an approach is not as rigorous as with a competing models strategy, but it served the purpose in the current work (Hair, Anderson et al. (1998)).

The basic model being examined is shown in Figure 4-6, with the full model being given in Appendix 7: Initial SEM model. This comprised three related measurement models defined down to the item level, as determined from the output of the EFA.

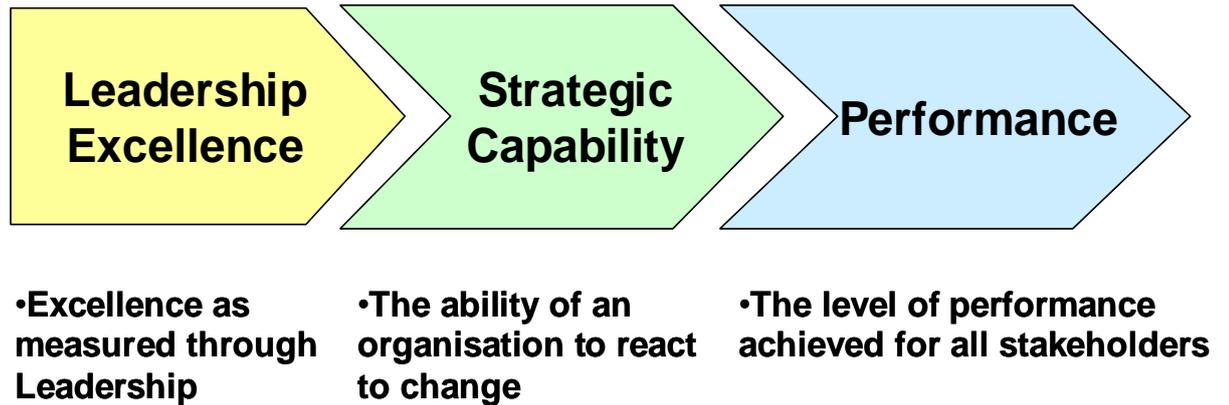


Figure 4-6: Basic path under investigation

Given the complexity of the model, AMOS was unable to run despite the fact that the PC being used was a Pentium 3 933 MHz machine. The model was therefore simplified to replace the latent variables with the first order summated factors. This model did lead to some output, but the statistics indicated a poor fit. The estimates of the regression weights were all significant.

Examination of the modification indices of the simplified model indicated that one area of concern was with the Leadership Excellence construct. This was therefore replaced with its summated score. The resulting model still had a significant Chi-square, but the other goodness of fit indicators were much better. Finally, the model was re-calculated using the data files that were restricted to the top leaders and/ or the outliers were removed. Table 4-33 summarizes the statistics for the various computations. It was noted that other researchers have taken a similar approach (e.g., Das, Handfield et al. (2000)).

Some researchers advocated the calculation of statistical power when considering the chi-square result (Chin (1998); Shook, Ketchen et al. (2004)). Given the number of degrees of freedom and the desire to achieve a statistical power of at least 0.8, the sample size may be calculated. However such calculations have been described as 'crude' and in their meta-analysis, Shook, Ketchen et al. (2004) found that only 2 out of 92 studies reported statistical power. In the current study, heuristics suggested that a sample size of between 150 and 200 would satisfy the statistical power requirements.

Table 4-33: Summary of SEM results

Model	CMIN	P	CMIN/df	GFI	AFI	TLI	CFI	RMSR
Required value (Byrne (2001))	-	>0.05	<3.0*	>0.9	>0.9	>0.9	>0.95	<0.05
Complete model	Would not solve							
First order model	305	0.000	2.348	0.841	0.790	0.914	0.927	0.084
First order model with summated Leadership Excellence – All data	106	0.000	2.121	0.917	0.871	0.934	0.950	0.076
First order model with summated Leadership Excellence – Less outliers	102	0.000	2.042	0.916	0.869	0.918	0.938	0.076
First order model with summated Leadership Excellence – Top leaders only	86	0.001	1.712	0.920	0.876	0.946	0.959	0.067
First order model with summated Leadership Excellence – Top leaders only and less outliers	87	0.001	1.733	0.916	0.869	0.928	0.945	0.069

* Note: A χ^2 df ratio of < 3.0 is given by Curkovic, Melnyk et al. (2000) and Tena, Llusar et al. (2001). Su, Li et al. (2003) suggest a χ^2 df ratio of < 2.0.

Byrne (2001: 81) made the point that goodness of fit indicators were developed due to the acknowledged limitations in χ^2 . From the statistics in Table 4-33 there is evidence that the specified model is a reasonable fit for the data, and the best fit is given with the data from the top leaders sample. This data set still has a Root Mean Square Residual above 0.05, but as cited within the Amos 5 help notes, a more practical level is 0.08 and the upper limit 0.10 (Browne and Cudeck (1993)).

Being the best fit the Top Leader data set has been used to calculate the regression weights given in Figure 4-7, which also shows the model used and Table 4-34 the values of the main coefficients. Taking the advice that standardized paths should be at least 0.2 and ideally above 0.3 (Chin (1998)), the overall conclusion was that the evidence supports the hypothesis, which is thereby accepted.

Table 4-34: Regression coefficients for SEM paths

Path Description	Coefficient	Critical Ratio	Hypotheses Supported
Leadership Excellence to Capability	0.390 (p<0.001)	7.072	H2 and H5 supported
Capability to Overall Results	0.624 (p<0.001)	4.249	H3 and H5 supported

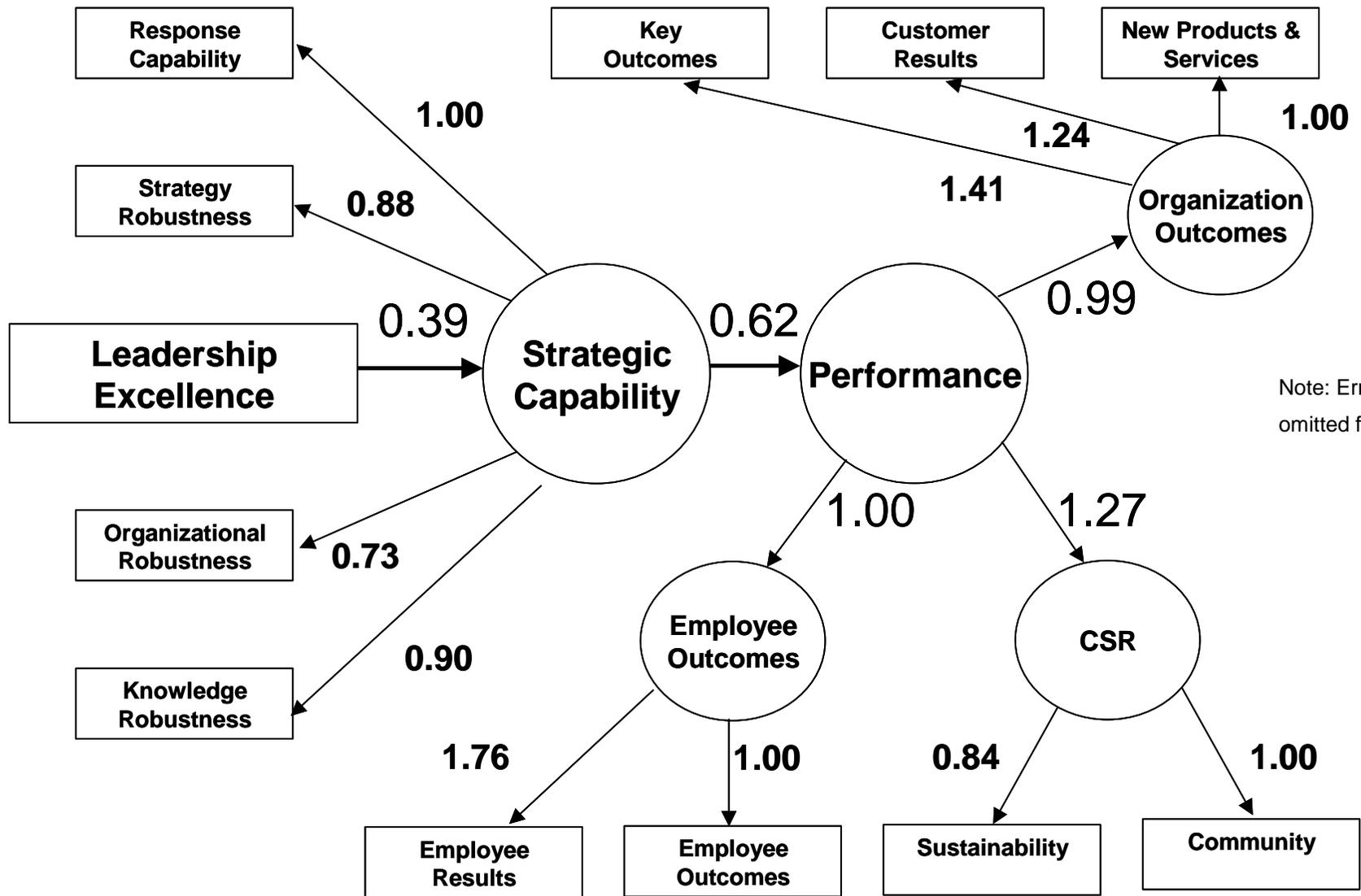


Figure 4-7: Final model with regression weights

4.4 Validate the models

As has been mentioned previously, Easterby-Smith, Thorpe et al. (2002) noted that the validity of the results may be improved through the use of focus groups, a view supported by Jick (1979). To this end several focus groups were held to get their reaction to the results, together with feedback from other sources, such as original authors. The focus groups and interviews followed the qualitative methods outlined in section 3.3.

A total of 6 focus groups were held covering both practitioners and academics, and three original authors were approached. These researchers were Patricia Moura e Sá, who developed the Leadership Excellence instrument, Dick Hall, whose work was partially replicated in the current study, and Dick D'Aveni, who is an acknowledged expert in Hypercompetition. Appendix 8: Feedback from focus groups on interpretation, summarizes the feedback from the focus groups on the interpretation of the results. The main themes from the feedback were as follows:

- There was general acceptance of many of the findings. In particular, the role that leadership plays in the success of organizations and how the leadership relates to the people, who are a driving force behind the sustainable organizational advantage;
- The idea of Business Excellence embedding an ideology, which helps organizations react to change, was considered an insight. This link, when drawn, was recognized by nearly all organizations. It was also interesting that a number of consulting models such as 'Change-able' and 'Changeability' (e.g., Lever (2000)), were seen as being confirmed by the current research;
- It was also interesting that none of the organizations felt that they competed in highly dynamic or hypercompetitive conditions and, if they were to do so, would struggle as they could not keep pace with such conditions, their culture being counterproductive to radical, fast change;
- That culture plays a key role in an organization's ability to adapt to change was supported by the detail in Dick Hall's work, which has not been published. Through his case studies Dick identified some aspects of 'Culture' that led to a sustainable competitive advantage. Dick's description could have been taken straight out of a Business Excellence practitioners' book;
- Whilst on Dick Hall's work, it was satisfying that although some compromises were made in the current study the results are in line with one another. At the time the current analysis was completed it was not known that Dick had segmented his responses by industry, and had found differences, as in the current work. Dick also found Replacement Periods difficult for respondents to estimate, as with the current study;

- The focus groups also confirmed that organizations build their advantage over time and that, in general, there is no instant recipe for success;
- Several people remarked that there was no discernible difference between 'Employee-know-how' and 'Skills and competences', suggesting that the terms were measuring similar things. There was also some suggestion that sources of organizational advantage, such as the people and the culture, were actually drivers of the holistic reputation, which covers many features of an organization's performance;
- The lack of a relationship between either Leadership Excellence or Strategic Capability with Societal Results was felt to be counterintuitive;
- The emerging nature of dynamic capabilities was mentioned by strategy academics. The point was also made that it would be valuable to continue the work such that longitudinal information could be made available;
- Finally, many of the academic sources remarked on the quality of the research that has been conducted.

4.5 Chapter summary

This Chapter has taken the reader through the process of converting the raw data into a number of key findings. The quality of the data was noted not to be perfect and this made the use of advanced techniques such as Structured Equation Modelling all the more difficult. The current research was challenged by the desire to include both public and private organizations in the study, which required the conversion of private sector instruments for use in the public sector, which operates under a different business model (e.g., see Alford (2001)). The fact that this research, which makes use of the RBV literature, included the public sector allowed both a practical and academic contribution, so the decision was well worth the inconvenience. Foresight, fuelled by the literature, had allowed for a number of categorical variables to be defined and this allowed the data to be used under a number of conditions to test to see if the data was having a major effect. This was shown to be a good decision, as the data did not have a major effect on the conclusions.

A number of hypotheses were proposed and some were accepted. The results provide additional evidence of the benefit of adopting a Business Excellence approach in a way that avoided the need to rely on award winners and society members. What was surprising was the finding that Business Excellence works for everyone, public and private, large and small, whole organization or business unit. The dynamics of the environment did not seem to have an effect, although it is believed that the sample and instrumentation may have led to this conclusion. The results also provide an insight as to why Business Excellence works, through the embedding of a quality ideology that allows organizations to react to environmental changes, in line with the 'mental buffer' theory of Savolainen (Savolainen (1999); Savolainen (2000a)).

Although the research would be classified by many as positivist, the contribution from the focus groups and other sources, which provided an interpretive input, added weight to the findings. This has allowed a number of observations to be made that are now taken forward into the next Chapter, where the focus will be on discussing the practical significance of the results in greater detail.

The research did not specifically focus on the area of dynamic capabilities, which is a fast moving and complex area. But during the study a potential link between Business Excellence and dynamic capabilities was identified. The third theme looks at a relationship between an organization's ability to resist change and performance under different environmental conditions. Such a relationship provides support for the existence of dynamic capabilities and represents a second relationship in Figure 5-1.

Finally, the fourth theme draws the previous themes together. It examines the total model in Figure 5-1 raising the possibility that Business Excellence may develop organizations' dynamic capabilities. A model is presented, which provides a contribution to theory.

5.1 Summary of findings by hypothesis

In this section the results compared with the original hypotheses are reviewed. This review is provided in Table 5-1. These hypotheses were designed to support a number of themes and these themes are discussed in the following sections.

Table 5-1: Summary of results against each hypothesis

Hypothesis	Results	Supported
Leadership Excellence and Performance		
<p><i>H1: There will be a positive relationship between the level of Leadership Excellence and Performance (Dean and Bowen (1994); Zairi (1995); Petrick, Scherer et al. (1999); Zahra (1999); EFQM (1999a); Das, Handfield et al. (2000); Higgs and Rowland (2000); Pannirselvam and Ferguson (2001); Kanji and Sá (2001a))</i></p>	<p>The simple regression gave an R² of 0.319 and standardized beta of 0.565, both results being statistically significant.</p>	<p>YES</p>
<p><i>H1a: The strength of the relationship will be similar with private sector organizations and public sector organizations (Redman, Mathews et al. (1995); EFQM (1999a); PriceWaterhouseCoopers (2000))</i></p>	<p>The results were an R² of 0.403 for public sector and 0.266 for private sector, with standardized betas of 0.635 and 0.516, respectively. Running the regression with the industry type as a dummy variable showed that the industry type did not make a statistically significant difference.</p>	<p>YES</p>
<p><i>H1b: The strength of the relationship will be higher with whole organizations than business units (NIST (2002b))</i></p>	<p>The whole organization / business unit dummy was non-significant when the regression was run.</p>	<p>NO</p>
<p><i>H1c: Size will have an impact on the strength of the relationship (Easton and Jarrell (1998); Terziovski and Samson (1999); Terziovski and Samson (2000); Hendricks and Singhal (2001a); Wiklund and Shepherd (2003))</i></p>	<p>Size was run as log function of number of people and turnover or budget of the organization, with an interaction variable included to test for a moderating variable. Although the interaction variable was non-significant in both cases, re-running the regression without this variable gave a model that had a good fit and size was found to have a low but significant effect at the p= 0.001 level. The R²'s were 0.356 and 0.368, respectively and the standardized betas 0.205 and 0.230. When size was entered as a dummy variable with a cut off point of either 250 or 500 people in the organization, the dummy did not load at the p=0.05 level.</p>	<p>NO</p>
<p><i>H1d: Leadership Excellence will have a positive relationship with all stakeholder performance results (Miles, Snow et al. (1978); Wright, Dunford et al. (2001); EFQM (2003))</i></p>	<p>The results using the entire sample showed that there was only a statistically significant relationship between Leadership Excellence and Employees, the Organization and Customers. Examining a split public sector/ private sector sample did not change this conclusion.</p>	<p>NO</p>

Hypothesis	Results	Supported
Leadership Excellence and Performance continued		
<i>H1e: The strength of the relationship will be weaker in highly dynamic environments</i> (Das, Handfield et al. (2000); Eisenhardt and Martin (2000); Fiol (2001); Leonard, McAdam et al. (2002); Dervitsiotis (2004); Jones (2004))	The Environment Dynamics variable and interaction variable were significant in the regression, but multicollinearity was high. Re-running the regression with Environment Dynamics as a dummy did lead to a significant result at the 0.1 level, but the standardized beta was positive and not negative as predicted.	NO
Strategic Capability and Performance		
<i>H2: There will be a positive relationship between Capability and Performance</i> (Klein, Edge et al. (1991); Savolainen (1999); Zahra (1999); Rosenbloom (2000); Savolainen (2000a); Tena, Llusar et al. (2001); Douglas and Ryman (2003); Wiklund and Shepherd (2003))	The regression had a very good fit with an R ² of 0.585 and a standardized beta of 0.772 for the total sample. Running the regression models at the industry and stakeholder level indicated that the relationships were statistically significant for all the variations, although the R ² 's for New Products and Services for both Private Sector and Public Sector, and for Community, Sustainability and Growth for Public Sector, were all low.	YES
<i>H2a: The strength of the relationship will be weaker in highly dynamic environments</i> (Barney and Zajac (1994); Henderson and Mitchell (1997); Das, Handfield et al. (2000); Eisenhardt and Martin (2000); Eisenhardt and Sull (2001); Fiol (2001))	The multivariate regression with Environment Dynamics as a variable and including an interaction variable did show that both were statistically significant in the model, but high multicollinearity prevented the conclusion that Environment Dynamics was having a moderating effect on the Strategic Capability and Performance relationship. The standardized beta was also positive as opposed to being negative as expected. Re-running the multivariate regression with the Environment Dynamics as a dummy revealed that this did have a statistically significant effect, but the standardized beta was slightly positive at 0.118, which was the opposite to what was expected.	NO
Leadership Excellence and Strategic Capability		
<i>H3: There will be a positive relationship between Leadership Excellence and Capability</i> (Teece, Pisano et al. (1997); Ireland and Hitt (1999); Petrick, Scherer et al. (1999); Zahra (1999); Prahalad (2000); Zott (2003))	The regression had a good fit with an R ² of 0.312 and a standardized beta of 0.563.	YES

Hypothesis	Results	Supported
Strategic Capability is developed over time		
<i>H4: Capability is developed over time</i> (Dierickx and Cool (1989); Hendricks and Singhal (2000); Douglas and Judge (2001); Tena, Llusar et al. (2001); Hendricks and Singhal (2001a); Hendricks and Singhal (2001b); Przasnyski and Tai (2002); Sureshchandar, Rajendran et al. (2003); Warwood and Roberts (2004))	The results from the descriptive data indicated that the sources of sustained organizational advantage take between 2 to 6 years to build.	YES
Leadership Excellence develops Strategic Capability, which leads to Performance		
<i>H5: Leadership Excellence has a positive relationship with Strategic Capability, which leads to higher levels of performance</i> (Tena, Llusar et al. (2001))	Despite the Chi-squared remaining statistically significant, other indices indicated a good fit on the SEM.	YES

5.2 The benefit of Business Excellence

Based on the underlying assumption that Business Excellence is of benefit to organizations this section reviews the evidence to provide further support for this claim. First the results consider this from a generic viewpoint before discussing the findings at a categoric level.

The literature review concluded that the two most popular methods for studying such relationships were event-based studies considering secondary data such as share price data, and surveys collecting primary data. Like the current study the latter mainly make use of self-reported methods although interviews have been used in some studies. One advantage of the current study apart from including both public and private organizations was that the sample was drawn from industry sources and not from an award list. This was to reduce any bias.

5.2.1 Support for the benefit of Business Excellence

There is wealth of evidence supporting the view that, with the reservation that it does not guarantee success, Business Excellence is of benefit to organizations. The current work adds support for this argument with an acceptable coefficient of determination of 0.319 and the size of the standardized beta, at 0.565, indicates that the relationship is strong.

Most of this work in the area of Business Excellence benefits has focused on the American Malcolm Baldrige model or Business Excellence in general. The current work had a bias towards the EFQM Excellence Model[®] framework although this bias was considered to be low. In the operationization of the Leadership Excellence instrument, general direction was taken from the EFQM Excellence Model[®] but the objective was to use an instrument that captured the behaviour of leaders in organizations that would be considered to have a high level of Business Excellence. By way of comparison Vokurka and Stading (2000) provided an interpretation of the focus of leadership in a number of the Business Excellence models and this is shown in Table 5-2. From this table it is concluded that leadership, as defined in an EFQM sense, is compatible with other models from around the world.

Table 5-2: Comparison of focus of leadership across Business Excellence models

Business Excellence Model	Focus of Leadership Criteria
EFQM Excellence Model®	Inspiration, support, and promotion of Business Excellence
American Malcolm Baldrige	Executive, company and community leadership
Deming Prize (Japan)	Policy, organization and helpful supervision
Canadian Quality Award	Strategic direction, involvement and improvement
Australian Quality Award	Executive, company and community leadership

Adapted from: Vokurka and Stading (2000)

The reason why leadership was chosen as the critical factor on which to base Business Excellence was a matter of scope. It would have been possible to operationalize Business Excellence using a wider scope of activities, for example, by including people management or by having representation from all of the criteria. This was the approach taken by other researchers (e.g., Curkovic, Melnyk et al. (2000); Tena, Llusar et al. (2001); Claver, Tari et al. (2003); Su, Li et al. (2003)) although only Su, Li et al. (2003) attempted an operationization of an entire model. The decision was made not to do this, as the main focus of the research was not to validate the EFQM Excellence Model®. Whilst the current research was being conducted, other researchers expressed the view that Business Excellence could not be related to a single factor and that the 'system' had to be considered (Reed, Lemak et al. (2000); Sun (2000)). If this is the case, then a stronger relationship may have been observed if Business Excellence had been represented by more than just a leadership construct, even if leadership is a major contributory factor. This may, however, have caused a measurement problem, as one of the requirements was to have an instrument that measured the level of Business Excellence and this condition would have been broken had a new instrument been used without additional validation.

It is of value to compare the current research with the three studies that modelled the relationships between Business Excellence models and Performance (Table 5-3). The current study certainly had the benefit of parsimony, yet its findings are consistent with those from other researchers. It is notable in the work of Tena, Llusar et al. (2001) that a link was established between Business Excellence and the development of distinctive competences. This is an area of interest that is covered in a later section.

Table 5-3: Results from other empirical models on the Business Excellence and Performance relationship

Base Model	Constructs	Result	Reference
Malcolm Baldrige	<ul style="list-style-type: none"> • TQM strategic systems • TQM operations systems • TQM information systems • TQM results 	Chi-squared statistically significant but other fit indicators acceptable. All paths in the confirmatory factor analysis were statistically significant. Authors claim support for the Baldrige model.	Curkovic, Melnyk et al. (2000)
Total Quality Management	<ul style="list-style-type: none"> • TQM: <ul style="list-style-type: none"> ○ Customer focus ○ Continuous improvement ○ Employee fulfillment ○ Organization as a total system • Distinctive capabilities • Performance 	Model had a non-significant Chi-squared and GFI of 0.913. Results indicated that Business Excellence had a positive relationship with Performance and Distinctive Capabilities.	Tena, Llusar et al. (2001)
Australian Quality Award	<ul style="list-style-type: none"> • Organization performance • Leadership • Informational and analysis • Strategy and planning • Processes, products and service • People • Customer focus 	<p>Statistically significant correlations reported between organization performance and leadership, process, products and services, people and customer focus.</p> <p>The correlation between organization performance and information & analysis, and strategy & planning were non-significant.</p>	Rahman (2001)

Base Model	Constructs	Result	Reference
Taiwan Quality Award	<ul style="list-style-type: none"> • Leadership • Information Management • Innovation and Strategic Management • Human Resource and Knowledge Management • Customer/ Market Development • Process Management • Business Results 	Achieved good model fit (GFI 0.998).	Su, Li et al. (2003)
EFQM Excellence Model [®]	<ul style="list-style-type: none"> • Leadership Excellence 	Positive relationship between Leadership Excellence and Performance.	This study

5.2.2 Business Excellence in the public sector

One of the contributions of this research was the examination of the Business Excellence and Performance relationship in public sector organizations. The literature review noted that there was limited research in this area.

In the current study the results indicate there is a positive relationship between Leadership Excellence and Performance with both the public sector and private sector samples. In addition, the strength of the relationship was potentially stronger in public sector organizations but the difference is likely to be due to the fit of the data. Re-running the simple regression models using the sector as a dummy variable led to the conclusion that this claim could not be made. The conclusion, that there is no difference between the effect of Business Excellence on public, as opposed to private, sector organizations, was supported by the work of Redman, Mathews et al. (1995) who concluded that both sectors were at a similar level of maturity with regards to Business Excellence. Public sector and private sector organizations also share a similar management model (Voss, Tsikriktsis et al. (2004)).

The conclusion is considered to be a generalization. Due to the size of the responses by industry type, it was not possible to test the means at an industry level. The literature review identified that market and industry conditions were a factor (Easton and Jarrell (1998); Terziovski and Samson (1999); Przasnyski and Tai (2002)). In addition, in studying Richard Hall's results it was found that different industries reported different sources of competitive advantage. Aaker (1989) had reached a similar conclusion. An area for further research would be to repeat the study at an industry, as opposed to a sector, level.

5.2.3 Business Excellence and whole organizations vs. business units

The results of the NIST fictitious buy and hold stock fund suggested that the relationship between Business Excellence and Performance would be stronger for whole organizations than business units (NIST (2002b)). The current study could not find evidence to support this claim and is questionable how safe the NIST conclusion is given the observation that business units do not have separate stock holdings. On re-reading the report, it would appear that the distinction was made by categorizing organizations based on their structure, but still tracking the overall share price. The difference may well be due to organization size and not structure, although a link between the structure of the organization and the benefits of Business Excellence has been reported (Douglas and Judge (2001)). It was interesting, although studies have looked at industry and size considerations, that only the NIST work considered the whole organization vs. business

unit results (e.g., Easton and Jarrell (1998); Rajan and Tamimi (1999); Hendricks and Singhal (2001a); Przasnyski and Tai (2002)). Reed, Lemak et al. (2000) noted that Business Excellence should be considered at the business level, as here it is most relevant.

5.2.4 Business Excellence and organization size

Small organizations reported a higher level of benefit in percentage terms than large organizations (Hendricks and Singhal (2001a)). In another study an opposite effect was reported and larger organizations delivered more benefit (Terziovski and Samson (1999)). The conclusion from the literature was that size might have an effect on the Business Excellence and Performance relationship. The result of the current study suggested that size did have a weak effect on the relationship between Business Excellence and Performance, with larger organizations having a stronger relationship. However this conclusion should be treated with caution, given the results that the interaction variable was non-significant and the attempt to see whether an SME/ larger organization classification could be determined was not successful.

Yusof and Aspinwall (2000) argued that SMEs have certain features such as faster communication and simple systems that provide an advantage over large organizations, which could have led to a negative relationship between Leadership Excellence and Performance. But they also noted a number of disadvantages, such as a lack of resource (financial and people) and expertise (Yusof and Aspinwall (2000); Beheshti and Lollar (2003)). In studying Business Excellence success factors, Merino-Diaz de Cerio (2003) found that larger organizations were able to adopt TQM practices due to having the available resources, but they noted that other authors had found an opposite relationship, the differences being put down to a smaller sample size and the fact that the research had focused on a particular industry sector. The observation that large organizations have more effective Business Excellence implementation was also supported by Eng and Yousof (2003). Size was also found to be an important factor in a study of strategic competences in hospitals (Douglas and Ryman (2003)). The conclusion drawn from this was that large organizations may have an advantage over SMEs in gaining the rewards of Business Excellence, but this advantage is small. It appears that Business Excellence benefits both small and large organizations.

5.2.5 Appropriation of benefit to all stakeholders

One of the fundamental principals of Business Excellence is that all stakeholders share in the benefits (EFQM (2003)). The EFQM Excellence Model[®] has different weightings applied to each of the stakeholder groups (EFQM (1999a)) and these weightings do serve as a comparison. The hypothesis H1d was that Business Excellence, as measured

through Leadership Excellence, would have a positive relationship with all the stakeholder areas. Table 5-4 provides a comparison of the weightings given by the EFQM Excellence Model[®], with the highest rating results area, Customer Satisfaction, being given a rating of 1, and the ratios of the standardized betas from the current research for the overall sample, with the ratios being compared with Customer Satisfaction. Care should be taken over the interpretation of this information given that the value of standardized betas are regression equation specific (Hair, Anderson et al. (1998)).

Table 5-4: Comparison of stakeholder weightings

Stakeholder Group	EFQM Excellence Model[®] Weighting Customer = 1	Variate	Stand. Beta	Weighting this Research Customer = 1
Customer	1.00	Customer Results	0.440	1.00
People Outcomes	0.23	Employee Results	0.576	1.31
Society	0.30	CSR	0.312	0.71
Key Outcome	0.38	Key Outcomes	0.496	1.13
		Growth	0.180	0.41
Key Indicators	0.38	Products and Services	0.355	0.81

The hypothesis that Business Excellence, as measured through Leadership Excellence, has a positive relationship with all stakeholder groups was rejected as the coefficients of determination for were low for Society, although significant R^2 values as low as 0.05 have been found in the literature (McGrath (1998)). This conclusion is consistent with stakeholder research. Although Ogden and Watson (1999) noted that the needs of differing stakeholder groups could be balanced, Hillman and Keim (2001) questioned the impact of social participation, which is a fundamental principle of Business Excellence.

The analysis in Table 5-4 has some limitations in the match between the stakeholders and variates. There is also a warning regards the level of fit of the data as indicated by the R^2 but it does provide some support for other researchers who concluded that the weightings with the EFQM Excellence Model[®] are in need of further investigation (Eskildsen, Kristensen et al. (2001); Eskildsen, Kristensen et al. (2002)).

One other issue raised by stakeholder results data concerns the interdependence between the different stakeholders. Although outside the scope of the current study, the EFQM Excellence Model[®] predicts that high levels of customer, people and societal satisfaction will lead to high key outcome results. Other researchers indicated that such relationships do in fact exist (Das, Handfield et al. (2000); Eskildsen and Nussler (2000); Oakland and Oakland (2001); Rahman (2001); Agus (2004); Michie and West (2004)). Blyler and Coff (2003) noted that in socially complex systems, such as Business Excellence, the appropriation of the value generated covers more stakeholders than just the organization. This may explain why, when organizations face tough times and take a shorter-term focus, the continuance of Business Excellence comes under threat (Dervitsiotis (2003)).

5.2.6 The effect of an organization's environment

The observation that industry and market factors may have an effect on the effectiveness of Business Excellence raised a question as to the extent of the effect of the dynamics of the environment. Researchers have called specifically for research examining the effect of the environment on Business Excellence (Das, Handfield et al. (2000); Leonard, McAdam et al. (2002)). The environment may be a reason why some researches concluded Business Excellence is not a guaranteed recipe for success (Powell (1995); Terziovski and Samson (1999); Eriksson, Johansson et al. (2003)). In the current study no support could be found to support the hypothesis that the dynamics of the environment had a negative effect on the Business Excellence and Performance relationship. A possible reason for this concerned the way that the dynamics of the environment was measured, an issue that is discussed below. Although Environment Dynamics appeared to have a moderating effect on the Leadership Excellence and Performance relationship, high multicollinearity was the concern that led to this conclusion being drawn with caution.

That the dynamics of the environment has an impact on the benefit of Business Excellence remains an important issue and whether Business Excellence can be effective in periods of turbulent change has been called into question (Dervitsiotis (2004)). Managing volatility in the environment will be a major challenge for managers in the future (Prahalad (2000)).

5.3 Sources of organizational advantage

One of the assumptions made during this research was that competitive advantage is a reality. Authors have argued competitive advantage does not exist (Powell (2001)) or that the environment is changing so fast that a sustained advantage, is impossible to

maintain (Fiol (2001)). Accepting the concept of competitive advantage the next question is whether Business Excellence can generate such an advantage, given that there is a lack of theory underpinning this claim (Reed, Lemak et al. (2000)).

Another question is whether competitive advantage is built over time or whether it comes about through some form of 'jackpot' model (Barney (1995)). Many authors argued for a path dependency approach (Grant (1991); Hall (1991); Hall (1992); Amit and Schoemaker (1993); Pettus (2001)). A way of examining this question was to seek the drivers of a sustained competitive advantage, or sustained organizational advantage as termed in the current work, as the sample included both public and private sector organizations. This section examines the relationship between 'Resources and Capabilities' and 'Performance' in Figure 5-1, commences by reviewing the results of the sources of organizational advantage work. In doing so, the classification of the sources has been conducted and compared against the findings from the literature review examining the Business Excellence critical success factors. A parallel has also been drawn between the time taken to develop the sources of advantage and time taken to implement Business Excellence.

5.3.1 Classification of sources of organizational advantage

The current work reproduced the earlier work of Hall, including input from a wider range of authors to generate a potential list of assets and capabilities. Using the ideas of Coyne (1986), Hall categorized the intangible assets into assets with or without legal protection, and competences based on functions or culture (Hall (1992)). Many authors have reported a difference in the significance of particular intangible assets across different industries (Snow and Hrebiniak (1980b); Aaker (1989); Hall (1994)), and so the result in the current work that there were different results in the public and private sector was expected. Kay (1998) developed a framework for considering distinctive capabilities in different industries, which are argued to lead to competitive advantage. This framework contains four main categories: Architecture, Reputation, Innovation and Strategic assets. Table 5-5 provides a classification of the sources of sustainable organizational advantage for both the public and private sector organization from the current research.

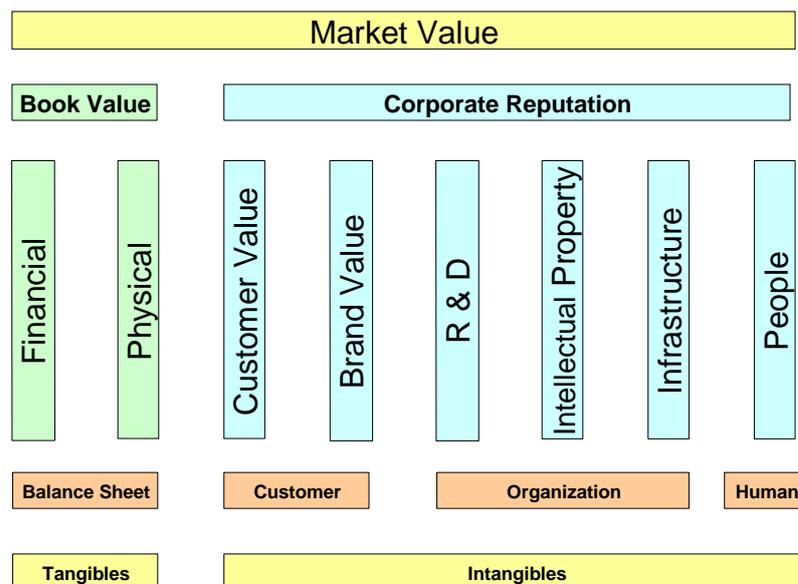
Table 5-5: Classification of the sources of SOA using Kay's framework

Kay (1998) Distinctive Capabilities Classification		Public Sector Top 10	Private Sector Top 10
Categories	Sub-categories		
Architecture	<p>Internal: Between the firm and its employees and among employees</p> <p>External: Between the firm and its suppliers or customers</p> <p>Networks: Between a group of collaborating firms</p>	<p>Staff skills and competences</p> <p>Employee know-how</p> <p>Continuous improvement activities</p> <p>Customer focus</p> <p>Service provider know-how</p> <p>External networks</p> <p>Capture and use of public information</p> <p>Capture and use of customer information</p> <p>Leadership</p> <p>Learning</p>	<p>Employee know-how</p> <p>Staff skills and competences</p> <p>Continuous improvement activities</p> <p>Customer focus</p> <p>Capture and use of customer information</p> <p>Culture of the organization</p> <p>Customer service and/ or product support</p>

Kay (1998) Distinctive Capabilities Classification		Public Sector Top 10	Private Sector Top 10
Categories	Sub-categories		
Reputation	<ul style="list-style-type: none"> Building reputation Spreading reputation Maintaining or devaluing reputation 		<ul style="list-style-type: none"> Organization's reputation Service/ product/ brand reputation
Innovation	<ul style="list-style-type: none"> The process of innovation Protecting and exploiting innovation Standards 		
Strategic Assets	<ul style="list-style-type: none"> Natural monopoly from scale economies and narrow markets Natural monopoly from compatibility standards or interdependence between customers Sunk costs from tangible investment Sunk cost through reputation, advertising and market knowledge Exclusivity through licensing and regulation Exclusivity from strategic action 		<ul style="list-style-type: none"> Customer base

The analysis in Table 5-5 suggests that organizational architecture is the main source of advantage in both public and private sector organizations. The public sector had no 'market factors' ranked in their top 10, with the Organization's Reputation coming in at number 11 and Service/ Product/ Brand reputation at number 21. Kay noted that *'reputation is not equally important in all markets'* (Kay (1998: p87)) indicating that this is not a necessarily a public versus private sector issue. The effect of different industries on capabilities has already been noted (Snow and Hrebiniak (1980b); Aaker (1989); Hall (1994)).

That reputation was rated high and, from the replacement period data, took longer to build suggests that reputation is an overarching concept. When questioned, Richard Hall agreed with this view (Hall (2004)), which is further enhanced by considering May's framework, which is shown in Figure 5-2.



Adapted from May (2002)

Figure 5-2: May's intangibles framework

It was of interest that the people derived capabilities, such as employee know-how, were considered to be of great importance in both the public sector and the private sector, an observation also reported by Hall (1994) for the private sector. This may have a bearing on the relationship between Leadership Excellence and stakeholder Performance, which indicated that the greatest impact was on the People Outcomes. The result brings support to the management slogan 'people are our greatest asset'.

Considering the source of advantage using Kay's classification, and May's framework, there is support for the view that Business Excellence, which has all the Architecture 'Distinctive Capabilities' within its scope, could potentially generate organizational advantage. Further support comes from a comparison between what organizations are saying are their sources of advantage and the research that has identified the Business Excellence critical success factors (CSFs). Such a comparison is provided in Table 5-6

Table 5-6: Sources of advantage (SOA) and Business Excellence CSF comparison

	Top 10 SOA (This work all organizations)	CSFs (From Table 2-5)
Matched	Staff skills and competences Employee know-how Continuous improvement activities	Employee involvement/ People focus
	Customer focus	Customer focus
	Culture of the organization	Culture
	Leadership	Leadership
	Not matched	Organization's reputation Service/ Product/ Brand reputation Capture and use of customer information Customer service and/or Product support

From Table 5-6 there is a close map between the people aspects, customer, culture and leadership. Some of these linkages are supported by the literature. For example, Oakland and Oakland (2001) made the connection between people and world-class performance and Sussland (2001) had 'Human Capital' at the centre of his model. Earlier the role leadership plays in developing assets into core capability differentials was noted (Petrick, Scherer et al. (1999)). The whole basis of the 'Identity-based view' of Fiol (1991) rests on the corporate culture.

The match is not perfect and there are a number of reasons for this apart from classification wording difference. Firstly, as noted above, reputation is built from a

number of sources (May (2002)). Secondly, the work of Sun (2000) found that organizations rank certain factors as important to their success, yet pay these factors little attention. This suggests that the question of success factors has to be taken in the context in which it is used.

The main conclusion from the analysis is that there is evidence of a link between Business Excellence and the sources of sustained organizational advantage. The arguments for this claim are as follows. Firstly, the analysis using the Kay framework concluded that the majority of sources of organizational advantage factors were placed under the 'Architecture' classification. This classification relates to the social networks within the organization (Kay (1998)). Secondly, the other main source of advantage, reputation, is built on the intangibles within an organization (Hall (1994); May (2002)), all of which fall with the scope of the Business Excellence construct. Thirdly, a comparison between the sources of organizational advantage factors and the Business Excellence critical success factors indicates a close match.

The work of Hall also provided evidence of a link between Business Excellence and the sources of organizational advantage. Hall made a link between the people dependent capabilities of an organization and the generation of its strategic assets (Hall (1994)). Taking a case study approach he visited six organizations to identify the detail behind the intangible resources that had been identified. One of these intangible resources was the culture, which reflects the social systems within the organizations. Six aspects of culture were identified, all relating closely to a Business Excellence social system. The aspects were (Hall (1994: p163); Hall (2004)):

- Ability to manage change
- Ability to innovate
- Teamworking ability
- Participative management style
- Perception of high quality standards
- Perceptions of high standards of customer service

It is also noted that there is a parallel between this culture description and the culture that may be expected in an organization that has developed dynamic capabilities, for example, the ability to 'Integrate, build, reconfigure' (Teece, Pisano et al. (1997); Adner and Helfat (2003)), 'Gain, reconfigure, integrate, release' (Eisenhardt and Martin (2000)) and 'Modify or create' (Winter (2003)).

One final area for discussion relates to path-dependency. Researchers have noted that path dependence is an important concept in the RBV (Dierickx and Cool (1989); Hall (1991); Hall (1992); DeCarolis and Deeds (1999)). Other research has shown that an organization's advantage through the use of Business Excellence is built over time as the level of benefit is related to the degree of implementation (e.g., Douglas and Judge (2001); Tena, Llusar et al. (2001); Przasnyski and Tai (2002); Sureshchandar, Rajendran et al. (2003); Warwood and Roberts (2004)), and that it is possible to classify organizations in terms of their level of Business Excellence maturity (Redman, Mathews et al. (1995); Beheshti and Lollar (2003)). Hendricks and Singhal, and the work of NIST, suggested that an advantage is not realized until the point when external recognition is received (e.g., Hendricks and Singhal (1997); NIST (2002b); British_Quality_Foundation (2003)). It was therefore of interest to see if strategic capability was built over time.

The current research, based on the methodology of Hall but including the views of others, leads to the conclusion that such strategic capability is built over time, and that the timeframe was, in general, 2 to 3 years. Hall had previously reported longer replacement periods, but as noted earlier estimation of the replacement periods was difficult for respondents and so this reduction in replacement periods may not be significant. If it is significant, however, it could be argued that the asset is being eroded faster (Dierickx and Cool (1989); Grant (1991)).

In their work, Hendricks and Singhal took a pre-award implementation period of 5-years, so the finding from the current research is not at variance with these authors results as was first expected. Other researchers have also used a 5-year implementation time period in their studies (e.g., Easton and Jarrell (1998); Sureshchandar, Rajendran et al. (2003)). The main finding is that the results indicate that building capability is not an overnight job.

What is interesting is that there is evidence of equifinality in the Business Excellence literature. Several authors have noted that organizations with similar 'world-class' levels may have totally different resource and capability configurations (Seddon (1998); Baxter and MacLeod (1999); Prabhu and Robson (2000)). This builds another link between Business Excellence and the development of capabilities, which will be returned to before the end of the Chapter. In the next section the results are review in the context of providing further evidence for the concept of dynamic capabilities.

5.4 Do dynamic capabilities exist?

Authors see dynamic capabilities as key to competitive advantage (Teece, Pisano et al. (1997)). Others question whether they even exist (Winter (2003)). In the current study the term 'Strategic capability' has been chosen to avoid the dynamic capabilities debate, but a close parallel may be drawn between the two concepts. There is also a third concept, 'Strategic flexibility'. Strategic flexibility was a term chosen to describe the study of managing in a turbulent environment. As Hamel and Prahalad stated, strategic flexibility relates to '*new ideas, new theory, new applications, new concepts that are relevant to a manager facing the new millennium*' (Hamel, Prahalad et al. (1998: pxv)). Lindgren (2001) noted that both strategic flexibility and dynamic capabilities fall under the same general heading of the ability of organizations to manage in turbulent environments. What is not clear from the literature is how the presence of dynamic capabilities may be measured, apart from their effect on the performance of the organization that possesses them and their categorization.

Whatever the term used, the principle of their operation remains the same. Savolainen (2000a) referred to a 'mental buffer', the ability of an organization to resist changes in its environment. The measurement of this 'mental buffer' borrowed the strategic response instrument from Lindgren (2001) who examined the relationship between strategic flexibility and performance, using the Sharma EXCEL performance instrument. Lindgren reported a strong relationship between the two constructs. The strategic flexibility instrument challenges the resistance an organization has to change.

The results of the regression in the current study conclude that there was a positive relationship between strategic capability and performance for the total sample and for private and public sector organizations individually. The literature review noted that the area of dynamic capabilities was relatively new and no literature could be found relating the implications of the resource-based view of the firm on public sector organizations. This result is therefore a significant contribution to the RBV body of knowledge.

Examining the relationship between strategic capability and the stakeholder groups showed that the relationship with the Product and Services variate had a poor fit. Although this may have been expected for the public sector where there is limited product and service development, it was a surprise not to see the relationship in the private sector, as many organizations compete with a 'New Products' strategy (Ansoff (1991); Johnson and Scholes (2002)). A conclusion could be that measurement of the Products and Services variate had some limitations (Churchill (1979)). The poor fit on the other

stakeholder groups with the public sector sample was explainable. The concept of growth is more applicable with the private sector, and often public sector organizations take a view that as they service the community separate CSR measurement has little relevance.

Eisenhardt and Martin (2000) argued that under highly dynamic conditions an organization does not have the time to reconfigure its resources. Others noted that the RBV has a weakness in that the theory does not extend to Schumpeterian shocks (e.g., Grant (1991); Barney (1995); Priem and Butler (2001)). Several early Baldrige award winners in the USA have also run into difficulties due to changes in the environment (Porter and Tanner (2003)). A key question for the current research was whether the relationship between Strategic Capability and Performance would be affected by the dynamics of the environment. Support could not be found for this hypothesis, however.

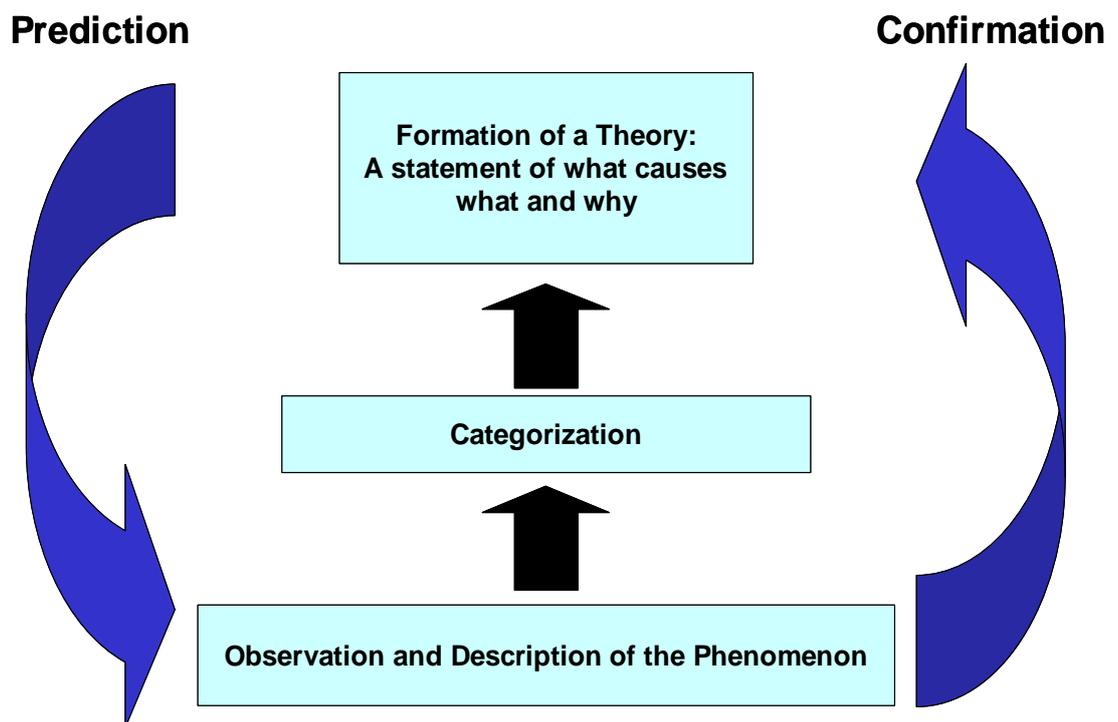
Johnson and Scholes (2002: p1064) defined hypercompetition as occurring '*where the frequency, boldness and aggressiveness of dynamic movements by competitors accelerate to create a condition of constant disequilibrium and change*'. D'Aveni stated that hypercompetition is '*an environment characterized by intense and rapid competitive moves, in which competitors must move quickly to build (new) advantages and erode the advantages of their rivals*' (D'Aveni (1994: p217-8)). Thomas and D'Aveni (2004) noted, however, that there is a growing debate about the very existence of hypercompetition and their work suggested that its existence might be restricted to manufacturing industries. The conclusion for the current research is that hypercompetition is a difficult construct to measure and that it is highly likely that the instrument chosen to operationalize the dynamics of the environment was not appropriate. This conclusion was supported by D'Aveni (2004), although he also notes that many organizations are seeking to avoid the impact of environmental changes (D'Aveni (2002)).

5.5 Contribution to dynamic capability theory

This final section combines the findings from the study to present a new framework for the classification of dynamic capabilities. It also explains the role Business Excellence may have in contributing to an organization's ability to respond to changes in its external environment.

Many authors have expressed an opinion on how to develop theory. The central theme is that a phenomenon should be explained (Weber (2003); Remenyi (2004)) and an account should be given predicting what actions will lead to what results (Christensen and Raynor (2003); Weber (2003)). Christensen and Raynor (2003) proposed three steps to aid

theory construction. In step one a description of the phenomenon under investigation should be defined. In the current work this phenomenon is dynamic capabilities. Step two sees the phenomenon being categorized to increase understanding about the phenomenon. The framework defined below enacts this step. Finally in step three a hypothesis or hypotheses should predict cause and effect relationships (or laws as defined by Webber) involving the phenomenon. The hypothesis is that Business Excellence is a contributor to the development of organizations' dynamic capabilities. Christensen and Raynor (2003) provided a graphical representation of their three steps (Figure 5-3).



Adapted from Christensen and Raynor (2003)

Figure 5-3: Construction of a theory

In this section, first a quick reminder of the resource-based view of the firm is presented together with the reasons why the concept of dynamic capabilities was introduced. Secondly, the arguments for the need for an organization to change are reviewed with particular reference to Barney's 'O' in his VIRO framework (Barney (2002)). Thirdly, a framework is suggested, which proposes that dynamic capabilities may be viewed from both a mechanical process perspective and from a human social system perspective. An analysis of the various clone resource-based theories and dynamic capability theories is used to provide support for the framework. Finally, evidence is presented that supports the role that Business Excellence plays in the framework. The conclusion is that

investing in Business Excellence will lead to the development of organizations' dynamic capabilities.

The emergence of dynamic capabilities as a concept

Penrose's theory of the growth of the firm first introduced the notion of the resource-based view as an alternative to Porter's market-based view of the firm (Ferdinand, Antonacopoulou et al. (2004)). Many authors have criticized the resource-based view as it does not take into account the business environment (Barney and Zajac (1994); Henderson and Mitchell (1997); Das, Handfield et al. (2000); Eisenhardt and Martin (2000); Eisenhardt and Sull (2001); Fiol (2001); Priem and Butler (2001)). As noted by Wernerfelt (1984), they are two sides of a coin.

The resource-based view has been criticized for being static (Lei, Hitt et al. (1996); Priem and Butler (2001)). Despite the popularity of management solutions such as core competences (Hamel and Prahalad (1996)), it was realised, to avoid issues such as core rigidities, the configuration of resources had to change over time (Leonard-Barton (1992)). Hence came the concept of dynamic capabilities, which have been described as an evolutionary version of the resource-based view of the firm (Ferdinand, Antonacopoulou et al. (2004)). Many authors have defined what dynamic capabilities do for an organization, the common theme being that they reconfigure an organization's resources (see Figure 2-13).

The dynamic nature of Barney's VIRO framework

In describing his VIRO framework Barney noted that, for an organization to remain successful, it has to exploit its resources (Barney (2002)). This is represented by the 'O' in the framework. Termed 'complementary resources and capabilities', Barney gave examples of the management control systems, reporting structures and the compensation systems. Although not designed to engineer change, it is argued that these systems have a role to play in managing change. Wiklund and Shepherd (2003) noted that there has been a limited interest in studying the relationship between the 'O' and 'VIR' resources in Barney's framework and drew a direct comparison with the manipulation of resources by the organization and the concept of dynamic capabilities. It is therefore proposed that it is the capabilities embedded in the organization that lead to the ability of an organization to manage change. This is no an earth-shattering observation, but it is surprising that Barney and dynamic capabilities are not more closely linked in the literature.

A framework for the classification of resources and dynamic capabilities

It should be remembered that dynamic capabilities remains a concept and there is some argument if such a phenomenon exists (Eisenhardt and Martin (2000)). Assuming that it does, there are many views as to where dynamic capabilities are actually rooted. Figure 5-4 proposes a model that may help improve the understanding of the source of dynamic capability. The model has three layers. The base represents an organization's resources, using Hall's classification, with Assets, or things that an organization owns, and Capabilities, or things that organizations do (Hall (1994)). These resources generate the advantage in the markets and the assets and capabilities will vary from industry to industry (Snow and Hrebiniak (1980b); Aaker (1989); Hall (1994)). This is the basis of the resource-based view of the firm.

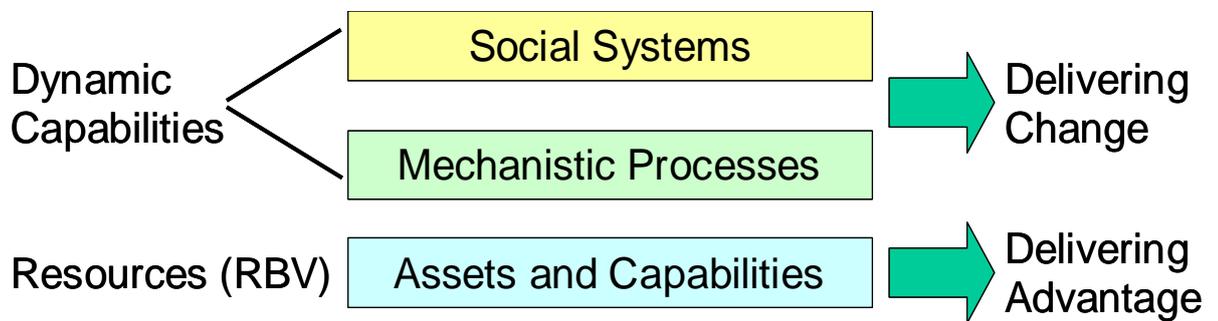


Figure 5-4: A dynamic capabilities classification framework

The concept of dynamic capabilities has been divided into two distinct levels: the mechanistic process level and the social systems level. Both are necessary to deliver change and in combination provide the ability to manipulate the resources. By way of support for this classification, various domain definitions of dynamic capabilities have been examined to see where the authors place their emphasis (Table 5-7). Also included in the analysis are the resource-based view clones, such as the process-based and knowledge based view of the firm, as these are also evolutionary ideas. Many authors have made a strong link between knowledge systems and dynamic capabilities (Wiklund and Shepherd (2003)).

Several conclusions may be drawn from the analysis in Table 5-7. Firstly, of the theories analyzed the vast majority have a social element reinforcing the contribution social systems make to competitive advantage. Secondly, most of the resource-based view clones, such as the capabilities based view and knowledge-based view, have a dynamic element supporting the 'evolutionary' claim. Conversely, some of the theories designed to tackle the need for change also have a resources element. This just reinforces the complexity of the situation. Thirdly, the classification framework appears to

accommodate the theories proposed by others suggesting that it is a valuable framework. It may be appropriate to sub-divide the capabilities aspect of resources into process and social system capabilities, as capabilities include the social systems side of resources. But this revision is postponed as it only serves to give a minor clarification.

Table 5-7: Classification of dynamic capabilities and other resource-based definitions

Dynamic Capability Construct Domains	Reference	Classification		
		RBV	Dynamic Capabilities	
		Resources	Process	Social
<i>Strategic capability</i> : The capability of an enterprise to successfully undertake action that is intended to affect its long-term growth and development	Lenz (1980)	✓	✓	
<i>Skill-based competition</i> : Based on four meta-skills – Learning, Innovating, Skill categorizing and Embedding	Klein, Edge et al. (1991)			✓
<i>Identity-based view</i> : Human resources and behaviours	Fiol (1991)	✓		✓
<i>Dynamic capabilities</i> : Harvest the wellspring of creativity and knowledge among the company's employees leading to changes in organizational cultures, systems, views of human resources and investments in upgrading the firm's human capital. Another way is to use external sources	Zahra (1999)			✓
<i>Capabilities-based competition</i> : A capability is a set of business processes strategically understood. There is a need to have speed, consistency, acuity, agility and innovativeness	Stalk, Evans et al. (1992); Sirkin and Stalk (1995)	✓	✓	
<i>Strategic flexibility</i> : Capabilities – these are largely embodied in the collective skills and knowledge of its people and the organizational procedures that share the way that employees interact	Hayes and Pisano (1994)	✓	✓	✓

Dynamic Capability Construct Domains	Reference	Classification		
		RBV	Dynamic Capabilities	
		Resources	Process	Social
<i>Dynamic core competences</i> : Organizational learning through information transfer and retrieval, experimentation and dynamic routines	Lei, Hitt et al. (1996)		✓	✓
<i>Dynamic capabilities</i> : Organizational and managerial processes	Teece, Pisano et al. (1997)		✓	✓
<i>Process-view of the firm</i> : Customer relations, capabilities and competences	Hatton and Rosenthal (1999)	✓	✓	✓
<i>Dynamic capabilities</i> : Organizational skills and knowledge, and the cycle of societal learning	Pitt and Clarke (1999)			✓
<i>Dynamic capabilities</i> : Reside in organizations' processes and strategic routines such as product development, strategic decision-making and alliancing	Eisenhardt and Martin (2000)		✓	✓
<i>Dynamic capabilities</i> : Micro processes and roles that form the capabilities, the impact of social imperatives and recombination to constitute new organizational forms	Galunic and Eisenhardt (2001)	✓	✓	✓
<i>Dynamic capabilities</i> : Emergence of integrative routines	D'Adderio (2001)			✓
<i>Knowledge-based theory of the firm</i> : External relationships, internal structures and individual competence	Sveiby (2001)	✓	✓	✓

Dynamic Capability Construct Domains	Reference	Classification		
		RBV	Dynamic Capabilities	
		Resources	Process	Social
<i>Strategic flexibility</i> : Top management, organization and culture, strategic planning process and strategy	Lindgren (2001)		✓	✓
<i>Developing capabilities and resources</i> : Internal learning, external learning and proprietary processes & equipment	Schroeder, Bates et al. (2002)	✓	✓	✓
<i>Dynamic capabilities</i> : Organizational capabilities that are concerned with change. Organizational capabilities are high-level routines that, together with its implementing input flows, confer upon an organization's management a set of decision options for producing significant outputs of a particular type	Winter (2003)		✓	
<i>Dynamic Managerial Capabilities</i> : Managers manipulating resources through decision making	Adner and Helfat (2003)			✓
<i>Dynamic capabilities</i> : Exploration and exploitation through processes	Benner and Tushman (2003)		✓	
<i>Dynamic capabilities</i> : Related to trust comprising of capability, goodwill, behaviour and self-reference. Trust generates a meta-capability	Blomqvist and Seppanen (2003)		✓	✓

Dynamic Capability Construct Domains	Reference	Classification		
<i>Dynamic capabilities: Social capital</i>	Blyler and Coff (2003)			✓
<i>Practice-based view: Processes and practices</i>	Soderling, Lindhult et al. (2003)	✓	✓	

The role of Business Excellence in developing dynamic capability

The idea of the link between Business Excellence and dynamic capabilities was triggered by the idea of Savolainen's 'Mental buffer' as a result of the embedding of a Business Excellence philosophy within an organization (Savolainen (1999); Savolainen (2000a)). In her work, Savolainen did not make the connection herself. In work within the change management literature, Ulrich and Yeung (1989) noted three critical competences relating to the need to help individuals focus on organization mind-sets, facilitating strategy implementation and building change capability. The concept of strategic capability as defined by Lenz (1980) also related to strategy implementation. In their model, Petrick, Scherer et al. (1999) made a direct connection between leadership skills and assets generating capability differentials. All this evidence points towards Business Excellence functioning as an enabler of change capability.

The EFQM Excellence Model[®] contains both social and process elements. The quality ideology aspect has already been mentioned and the work of others provides support for the other aspects. The information previously provided in Table 5-3 has been represented in Table 5-8 to show support for the resource-based and dynamic capability classifications in Table 5-7.

Table 5-8: Classification of Business Excellence construct definitions

Reference	Business Excellence Construct Domains	Classification		
		Resources	Process	Social
Curkovic, Melnyk et al. (2000)	<ul style="list-style-type: none"> • TQM strategic systems • TQM operations systems • TQM information systems 	✓	✓	
Tena, Llusar et al. (2001)	<ul style="list-style-type: none"> • Customer focus • Continuous improvement • Employee fulfillment • Organisation as a total system 	✓	✓	✓
Rahman (2001)	<ul style="list-style-type: none"> • Leadership • Information and analysis • Strategy and planning • Processes, products and service • People • Customer focus 	✓	✓	✓

There is a host of other evidence supporting the argument that Business Excellence contributes to the development of dynamic capabilities. In reviewing the challenges for managers in the 21st century, Prahalad (2000) noted six key elements central to the changing face of management. Although neither Business Excellence nor dynamic capabilities were mentioned specifically, in reviewing these six elements the link to both is extremely close. The elements are:

1. Having a shared competitive agenda
2. Creating a clear charter of values and behaviours and enforcing them without exception
3. Focusing on influence without ownership – managing relationships rather than transactions
4. Competing for talent and building the skill mix to retain sources of competitive advantage
5. Increasing speed by making decisions at the lowest levels
6. Leveraging competitive resources requires that resources are constantly recombined to address emerging opportunities

Further evidence for a connection comes from Zott (2003), who noted the role that best practice transfer, which is central to a Business Excellence approach (Porter and Tanner (1998)), has to play in the re-configuration of resources. Zott (2003) specifically noted the potential effect of leadership and culture on dynamic capabilities and called for research in this area.

In discussing how Business Excellence develops distinctive capabilities, Tena, Llusar et al. (2001: p934) noted that Business Excellence develops assets that are '*specific, produce socially complex relationships, are steeped in the history and culture of the company and generate tacit knowledge*'. Authors have noted that socially complex assets and capabilities such as reputation, trust, friendship, teamwork and culture are more difficult to imitate (e.g., Barney (1995); Ferdinand, Antonacopoulou et al. (2004)). The fact that Business Excellence is socially complex has also been noted (Briggs and Keogh (1999)). As stated by Hodgetts, Luthans et al. (1999: p17), '*The skills, ideas, efforts and behaviours of people are inimitable*'.

5.6 Chapter summary

The result of the examination of the relationship between Leadership Excellence and Performance has demonstrated that Leadership Excellence does have a positive relationship with Performance supporting the benefits of Business Excellence research. This conclusion is appropriate to both public sector and private sector organizations and it could not be concluded that Business Excellence has a different level of effect in public over private organizations. Organization size was found to have weak effect on the strength of the relationship between Business Excellence and Performance, with the relationship being slightly stronger with large organizations. Although this result is at variance with the findings of Hendricks and Signhal, their conclusions were based on 'percentage terms' and there is evidence in the literature as to why a stronger relationship may be observed with large organizations.

Whether the unit was a whole organization or business unit, or whether the organization operated in a highly dynamic environment did not have an effect on the relationship between Leadership Excellence and Performance. The first conclusion is at variance with the NIST results but the reliance of this result has been questioned. In terms of the dynamics of the industry, the lack of an effect was attributed to instrumentation.

One area that the research did call into question was the benefit of Business Excellence on all stakeholders. In particular the study could not find a positive relationship between Business Excellence and Society results. This result is supported by the stakeholder literature. Related to this, a question mark has been raised over the accuracy of the weighting's on the results area of the EFQM Excellence Model[®].

It was found that strategic assets are built over time, with it taking around 2-3 years to build the strategic assets and capabilities. This compares favourably with the timescale researchers have used to monitor Business Excellence implementation. From the analysis of the sources of sustained organizational advantage it argued that Business Excellence may be a source of the generation of such advantages.

Strategic Capability, as measured through an organization's ability to react to change, was positively related to organizational performance as predicted by others (e.g., Teece, Pisano et al. (1997); Eisenhardt and Martin (2000); Savolainen (2000a); Zott (2003)). This was the case for both the public and private sector organizations and the result is of particular interest as the majority of the work on dynamic capabilities is theoretical. The research could not support the view of Eisenhardt and Martin (2000) that the dynamics of the environment had an effect, but it was not appreciated how difficult it was to measure

highly dynamic conditions when the methodology was designed (D'Aveni (2004); Thomas and D'Aveni (2004)). Problems measuring the dynamics of the environment have been noted in other studies. In discussing measures of the environment, Lenz (1980: p213) noted '*this approach to measuring environments is fraught with serious conceptual and methodological problems*'. That measuring the environment is so difficult was a valuable learning point from the current study.

There was a positive relationship between Business Excellence, as measured through Leadership Excellence, and Strategic Capability. This confirms the views of both Eisenhardt and Martin (2000) who believed that dynamic capabilities could be found in strategic routines, and Zott (2003) who recognized a relationship between dynamic capabilities and leadership and culture.

Finally, a framework was developed suggesting the role that Business Excellence might play in building dynamic capability, which in turn leads to higher performance. This framework is applicable to both the public and private sector organizations, although it was noted that the sources of advantage vary between the two sectors.

6 Conclusions

This Chapter brings the work to a close. In the first section the main academic contributions of the research are summarized, which includes an outline publication plan. This is followed by the limitations of the research before proceeding to discuss some ideas for future research.

The second section addresses the practical nature of the research and three aspects are considered. Firstly, the outcomes of the research are summarized from a business perspective, which includes a number of potential business (as opposed to academic) practical implications for organizations. Secondly, although primarily a positivist approach was taken for the research, there was a constructivist element beyond the questionnaire design and results interpretation activities. The researcher had an influence on the work, mainly due to experience over the past 25 years and some of the consequences of this are debated. Thirdly, one of the many benefits of a Henley DBA, and especially one that was been supervised by a member of the International Centre for Management of Technology (ICMOT), was the practical focus of the work. The last topic considered is management by research.

In the penultimate section, the learning aspect of the work is discussed, just before we switch off the light and close the door on the current piece of work.

6.1 Academic implications of the research

This section covers the academic implications of the research. First the contributions of the research are summarized as an extension of the Discussion Chapter. This leads to a number of themes for potential publications. As with any academic research the limitations of the research are discussed, which includes reinforcement of the point that, as the research utilized a self-reporting survey, the relationships observed, such as that between Business Excellence and Performance, are based on respondents' perceptions. The final area discussed is the area of future research.

6.1.1 Contributions of the research

The research has made several valuable contributions covering a number of areas. Although this was not the intention at the start, it replicated two other studies as well as adding to the Business Excellence benefits and resource-based view literature. Inclusion of the public sector in the sample was a contribution in its own right. In this section four areas are addressed in terms of main contributions from this work. Firstly, the question as to whether Business Excellence delivers a sustainable organizational advantage is discussed. This was the main theme of the thesis and deserves to be debated at the end

of the work. Secondly, the relationship between Leadership and Performance is tackled. That evidence for such a relationship is a product of this work is an unexpected major contribution. Thirdly, the fact that the resource-based view of the firm has been applied to public sector organizations receives comment. Finally, the contribution to research methodology is recorded. These main contributions are based on the arguments outlined in more detail the Discussion Chapter.

6.1.1.1 Does Business Excellence generate a sustainable organizational advantage?

The research contributed to the benefits of Business Excellence research, as it indicated that Business Excellence, as measured through Leadership Excellence, does indeed correlate positively with Performance. In the Discussion Chapter, the parallel between the current research and the works of others (Curkovic, Melnyk et al. (2000); Rahman (2001); Tena, Llusar et al. (2001); Su, Li et al. (2003)) was drawn. Of particular importance, the current research is one of a handful of studies that have included organizations of various sizes and from both the public and private sectors.

It is recognized that the relationship between Business Excellence and Performance, as measured in the current study, is limited by the use of self-reporting instruments, although the literature review did identify several other researchers who lived with this limitation. It was also noted that there were limitations with other research approaches, such as in the share price research, where the choice of benchmarks had an affect on the final outcomes.

That there is a relationship between Business Excellence and Performance is of immense interest. But this does not answer the question set out in the title of this thesis, which is 'How Business Excellence can contribute to sustained organizational performance in both public and private sector organizations'. To address this question this section looks at three aspects of sustainable organizational advantage following the logic of Hatch and Dyer (2004), who differentiated between generating and sustaining any advantage. The first aspect is whether Business Excellence can generate an organizational advantage. The second aspect is whether Business Excellence can sustain the organizational advantage generated, and the third aspect is how Business Excellence can help organizations keep their organizational advantages current.

Can Business Excellence generate an organizational advantage?

The question as to whether Business Excellence does confirm a competitive (or organizational) advantage on an organization is still open to debate. It will be recalled

that that there is little theory to underpin the view that Business Excellence leads to a competitive advantage (Reed, Lemak et al. (2000)), although using the resource-based view of the firm these researchers did deduce that Business Excellence was capable of producing a cost-based or differentiation-based advantage. They called for more research in this area. Yet previous research has suggested that Business Excellence does not guarantee business success (Powell (1995); Terziovski and Samson (1999); Eriksson, Johansson et al. (2003)), although it was suggested that the business environment could be an important factor. Further, a survey of 500 firms using Business Excellence found that only 36% believed it significantly boosted their competitiveness (Little (1992)), so whether Business Excellence does create an advantage is not an open and shut case.

To examine the relationship further, use will be made of Grant's 'practical framework', the components being the identification and classification of resources, the identification of capabilities and an appraisal as to whether the resources and capabilities lead to a competitive advantage (Grant (1991)). In considering the third factor one is reminded of Barney's 'O' (Barney (2002)). But before entering the discussion two points need to be raised. Firstly, the current research does not seek to identify an empirical relationship between the sources of organizational advantage and the generation of the advantage. Table 5-6 does draw a comparison between the sources of organizational advantage identified and the Business Excellence critical success factors, but it is recognized that this evidence is limited. This has been noted as an area for future research below. Secondly, in separating the resources and capabilities, one can run into tautological problems (Priem and Butler (2001)), so these are treated together.

In identifying the sources of organizational advantage, the role of people and the social systems in generating the intangible assets was noted. By classifying the sources of organizational advantages in a number of ways, it was argued that Business Excellence might contribute to the generation of organizational advantage. The analysis in Table 5-5 suggests that organizational architecture is the main source of advantage in both public and private sector organizations. The public sector had no 'market factors' ranked in their top 10, with the Organization's Reputation coming in at number 11 and Service/ Product/ Brand reputation at number 21. Kay noted that 'reputation is not equally important in all markets' (Kay (1998: p87)) indicating that this is not a necessarily a public versus private sector issue. It was interesting that the Kay classifications of innovation and strategic assets did not feature highly, which was surprising as innovation is fundamental to a product development strategy (Porter (1985); Kay (1998); Johnson and Scholes (2002)) and 'strategic assets' is an often used term in the resource-based view of the firm.

The high ranking of reputation in previous work (Aaker (1989); Hall (1992)) and the current study is significant and its importance supported by other authors (DTI (2001); Low and Kalufat (2002); Kaplan and Norton (2004)), with relational or marketing capital also featuring widely (DTI (2001); Sussland (2001); Kristensen and Westlund (2003); Print (2004)). Day (1994) drew a direct link between Business Excellence and reputation, with this link being supported by other authors (Hamel (1994); Lemak and Reed (1997); Easton and Jarrell (1998); Edgeman and Scherer (1999); Edgeman and Rodgers (1999); Kanji and Sá (2001a)).

So, to summarize, in examining the potential sources of organizational advantage, Reputation, which has been linked directly with Business Excellence, and People skills and competences have been identified as two key sources of advantage. The question to be asked now is 'how are these sources of advantage used or built to create the advantage?' To answer this question we turn to Barney who noted that Business Excellence 'can further the development of a series of routines and of a form of behaviour in the organization, which result from a process of learning and experience within the company itself' (Barney (1991a: p93)). This is interpreted in the same way as other researchers (Wiklund and Shepherd (2003)) in that Barney was referring to the 'O' in his model (Barney (2002)).

An effective strategy builds strategic assets and future strategy must make effective use of the resources that have been amassed. Many authors have noted the value of intangible assets, which is the category that both reputation and people skills and competences fall into. Itami (1987) considered invisible assets to be accumulated in two ways, either through a direct route where a firm takes explicit actions to achieve the goal, or an operations route, in which assets are accumulated as by-products of daily operations. The latter route, which is consistent with the Business Excellence approach, develops assets that are 'specific, produce socially complex relationships, are steeped in the history and culture of the company and generate tacit knowledge' (Tena, Llusar et al. (2001: p934)). Amit and Schoemaker (1993: p35) also made a distinction between resources, which are defined as 'stocks of available factors that are owned or controlled by the firm converted into final products or services, by using a wide range of other firm assets', and capabilities, which relate to a firm's capacity to deploy the resources. Capabilities are 'information-based, tangible or intangible processes that are firm specific and are developed over time through complex interactions among the firm's resources'. These correspond to the conditions, which, according to the resource-based view, allow a sustained competitive advantage (Barney (1991a)).

To support this, Carmeli and Tishler (2004) found a relationship between intangibles and performance in the public sector in Israel. They stated that 'the finding that strong organizational culture is critical to a local authority in achieving an advantageous position is especially notable' (Carmeli and Tishler (2004: p1271)). Blyler and Coff (2003) noted that, in socially complex systems, such as Business Excellence, the appropriation of the value generated covers more stakeholders than just the shareholders, which is a fundamental concept of the EFQM Business Excellence Model[®] (EFQM (2003)).

In the current study the focus has been on leadership as this was how Business Excellence was measured. But a 'world-class' organization, as evaluated through a comparison with a Business Excellence model, would cover other practices as well as leadership. It would include strategy formulation and implementation, people management, management of resources (including intangible resources), and process management. To take some examples from the literature that indicate that Business Excellence might create a competitive advantage, Nelson and Winter (1982) proposed that a key ingredient between resources and capabilities was the ability to get cooperation and coordination within teams. This requires that an organization motivates and socializes its members in a manner conducive to the development of smooth running routines. Wright, Dunford et al. (2001) drew a comparison between the RBV and Strategic Human Resource Management, noting that RBV had put people on the radar screen. They noted that a number of RBV concepts proposed as sources of competitive advantage turn the researchers' attention between the intersection of strategy and human resource issues. These concepts included Culture/ corporate identity, Knowledge, Learning organizations and Leadership.

Hall (1992) had 'culture' as one of the four categories of his intangible asset classification framework. His later work examined culture in greater detail, identifying six aspects to the culture: Ability to manage change, ability to innovate, team working ability, participative management style, perception of high quality standards, and perceptions of high standards of customer service (Hall (1994)). Not only do these provide further support for the work of Day (1994), they reflect a Business Excellence social system. Haslam (2004) made reference to the fact that Business Excellence, and other initiatives, has been used to develop the culture of the organisation. Michie and West (2004) developed a theoretical model that links the culture of the organization with organizational performance mediated by employee satisfaction.

In reflecting on the situation, Guillen and Gonzalez stated 'leadership seems to be the key of success in TQM implementation process, it is hard to find sound reasons to justify

that TQM cannot be deployed without leadership' (Guillen and Gonzalez (2001: p175)). In considering the different theories of leadership, Business Excellence leadership is a mixture of transformational and distributed leadership (Bolden (2004)). There is also some similarity with Ireland and Hitt's definition of strategic leadership, which included a person's ability to anticipate, envision, maintain flexibility, think strategically, and work with others to initiate changes that will create a viable future for the organization (Ireland and Hitt (1999)). Strategic leadership is distributed amongst employees within the organizational community.

Nelson and Winter (1982) observed that the organization's style, values, traditions and leadership are critical encouragements to the cooperation and commitment of its members. That leadership creates competitive advantage was supported by Petrick, Scherer et al. (1999), who noted that successful corporate leaders, when applying their global leadership style and substance skills, enhance the intangible assets of corporate reputation. This provides further evidence for the link between leadership, through its application in Business Excellence, creating an organizational advantage. All this evidence begs the question whether there should be a 'leadership-view of the firm'?

Turning to the process side of Business Excellence, many of the evolutionary resource-based views have similarities with Business Excellence. Stalk, Evans et al. (1992) referred to 'capability-based competition' where capabilities are more broadly based than core competences. Dess and Picken (1999) supported Stalk, Evans et al. (1992) with their view that processes are at the centre of the success and talk in terms of the need to perform a 'Strategic Inventory' based around Porter's value chain. Further, the practice-based view of Soderling, Lindhult et al. (2003) and the process-based view of Hatton and Rosenthal (1999) have direct links with Business Excellence. One of the key features of the process-based view is the 'three Cs': Customer relations, Capabilities and Competences, providing yet more support for the views of Day (Day (1990); Day (1994)).

The overall conclusion from this section is that there is evidence that Business Excellence may generate organizational advantage. This has been argued by reviewing the social process side of Business Excellence, which includes leadership and culture, and the process side of Business Excellence.

Can Business Excellence sustain the organizational advantage generated?

Briggs and Keogh (1999) reported organizations that have adopted Business Excellence continue to struggle to retain their competitive advantage. This may be because

advantages generated in this way are not sustainable. In this section the question of sustainability of organizational advantages that have been generated through Business Excellence is examined using Grant's framework of the four determinants of sustainable advantage: Durability, transparency, transferability and replicability.

Sveiby (2001) noted that tangible goods tend to depreciate when transferred, but knowledge grows when it is used and depreciates when not used, so a principle of the knowledge-based view was to use knowledge transfers to create value. Business Excellence may be argued to have a similar affect when practices are transferred from area to area, or even from organization to organization. Despite this, there is an indication that organizational advantages may be getting less durable. Although the difficulties in measuring replacement periods is acknowledged, the fact that the replacement periods in this study are shorter than those from Hall's study in 1992 might be taken as an indication that durability of the advantages is reducing with time.

Transparency is Grant's second determinant. Organizations wishing to protect their advantages tend not to broadcast the details of the resources and capabilities that underpin them. The formula of Coca Cola is a well-worn example of this. Despite this, with Business Excellence, organizations often open their doors to share their good practices, even with competitors. One is reminded of the story of the Japanese showing Ford Motor Company representatives around their manufacturing plants to provide an insight on their quality circle approaches. When asked why they did this when Ford was a direct competitor, one senior manager replied to the effect that they were happy to do this as 'we will show you as we know you will never do this for yourselves' (Hutchins (1990)). He was referring to the cultural differences between Japanese and Americans.

Transparency is hindered by the complexity of the systems. Dierickx and Cool (1989) proposed that inimitability could be protected due to causal ambiguity and social complexity, both of which are related to the systems that Business Excellence generates. In addition, Hatch and Dyer (2004) observed that many of the resources and capabilities that generate sustainable advantages are either unobservable or extremely difficult to measure. I show you but you do not see.

Grant's third determinant was transferability, and two points may be made. Firstly, staying with Hatch and Dyer's study on the competitive advantage of human capital, they found that investments in firm-specific human capital, which often leads to an increase in social complexity, had a significant effect on learning and firm performance (Hatch and Dyer (2004)). Business Excellence is an example of such an investment. Crucially for the

current discussion, they found that acquiring human capital from external sources significantly reduced learning performance. The inference is that you can buy the people but you cannot buy in the social systems, hence transferability in this case is difficult.

A second point relates to costs and timing. Zott (2003) argued that performance differences between firms might occur due to the costs and the differential timing with which they are used. This view is consistent with that of Argarwal, Sarkar et al. (2002), who argued that long term survival may depend on timing more than anything else.

The fourth and final determinant of sustainable advantage is replicability, which is seen as a combination of the previous two determinants. In discussing distinctive capabilities, which he argued could be generated by Business Excellence, Day (1994) noted that competitors find them difficult to understand and imitate. He went on to add that theory would suggest that this is especially true with complex, multistage processes, in which there is a large amount of tacit knowledge throughout the organization. From her case study work, Savolainen provided quotations from interviewees reinforcing the inimitable nature of Business Excellence, *'it's a competitive advantage that cannot be copied or stolen, it must be accomplished and earned through your own efforts'* (Savolainen (2000b:p 202)).

Can Business Excellence help organizations keep their organizational advantages current?

So far we have examined whether there is a case for Business Excellence generating a competitive advantage and, if this is the case, whether such an advantage would be sustainable. The answer to the first question is that, within the limitations of the research, there is an indication that Business Excellence may have an impact on both the social system and the practices. Further, the previous section suggested that the complexity of such advantages made them sustainable. Both of these relate to the static nature of sustainable advantages. The static nature of the resource-based view has been criticized (Leonard-Barton (1992); Lei, Hitt et al. (1996); Priem and Butler (2001)).

In this section, a third question regarding competitive advantage is examined. This is whether Business Excellence has an impact on organizations' ability to develop advantages in line with its changing environment. This is the dynamic nature of the sustainable advantages. As noted earlier, the body of knowledge on dynamic capabilities is fast developing and the results of this research make an important contribution to this area of theory. Other researchers have been searching for the sources of dynamic

capabilities and this has proved to be challenging. For example, qualitative work by Easterly-Smith suggested that the actual causes of dynamic capability are different from those identified by organizations (Easterby-Smith (2004)).

There is evidence supporting the argument that Business Excellence contributes to the development of dynamic capabilities. It will be recalled that, in reviewing the challenges for managers in the 21st century, Prahalad (2000) noted six key elements central to the changing face of management. Although neither Business Excellence nor dynamic capabilities were mentioned specifically, in reviewing these six elements the link to both is extremely close. Itami (1987) argued that a characteristic of successful organizations is the recognition that there is a learning process that runs in parallel with all operations that enhances intangible assets. Learning is a key component of the EFQM Business Excellence model[®].

Quality circles, a basic Business Excellence approach, may be used to facilitate organizational development (Furnham (1997)). Day (1994) made a direct link between Business Excellence and changing capabilities, noting that Business Excellence supports a market-driven organization and that top-down direction and commitment was important for this to succeed. Business Excellence also allows for both the company's adaptation to its environment and the deployment of leadership abilities through the articulation and communication of a shared vision (Webley and Cartright (1996)).

Here we are particularly interested in leadership's impact on change, as Business Excellence is measured through leadership in the current study. Eisenbach, Watson et al. (1999) noted the importance of leadership to change management, and Ireland and Hitt (1999) included a reference to change when constructing their definition of strategic leadership. Higgs (2002) noted that it has been estimated that up to 70% of change initiatives fail and that there is a driving need for leadership behaviours which result in effective change implementation.

Managing volatility in the environment will be a major challenge for managers in the future (Prahalad (2000)), and Jones (2004) argued that high-performing leaders respond to change faster, deal with ambiguity, provide direction, manage constraints and leverage the intellectual capital of the people surrounding them. Rosenbloom (2000) suggested leadership by individuals may be a 'central element' in the more general dynamic capability of an organization to change, but it is of interest that Cockerill (1993) found that management competence has a greater influence on performance in dynamic environments than in static environments, implying leadership is not so crucial in times of

stability. This finding reinforces the importance of leadership and also may explain why the Environment Dynamics had a positive effect on the Leadership Excellence and Performance relationship, as opposed to the negative relationship expected.

In considering the effect of leadership in relation to dynamic capabilities, the model displayed in Figure 5-4 suggests that leadership will have both a process perspective and a social perspective. Grint (2004) described the complexity of leadership, recognising that there is a tension between the process perspective of leadership and the social perspective when trying to define leadership. Several other authors supported that there are two perspectives. In describing skills Klein, Edge et al. (1991) referred to the hard factors such as equipment and facilities, and to the soft factors such as the organisation culture. They argued that both are necessary to develop skills in an organization. Further, Higgs and Rowland (2001) considered that organizations had to tackle change from a fundamental perspective, for example changing the culture or identity, and from a capacity perspective, which is more aligned to processes. A third example comes from the work of Ethiraj, Kale et al. (2005) who, in studying software services and projects, found two types of capability. The first was client-specific, built through interactions with clients over time through learning, and the second, project management capabilities, which were related to specific projects. The first of these relates to the social perspective and the latter to the process perspective.

Taking the process perspective, Lenz (1980) introduced 'strategic capability', which is the concept of the capability to undertake strategic action. The main theme is the process of strategy implementation and it is linked to resources such as financial, physical, human, organisational and technological. More recently, Bowman, James et al. (2004) revisited this area, with their work drawing parallels with Business Excellence as it calls for the use of a vision and the need for leaders to inspire their followers.

Turning to the social perspective, the work of Savolainen has been mentioned several times and, in particular, her conclusion that the advantageous embedding of a quality management ideology began to dislodge the assumptions and beliefs of the established management paradigm (Savolainen (2000a)). Ulrich and Yeung (1989) supported the need for a shared mindset, noting that critical competencies helped to focus individual attention on organizational mind-sets; facilitated strategy implementation; and built change capability. A third example of this perspective comes from Adner and Helfat (2003), who proposed that dynamic managerial capabilities were rooted in three underlying factors: Managerial human capital, managerial social capital and managerial cognition.

6.1.1.2 Relationship between Leadership and Organizational Performance

This research contributes to the Leadership body of knowledge, as Leadership is used as the measure of Business Excellence. One of the assumptions prior to the research was that Leadership would have a well-proven relationship with Performance. Some evidence for this relationship was found in the work of Prabhu and Robson (2000) who used the PILOT instrument, and the work of Sá and Kanji (Kanji and Sá (2001a); Sá and Kanji (2003)). But the value of the evidence of a relationship between Leadership and Performance was only fully appreciated following a question from the floor during a presentation on the current research at the 2004 Leadership Refrains conference held at the University of Exeter (Tanner (2004j)). The question was somewhat rhetorical, as the participant stated that there was no evidence in the literature of a relationship between Leadership and Organizational Performance. The question at the conference sparked a search of the literature and although some evidence was found, this was not as abundant as first expected.

Using an experimental design, Shea (1999) compared the effect of a charismatic leadership style with both structuring and considerate leadership styles. The hypothesis was that leaders who display charismatic leadership behaviours would provide followers with clear visions of the future, expressing high expectations for follower performance, and displaying confidence in their followers' ability to accomplish challenging tasks. Shea (1999) cited House (1988) and Bass (1990), noting that leadership research had consistently found a strong positive relationship between charismatic leadership behaviours and follower performance.

The results found that that considerate leaders outperformed charismatic leaders at the start of the experiment, but the performance of the charismatic leaders' group caught up after the first two cycles. The group, led by the structuring leader, consistently underperformed in relation to the other two groups. Shea (1999) concluded that the findings were consistent with prior research where participants working under structuring leaders never outperformed those working under considerate or charismatic leaders, and they performed significantly worse at the outset.

It is noted that the Shea (1999) research focused on follower performance, whereas the current research is concerned with organizational performance. In this area, Waldman, Ramirez et al. (2001) surveyed 48 of the Fortune 500 firms, taking a cross-section of firms from different industries. Senior managers were selected for the questionnaire and the objective was to secure two returns per firm. Transactional and charismatic

leadership were measured using items from the Multifactor Leadership Questionnaire (MLQ), this being the only instrument that assesses both. Perceived environmental uncertainty was measured using four items from an instrument developed by Khandwalla (1976). Organisational performance was measured as Net Profit Margin (NPM), computed as net income divided by net sales. Data for this was obtained from the COMPUSTAT database.

The results showed that, after controlling for organisational size (total assets), CEO tenure and 1989 performance neither transactional leadership nor charisma predicted significant variance on performance. There was evidence that perceived environmental uncertainty had a moderating effect on the relationship between CEO Charisma and corrected NPM (Waldman, Ramirez et al. (2001)).

Burgoyne, Hirsh et al. (2004) developed a model linking the development of leadership and management development with leadership and management competences, which in turn is linked to performance. They noted a lack of research to provide support for the leadership and management competences and organizational performance relationship, citing just three studies. Rucci, Kirm et al. (1998) studied 800 Sears stores in the US and found employee attitudes towards their jobs and employer to be positively linked to customer attitudes and business results. Barber, Hayday et al. (1999) conducted a similar study of 100 stores of a major UK retailer and found employee satisfaction and commitment to be positively related to increased sales. In both studies the quality of line management (as perceived by staff) was an important link in the chain between capability and organisational performance via its impact on employee commitment and motivation. Finally, Burgoyne, Hirsh et al. (2004) reported on a longitudinal study that concluded that none of a number of tools and techniques had a direct causal relationship to superior performance. What did make a difference was having a clear grasp of management and leadership practices (Nohria, Joyce et al. (2003)).

In conclusion, the current research provides evidence of a relationship between Leadership and Organizational Performance. That there appears to be very limited evidence to support such a relationship does cause some concern, and it must be remembered that the current research has based its findings on self-reported data so the relationship is based on respondents' perceptions.

6.1.1.3 Public sector organizations and the resource-based view (RBV) of the firm
'Studies applying the core concepts of the RBV in testing the effect of strategic elements on the performance of public sector organizations are rare' (Carmeli and Tishler (2004):

p1258)). It was surprising that the application of the RBV theory has not been further developed in the literature, with many authors avoiding the debate. This may be due to the close links between the concept of sustainable competitive advantage (which is somewhat under attack as a concept (e.g., Fiol (2001); Powell (2001)) and the generation of economic rents (Grant (1991); Peteraf (1993)), which is a concept that is not so easily applicable to public sector organizations. It is suggested that the resource-based view of the firm may be an appropriate approach for public sector strategy formulation in support of the argument of Makhija (2003). Of interest is that two recognized public sector strategy books by Bryson (1995) and Johnson and Scholes (2001) do not mention the RBV. In addition, a search of 'Public' and 'Resource' as words in the title field of EBSCO did not identify any literature. Grant (2004a) confirmed that the application of the RBV to the public sector was an under-developed area of theory.

6.1.1.4 Development of instruments

The research makes a contribution in the area of research methodology. On the positive side, some new instruments have been developed for use in public sector research, in particular the Performance and Strategic Capability instruments. The research also refines the Leadership Excellence instrument and applies this instrument in an English context, as opposed to the original Portuguese context (Sá (2004)).

On the negative side, the research has reinforced the difficulty in measuring highly dynamic environments

6.1.2 Potential publication themes

From the contributions a number of themes for potential publications have been identified. These are given, together with the relevant body of knowledge areas where these papers might be placed, in Table 6-1

Table 6-1: Potential themes for publications and relevant bodies of knowledge

Theme	Target Body of knowledge
Business Excellence and performance	TQM/ Business Excellence
Business Excellence and performance in the public sector	Public sector
The RBV and its application to the public sector	Public sector Strategy
Strategic/ dynamic capability/ and performance	Strategy
Sources of advantage	Strategy
Operational and financial reporting	Performance measurement
Leadership and performance	Leadership
Business excellence developing strategic/ dynamic capability	TQM/ Business Excellence Strategy
Leadership and strategic capability relationship	Strategy Leadership
Strategic/ dynamic capability model	Strategy

6.1.3 Limitations of the research

Several limitations were noted in the approach taken in conducting the research. Each of these will be discussed briefly.

6.1.3.1 *Reliance of self-reported instruments*

One of the conclusions from the research methodology literature was that self-reported instruments are commonly used in research. Many researchers have pointed out the limitations of their use, however. For example, Easton and Jarrell (1998) noted problems with self-reporting questionnaires in that respondents see the questions differently and that there is no critical evaluation of the response. Huber and Power (1985) expressed

four main concerns with such instruments in relation to data inaccuracy and bias. They noted that often respondents are motivated to provide inaccurate data when it suits their needs, that their perceptual and cognitive limitations result in inadvertent errors, they may lack crucial information about the event of interest when giving a response, and they have been questioned with an inappropriate data elicitation procedure.

That the method for collecting affects the results was concluded by Miller and Cardinal (1994). In reviewing the results of 26 previous studies examining the strategic planning and performance relationship, they concluded that self-reporting instruments gave more reliable results than by using archival data.

The main observation is that the use of self-reported scales imparts a limitation on the research, and as such, the results must be treated with some caution. The conclusions drawn in the study are based on the existence of relationships dependent on the perceptions of the respondents, and not true cause and effect relationships.

6.1.3.2 Key informant problems

As with any use of self-reported instruments (Downey, Hellriegel et al. (1975); Downey and Slocum (1975); Huber and Power (1985); Bourgeois and Eisenhardt (1988); James and Hatton (1995); Dess, Lumpkin et al. (1997); Curkovic, Melnyk et al. (2000); Kanji and Sá (2001a)), there is always a concern over the accuracy of the responses. In the current research care was taken to record the level of respondent so that any potential differences could be isolated, but running the regressions indicated that this was not having a major effect on the models. Such distortion of the data remains a concern, however.

6.1.3.3 Violation of the multivariate data assumptions

A limitation related to the normality of the data. One of the challenges in the current research was the desire to collect a sample from both public and private sector organizations and this required collection of data from different sources. It is believed this led to a sample that did not demonstrate normality in all circumstances. As mentioned in the text, although the data met the normality tests of + or - 1 on skewness and + or - 3 on kurtosis (Hair, Anderson et al. (1998)), in some circumstances the critical ratio did not meet the + or - 1.96 requirement (Sharma (1996)). Hair and colleagues did note, however, that most multivariate techniques are very tolerant to non-normal data (Hair, Anderson et al. (1998); Hair, Babin et al. (2003)). Sharma (1996) noted that an effect of using non-normal data is that it can over, or under, estimate the statistical significance tests. Precaution was taken by removing the outliers, which produced a dataset where

most of the variates had statistically significant Kolmogorov-Smirnov test results. Running the regression models with this revised data set did not effect the conclusions drawn, although it did improve the fit of the models.

6.1.3.4 Mixed factor structures

Hair advised that when using a mixed sample where there is an expected difference in the responses from different respondents, such as male and female respondents, the factor analysis should be applied to the separate groups to examine the differences (Hair, Anderson et al. (1998)). There are three issues to consider on this point. Firstly, Hair's advice relates to when different loadings of the factors are expected and in the current research great care was taken in adapting the instruments for use in the public sector so no such difference was expected.

Secondly, running the exploratory factor analysis on a split public sector/ private sector gave different factors, particularly on lower loading items. This may have been an impact of different factor structures, but by splitting the sample the sample size was decreased and this in itself would have had an effect on the results (Hair, Anderson et al. (1998)). Thirdly, the factor analysis was being conducted to look at the structure of the data, and not to simplify the data (Hair, Anderson et al. (1998)). In the final analysis the decision was taken to develop the factors on the total sample, but it is accepted that this may have had an impact on results.

There was an intention to use confirmatory factor analysis using SEM to test the factor structures (Hoyle (1995)), but given the difficulties in running the structural equation models, especially on small samples, this proved not to be possible.

6.1.3.5 Muticollinearity between variables in multivariate regression models

The research called for the testing of the moderating effect of several metric variables, including organization size and Environmental Dynamics. Under ideal circumstances when testing for moderating variables, there will be no correlation between the interaction variable and the predictor variables (Baron and Kenny (1986)), but this was not found to be the case in the current research. As a consequence, although the interaction variable was statistically significant, the presence of a moderating variable could not be confirmed due to the high multicollinearity.

6.1.3.6 Reliance on Leadership Excellence to operationalize Business Excellence

A limitation was the assumption that the Leadership Excellence instrument was an accurate operationalization of the Business Excellence construct. Although comparisons

were drawn between high Leadership Excellence scores and high levels of Business Excellence (Dess, Lumpkin et al. (1997); Kanji and Sá (2001a); Kanji (2002)), it is recognized that these comparisons were limited to Portuguese organizations. In addition, more recent research has suggested that Business Excellence cannot be treated as a single construct but must be considered as a system (Reed, Lemak et al. (2000); Sun (2000)).

6.1.3.7 Generalizability

Previous studies that have based their sample on award winners or membership lists have been subject to bias, which, in turn, has had an impact on generalizability (e.g., GAO (1991); ECforBE (1999); Bauer (2002); Su, Li et al. (2003)). This study tried to avoid this problem by working from industry contact lists and by using a partially disguised questionnaire (Churchill and Iacobucci (2002)). In addition, a selection of different industries was chosen from which to draw the sample. Despite these efforts the variation in response rate from the various sources caused concern and, although a source code was used to test for non-response bias and no such bias was detected, there may have been a risk to generalizability caused through the sample.

6.1.3.8 Measurement issues

Instrumentation was a potential problem with the Environmental Dynamics construct and the society stakeholder performance scale. In making this statement it is assumed that the underlying theory was correct and the lack of a relationship was due to construct validity. Churchill and Iacobucci (2002) noted that content validity may be threatened when either the items reflecting any of the hypothesized domains are omitted, the aggregate score disproportionately reflects one domain over another; or the instrument is difficult to follow for respondents. Given the use of the experts and focus groups to develop the scales, content validity should not have been a concern. On reflection, the use of multi-trait multi-method matrix may have improved the instrumentation (Churchill (1979)).

Due to the problems associated with measuring highly dynamic environments, the research was unable to test the hypothesis related to the effect of such environments conclusively. This may have been due to measurement issues, but it might have also been due to sampling. If no, or only a few, organizations in the sample were operating in hyper competitive conditions the detection of an effect would have been difficult. In effect, a type 2 error would have occurred (Saunders, Lewis et al. (2003)). That the environment did not have an effect on the relationships between Leadership Excellence and Performance, and Strategic Capability and Performance, should be treated with caution as it is at variance with theory and is counter-intuitive.

6.1.3.9 *Difficulty in estimating replacement periods*

A final limitation to note concerned the collection of the data on replacement periods.

During the questionnaire design it was noted that respondents struggled with Part 3, which related to the sources of organizational advantage. Despite simplification there was a high level of non-responses in this section of the questionnaire, and so the percentages were calculated based on a pair wise basis where the results were corrected by removing item non-responses. An analysis ignoring missing responses (treating the number of responses as a constant N=193) and a case wise approach where the case was removed from the sample did not have a major effect on the results. The consequences of the missing data in terms of generalizability was appreciated, however (Hair, Anderson et al. (1998)).

In discussing the results with Richard Hall, it was noted that Richard did not have a major problem with non-responses. His questionnaire provided more support to the respondent and requested that the respondent rated the source of advantage, which may also have helped. Richard did, however, find that respondents had a problem estimating the replacement period, as with the current study.

6.1.4 Future research

As with other research, the current study raises a number of questions that future research could address. Some of these address the issues raised in the limitations section.

6.1.4.1 *Searching for empirical evidence that Business Excellence generates sustainable organizational advantage*

Due to the design of the research, the questionnaire did not include a section to identify whether or not respondents perceived that the sustainable organizational advantages they identified were as a direct result of their leadership practices. Above it has been argued that Business Excellence might generate such advantages, but it would be valuable to collect empirical evidence to support this hypothesis.

6.1.4.2 *Widening the domain of the Business Excellence construct*

The current study used Leadership Excellence as a measure of Business Excellence. It would be valuable to repeat the research, only expanding the scope of the Business Excellence construct to include other factors, such as People and Process Management. It would also be valuable to measure Business Excellence in a more traditional way, such as through a self-assessment score (Longbottom (1998); EFQM (1999b); Bauer (2002); Porter and Tanner (2003)) or through the receipt of external recognition (e.g., Hendricks and Singhal (2001b); Przasnyski and Tai (2002); NIST (2002b)).

6.1.4.3 Examining the relationships between the stakeholder groups

Related to the structure of the Business Excellence models, more work could be conducted looking at the relationships between the various stakeholder performance areas. In the current research the use of canonical analysis was considered as a way of examining the relationships, but this was considered outside the scope of the current research. It should also be possible to use SEM to look at the potential causal paths. Several authors have provided evidence that such a relationship exists (Das, Handfield et al. (2000); Eskildsen and Nussler (2000); Oakland and Oakland (2001); Rahman (2001); Agus (2004); Michie and West (2004)).

6.1.4.4 Replication of the entire Leadership Excellence instrument

The Leadership Excellence instrument appears to be a valuable instrument but it is not without its problems. Further work could be conducted on the Leadership Excellence instrument and, in particular, the correlation of the instrument to levels of Business Excellence in different industries. It has also already been noted that the data collected did not factor as expected and so there is the potential to develop this instrument further. The original instrument was developed using a Partial Least Squares approach and this is known to be more tolerant than SEM.

6.1.4.5 Continued search for hyper competitive environments

The current research was unable to show that the dynamics of the industry had an effect on the relationship between Strategic Capability and Performance. Such an effect was predicted by Eisenhardt and Martin (2000) and so this aspect of the research could be repeated. The full effect of the business environment on the Business Excellence and Performance relationship also remains untested. Authors suggested that such an effect should be observable (Das, Handfield et al. (2000); Eisenhardt and Martin (2000); Fiol (2001); Leonard, McAdam et al. (2002); Dervitsiotis (2004); Jones (2004)).

6.1.4.6 Extension of industry segmentation

It would be interesting to extend the industry classifications beyond the simple Public/Private classification to see if the relationships are affected by different industries, for example, manufacturing and services. The Business Excellence literature (Terziovski and Samson (1999)) and resource-based view literature (Aaker (1989); Hall (1994)) indicated that this may be the case.

6.1.4.7 Longitudinal study to seek support for causal relationships

Many researchers have noted the limitations of cross-sectional research and have called for longitudinal studies to be conducted (Henderson and Mitchell (1997); Bowen and Wiersema (1999); Barney, Wright et al. (2001); Priem and Butler (2001); Leonard,

McAdam et al. (2002); Leonard and McAdam (2002b)). Repeating the research after a time period, for example 2-3 years, may lead to the collection of evidence to support the theory that an increase in Leadership Excellence leads to an increase in Performance.

6.1.4.8 Validation of dynamic capabilities classification framework

The information given in Table 5-7 demonstrates the wide range of views on the sources of dynamic capabilities. The classification framework may go some way to aiding the understanding in this area and it opens up a range of opportunities for further research. For example, it would be of interest to collect more detailed information through case studies in a number of organizations in order to expand the classification model to expand the framework to one such as Hall's or Kay's. A longitudinal study would also examine how the balance between the two dynamic capability categories has changed over time.

6.1.4.9 Further work on the Leadership and Performance relationship

The research has added to the debate regarding the relationship between Leadership and Organizational Performance. Clearly there is a need for more work in this area.

6.2 Practical aspects of the work

This section addresses the practical aspects of the work. Firstly, the implications for organizations are summarized, which reviews the outcomes of the research from a business perspective. This section includes a number of potential business publication opportunities that may be pursued now that the work has reached completion. Secondly, the role of the researcher in the work is discussed. It could be argued that the researcher had a vested interest in the outcomes of the work and it is important to reinforce that this was not the case. Being involved in the Business Excellence field did, however, have a number of advantages. Finally, the nature of the work is discussed using Eden and Huxham's framework, as cited by Joynt (2004).

6.2.1 Practical implications for organizations

In considering Business Excellence one is reminded of Christensen's visit to the doctor:

'The doctor writes out a prescription and says, "Take two of these three times a day, and call me next week". "But – I haven't told you what's wrong." came the reply, "How will I know it will help me?" "Why wouldn't it?" says the doctor, "It worked for my last two patients".'

Christensen and Raynor (2003: p67)

It is difficult to imagine Business Excellence as a form of '*snake oil*' that cures all troubles, but the overall conclusion from this research in a practical context is that Business Excellence '*Does what it says on the tin*', borrowing from a popular UK TV advertisement. It would appear that Business Excellence, as measured through the Leadership Excellence instrument, is a valuable intervention for all the sorts of organizations included in the sample: Various sizes, both public and private sector, whether implemented by an entire organization or just a business unit. This was not expected at the start of the research, but it will be a welcome conclusion for the Business Excellence industry.

The research also suggests to organizations why Business Excellence is of value. Implementing Business Excellence enables an organization to reconfigure its resources more easily under the changing condition, a situation that most, if not all, organizations face. The only caveat with this conclusion is that it is suspected that the environmental effect was not detected due to the instrumentation used or sample chosen. It is still suspected that the environment will have an effect on the relationship between Business Excellence and Performance, supporting the view of Dervitsiotis (2004)

This ability to reconfigure resources is based on the affect Business Excellence has on the social systems within the organization, as well as introducing alternative approaches that are both effective and efficient. There is a wealth of literature from practioners that supports this conclusion, including the work of Deming, Juran, Crosby, Oakland, as well as from the award bodies such as EFQM and NIST.

So why are the findings important for organizations? Firstly, mention has already been made of the money that is being invested in implementing Business Excellence throughout the world (e.g., PriceWaterhouseCoopers (2000)). The fact that Business Excellence repays the investment and that it takes around 2 to 3 years to develop the capability are key messages from the research. Organizations need to understand that Business Excellence will not bring overnight success, but what it will do is increase capability over time.

Secondly, in reflecting on the major challenges facing managers in the 21st century, Prahalad (2000) argued that managing change in fast-moving environments would be a major challenge. The framework developed will not only increase our theoretical understanding of dynamic capabilities, it will be of practical benefit to organizations seeking to invest in developing such capability. The framework suggests that organizations must invest in both their hard and soft systems if they are to manage such change.

Another area of practical contribution relates to the value of people as an asset. In the UK the Government has, as part of their Modernizing Government agenda, taken it upon themselves to demand a reduction in headcount following various reviews such as the Gresham Spending Review, the Lyons 'Well Placed to Deliver' independent review of Public sector Relocation and the O'Donnell report, 'Financing Britain's Future - A review of the Revenue Departments'. Given that people were found to be the greatest source of organizational advantage, this research provides the insight that such programmes could have a negative effect on the level of public service provided. In fact, as this thesis was being written, the troubles of British Airways were being reported in the press where a lack of experienced staff was leading to a number of cancelled flights, and as a consequence British Airways' reputation, a market asset, was being damaged.

One further practical implication centres on the support for the Leadership and Performance relationship. A report by the Council for Excellence in Management and Leadership report (CEML (2002)) raised the issue over the quality of leadership in the UK. This led to the UK Government pledging to address the national leadership and leadership deficit through a range of initiatives to increase demand and improve supply of management and leadership development (DfES (2002)). Given the observation by Burgoyne regarding the availability of empirical evidence to support a Leadership and Performance relationship (Burgoyne, Hirsh et al. (2004)), the current work has important practical implications.

6.2.2 Role of the researcher

As mentioned in the introduction, my interest in the subject stems from my involvement in the quality field for the last 25 years. A positivist approach was chosen due to its more common use in the Business Excellence field and to the nature of the research question, which was to seek support for particular relationships. But, as noted by Weber (2004), the difference between a positivist and interpretive approach comes down to a choice of research method as opposed to a difference in metatheoretical assumptions.

Weber (2004) also noted that with an interpretive approach, the researcher must be aware of any bias and, as this research contained some interpretive elements involving focus groups, it is relevant to declare these biases. Acting as an assessor for both the European and UK Quality Awards, I have observed many organizations that thought they were 'world-class' but their results and approaches indicated otherwise. Based on my experience I have also helped three organizations win awards by advising them on 'how to play the game'. I therefore went into this research with a preconception that a model that had been socially constructed mainly by large private sector organizations would not

be generalizable to other organizations such as the public sector and SMEs, but that view has now changed.

I also held the view that, under conditions of dramatic change, Business Excellence would not be the answer to an organization's problems. This view was informed by my observation that many organizations abandon their quality approach when times get tough. This view is supported by the literature (MacLeod and Baxter (2001); Dervitsiotis (2004)). Although the current research has not provided evidence to support this view, it remains a view that I hold and it is supported by the dynamic capabilities literature (e.g., Eisenhardt and Martin (2000)). What has come out of this research is that Business Excellence inoculates organizations from the effects of environmental change, which provides an insight into how Business Excellence may be effective by embedding a quality ideology.

My level of activity in the quality networks has helped me with the research, as it allowed me to use snowballing as a way to collect my sample (Moser and Kalton (1971)). It was notable that the response rate from the networks was much higher than the 'cold-calling' approach when an unsolicited letter was used to gain a response. This may have introduced some bias and so, as mentioned under limitations, a test of means was conducted to see if the source of the response led to means that were statistically significantly different. This analysis was complicated by the fact that many of the other categories, such as public Vs private and level of leadership, were having an effect. But an ANOVA test and LSD post-hoc analysis showed that only responses from the Local Council Municipal Yearbook list for the Environment Dynamics variate, and the OneSource Industry leads on the Strategic Capability variate, were significantly different at the 0.05 level. It was, therefore, concluded that the source of the response was not a major concern.

The quality networks introduced an interesting insight as the work drew to a close. The European Foundation for Quality management has been reviewing the fundamental concepts of Excellence and are proposing the introduction of an eleventh fundamental concept, 'Responding with agility' (Goasdoé (2005)). Such a fundamental concept reflects the main theme of this thesis.

Being actively involved in the quality networks has other advantages. Already the early results from the work have been shared at quality conferences and in magazine articles (Tanner (2004d); Tanner (2004e); Tanner and Oakland (2004f); Tanner and Oakland

(2004g)). Now that the research has been completed dissemination of the results in layperson's language will be continued to share the findings with practitioners.

6.2.3 Management by research results

The Henley DBA programme commenced in 1992 and since then there have been over 100 DBA graduates. In 1995 the International Centre for Management and Technology (ICMOT) was formed, with a primary mission of Management by Research Results (MBRR) and since that time they have been actively supporting the Henley DBA programme. In considering past research from an action research perspective, Joynt (2004) analyzed eight abstracts using Eden and Huxham's framework (Eden and Huxham (1996)), considering the issues of generalizability and validity. Table 6-2 builds on this analysis by considering the current work in the light of Joynt's reflections.

It is recognized that one cannot classify the current work as action research, as no intervention has been applied to a single organization or organizations (Denscombe (1998)). Yet a key objective of the work was to provide insights that would be of value to organizations through an intervention. The analysis shown in Table 6-2 indicates that the current work meets the requirements of Eden and Huxham's framework in many respects, supporting the conclusions of Joynt.

Table 6-2: Comparison of current work with Eden and Huxham's framework

Action Research Characteristic	Reflection
Action research demands an integral involvement by the researcher in an intent to change the organization. This intent may not succeed - no change may take place as a result of the intervention - and the change may not be as intended.	The intent to change the organization related to the adoption of Business Excellence as a way to improve organizational performance. The conclusion is that such an intervention is likely to lead to benefits for an organization.
Action research must have some implications beyond those required for action or generation of knowledge in the domain of the project. It must be possible to envisage talking about the theories developed in relation to other situations. Thus, it must be clear that the results could inform other contexts, at least in the sense of suggesting areas for consideration.	As concluded by Joynt, this is a strong characteristic of the work.
As well as being usable in everyday life, action research demands valuing theory, with theory elaboration and development as an explicit concern of the research process. This is one of the essential ingredients in DBA work.	As concluded by Joynt, this is a strong characteristic of the work.
If the generality drawn out of the action research is to be expressed through the design of tools, techniques, models and method, then this, alone, is not enough; the basis for their design must be explicit and shown to be related to the theories which inform the design and which, in turn, are supported or developed through action research.	Although the EFQM Excellence Model [®] was at the centre of the research, the research made use of a number of other models and methods. A particular strength was that these models were tested in the real world.
Action research will be concerned with a system of emergent theory, in which the theory develops from a synthesis of that which emerges from the use in practice of the body of theory which informed the intervention and research intent.	The emergent theory in the current theory in the current work is that of both Business Excellence and dynamic capabilities. The results of this research contribute to both bodies of knowledge.

Action Research Characteristic	Reflection
Theory building, as a result of action research, will be incremental, moving through a cycle of developing theory-to-reflection-to-developing theory from the particular to the general in small steps.	As concluded by Joynt, this is a characteristic of the work, with the research adding its 'grain of sand'.
What is important for action research is not a (false) dichotomy between prescription and description, but a recognition that description will be prescription, even if implicitly so. Thus, presenters of action research should be clear about what they expect the consumer to take from it and present it with a form and style appropriate to this aim.	The current work embraces negative hypothesis testing in the main. This was a similar conclusion drawn by Joynt.
For good quality action research, a high degree of systematic method and orderliness is required in reflecting about, and holding on to, the research data and the emergent theoretical outcomes of each episode or cycle of involvement in the organization.	As concluded by Joynt, this is a strong characteristic of the work.
For action research, the processes of exploration of the data - rather than collection of the data - in the detecting of emergent theories and development of existing theories, must either be replicable or, at least, capable of being explained to others.	The current work replicates, in part, the work of other researchers.
Adhering to the nine characteristics above is a necessary, but not sufficient, condition for the validity of action research.	By utilizing instruments that have been developed from theory and applied in other contexts, the claim of validity rests on firmer ground.
The full process of action research involves a series of interconnected cycles, where writing about research outcomes at the latter stages of an action research project is an important aspect of theory exploration and development, combining the processes of explicating pre-understanding and methodical reflection to explore and develop theory formally.	The current work will continue beyond the completion of the DBA. This will include pursuing a publication plan (see above) as well as extending the research to other areas, using the suggestion for future research noted above.

Action Research Characteristic	Reflection
It is difficult to justify the use of action research when the same aims can be satisfied using approaches (such as controlled experimentation or surveys) that can demonstrate the link between data and outcomes more transparently. Thus, in action research, the reflection and data collection process - and hence the emergent theories - are most valuably focused on the aspects that cannot be captured by other approaches.	The analysis in this table does suggest that similar aims may be satisfied using methods other than action research.
In action research, the opportunities for triangulation that do not offer themselves with other methods should be exploited fully and reported. They should be used as a dialectical device which powerfully facilitates the incremental development of theory.	Although perhaps not as strong in this area as the other thesis reviewed by Joynt, the current work does include a triangulation aspect through the use of focus groups.
The history and context for the intervention must be taken as critical to the interpretation of the likely range of validity and applicability of the results of action research.	The context of the intervention was taken into account in the current work by capturing sector type, organization size and whether the respondent was from a whole organization or business unit. The history of the intervention was not, however, considered such as with the event benefit studies (e.g., Hendricks and Singhal (2001a))
Action research requires that the theory development which is of general value is disseminated in such a way as to be of interest to an audience wider than those integrally involved with the action and/or with the research.	Some early outcomes from the study have already been disseminated. There are plans to submit a number of business and academic papers as a result of the work.

Based on Joynt (2004)

6.3 The learning process

One of the features of the DBA over a Ph.D. was the focus on learning in Stage One. The Competency Development Plan (CDP) and associated final report provided the opportunity to consider learning theory and this is an appropriate point at the end of the programme to reflect briefly on this aspect of the DBA.

The personal diagnostic assessment conducted during the Advanced Management Programme week in September 01, based on the Kolb Learning Style Inventory, resulted in my learning style being defined as a converger. One would expect a converger to find practical uses for ideas and to focus on specific problems using hypothetical-deductive reasoning. They would expect to be generally unemotional, preferring to deal with things rather than people. There is no doubt that during the DBA programme I have sought to solve practical problems in order to progress forward. Looking back at the decisions made, there is no doubt that this learning style has some drawbacks and extra reflection and more time on theory may have produced a slightly different result. The section on the limitations of the research is where some of the compromises made may be found.

One learning theory that has been reinforced by the DBA experience is that of 'Double-loop' learning (Argyris (1991)). Related to the point above on limitations, there is no doubt future research studies will take into account the learning gained in this study and many of the lessons have already been put into practice. Good examples of this are the need to reach an early definition for the focus of the research so that the project may progress, and the recognition that the research will evolve over time.

A final point relates to the difference between scientific research and social science research. Having the privilege of experiencing both types of research, it is clear that the fundamental principles are very similar: Know the literature, use good methodologies and make a contribution. It is interesting that it is also easier to make a contribution in a science field that has not been extensively researched, but the drawback is that such research is technically more difficult. For example, in my science lifetime I worked on an enzyme that was readily available but everything you could think of had been done to it, whereas a colleague worked on an enzyme that had been subjected to very little experimentation as it was so difficult to isolate. In the current research the decision to include the public sector in the scope of the research meant that the challenge of making a contribution was reduced, but this introduced the complexity of having to modify the instruments. So the conclusion is that science research and social science research are, in many ways, very similar, but they do vary in the way that concrete evidence is obtained. Science research has the benefit of the '*Water on Mars*' paradigm, whereas

social science sits in the more inferential '*Only the dog knows for sure*' paradigm (Tanner (2004c)).

6.4 Final words

So, finally the end of the journey has been reached. There is no doubt that the DBA programme has been of immense value from a technical skills transfer and building personal esteem perspective. But one feels that one has just passed the driving test and now is the time to learn to drive for real.

In completing this research I feel that I have made a contribution to the body of knowledge in my area of interest. I have added my 'grain of sand'. I also hope that my experiences may be shared with others as they follow me in this life-changing experience.

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8 Appendix 1: Abbreviations

Abbreviation	Definition
AMOS	Analysis of Moment Structures
ASQ	American Society for Quality
BQF	British Quality Foundation
CDP	Competency Development Plan
CPA	Comprehensive Performance Assessment ratings
CSF	Critical Success Factor (in relationship to the successful implementation of Business Excellence)
CSR	Corporate and Social Responsibility
EFQM	European Foundation for Quality Management
ESOE	European Society for Organizational Excellence
EFA	Exploratory Factor Analysis
IT	Information Technology
ICMOT	International Centre for Management of Technology
LUBS	Leeds University Business School
MBNQA	Malcolm Baldrige National Quality Award
MBRR	Management by Research Results
MCAR	Missing Completely at Random
MLQ	Multifactor Leadership Questionnaire
MSA	Measure of Sampling Adequacy
NIST	American National Institute of Standards and Technology
PBV	Practice-based View of the Firm
PLS	Partial Least Squares
RBV	Resource-based View of the Firm
SCA	Sustainable Competitive Advantage
SEM	Structured Equation Modeling
SIF	Strategic Industry Factors
SOA	Sustained Organizational Advantage
SHRM	Strategic Human Resource Management
SME	Small-Medium Enterprise
SPSS	Software Package for the Social Sciences
TQM	Total Quality Management
WHU	West Ham United

9 Appendix 2: Original instruments from the literature

9.1 Appendix 2.1: Competitive environment/turbulence instrument

Robustness can be defined as an organization's ability to adopt to new challenges in the business environment (threats and opportunities) without being forced to change strategy or structure. Assess your company's robustness to changes in the competitive landscape compared to other companies in the same market and at a similar stage of development.

1. Business concept
2. Long-term goals
3. Financial strategy
4. Market strategy
5. Supplier strategy
6. R & D strategy
7. Human resource strategy
8. Organizational structure
9. Financial platform
10. Product/ service portfolio
11. Competence/ knowledge base

Assess in a similar way your company's ability to give quick and adequate responses to changes in the environment (legislative, technological, competitive, customer demands etc).

1. Sense potential threats (legislative, technological, competitive, customer demands etc.)
2. Conceptualise a response and make decisions and plans to meet threats
3. Reconfigure resources and implement necessary changes to meet threats

1. Sense new business or technological opportunities
2. Conceptualise a response and make decisions and plans to exploit opportunities
3. Reconfigure resources and implement necessary changes to exploit opportunities

Adapted from Lindgren (2001)

9.2 Appendix 2.2: Kanji's Leadership Excellence instrument

Factor	Statements
Organizational values	<ul style="list-style-type: none"> • Leaders develop shared meanings and interpretations of reality • Leaders use the organizational principles to guide decision-making • Leaders put in place reinforcement systems that are consistent with organizational values and principles
Vision	<ul style="list-style-type: none"> • Leaders create a compelling vision of the future of the organization • Leaders communicate the vision effectively • Leaders inspire confidence in the vision
Mission	<ul style="list-style-type: none"> • Leaders identify the organization's purpose • Leaders generate commitment among organizational members for the chosen purpose
Strategy	<ul style="list-style-type: none"> • Leaders develop policies and strategies consistent with the organization's mission, vision and values • Leaders anticipate and guide change • Leaders monitor resources and organizational performance and use feedback to review strategies for customer satisfaction
Key issues	<ul style="list-style-type: none"> • Leaders align the organization's structure to support delivery of its policy and strategy • Leaders give subordinates authority to act and make decisions • Leaders communicate and build supportive relationships with peers and subordinates in order to motivate people
Leadership excellence	<ul style="list-style-type: none"> • Leaders are accessible, actively listen and respond to people • Leaders promote discussion, feedback and involvement • Leaders identify best practices in leadership

Adapted from Kanji (2002)

9.3 Appendix 2.3: List of assets and capabilities

Assets	Capabilities
<ol style="list-style-type: none"> 1. Public knowledge 2. Structure 3. Customer focus 4. Employee know-how 5. Staff skills and competences 6. Networks 7. Specialist physical resource 8. Databases 9. Supplier know-how 10. Distributor know-how 11. Intellectual property rights 12. Trade secrets 13. Finance 14. Reputation 15. Product reputation 16. Contracts/ installed customer base 	<ol style="list-style-type: none"> 1. Culture 2. Leadership 3. Processes and systems 4. Co-ordination and co-operation 5. Learning 6. Capture customer information 7. Customer service/ product support 8. Low cost production 9. Speed and flexibility in the design of new products or services 10. Continuous improvement

9.4 Appendix 2.4: Strategic response capability instrument

Robustness can be defined as an organization's ability to adopt to new challenges in the business environment (threats and opportunities) without being forced to change strategy or structure. Assess your company's robustness to changes in the competitive landscape compared to other companies in the same market and at a similar stage of development.

1. Business concept
2. Long-term goals
3. Financial strategy
4. Market strategy
5. Supplier strategy
6. R & D strategy
7. Human resource strategy
8. Organizational structure
9. Financial platform
10. Product/ service portfolio
11. Competence/ knowledge base

Assess in a similar way your company's ability to give quick and adequate responses to changes in the environment (legislative, technological, competitive, customer demands etc).

1. Sense potential threats (legislative, technological, competitive, customer demands etc.)
2. Conceptualise a response and make decisions and plans to meet threats
3. Reconfigure resources and implement necessary changes to meet threats
4. Sense new business or technological opportunities
5. Conceptualise a response and make decisions and plans to exploit opportunities
6. Reconfigure resources and implement necessary changes to exploit opportunities

Adapted from Lindgren (2001)

9.5 Appendix 2.5: The performance scale

Factor	Statements
Performance (Hart and Banbury (1994))	
Current profit	<ul style="list-style-type: none"> • Has high profitability/ return on assets • Has a positive cash flow
Growth/ share	<ul style="list-style-type: none"> • Has a positive sales growth/ increased funding • Has an increasing market share/ share of budget
Future position	<ul style="list-style-type: none"> • Will seek to diversify in the marketplace • Will change its existing products and services • Will introduce new products and services next year • Will have an active product and services development programme
Quality	<ul style="list-style-type: none"> • Good overall organization performance • High employee satisfaction • High standard of quality in products and services
Social responsiveness	<ul style="list-style-type: none"> • Is environmentally responsible • Has an active involvement in the local community
Business Excellence (Kanji (2002))	
N/A	<ul style="list-style-type: none"> • Has strong financial performance • Has high customer demand • Achieves its goals • Has performed recruitment and admission of employees effectively • Has achieved the desired product and services outcomes • Has performed recruitment of outstanding staff • Has the ability to retain outstanding staff

Factor	Statements
Quality management results (Claver, Tari et al. (2003))	
Customer satisfaction	<ul style="list-style-type: none"> • This organization is not concerned about collecting information from its customers in order to measure their satisfaction (*) • Customer satisfaction has historically shown improvements • This organization has implemented a process to listen to and solve customer complaints
Employee satisfaction	<ul style="list-style-type: none"> • This organization collects relevant information from employees to measure their satisfaction • Employee satisfaction has historically improved. • Absenteeism is high (*) • Employee rotation is low.
Social impact	<ul style="list-style-type: none"> • Policies are developed to reduce and prevent health and safety risks • Policies are developed to protect the environment • This organization is not much actively involved in the community*
TQM performance	<ul style="list-style-type: none"> • Our financial results have been excellent • Our quality programme has increased our revenue • Our quality programme has increased our yield • Our quality programme has improved our competitive position • Our quality programme has improved our performance in general • Our quality programme has had a negative impact upon our profitability • We could have done better (i.e. obtained better financial results) without a quality programme

Note: (*) represented reverse coded item

Adapted from Hart and Banbury (1994); Kanji (2002); Claver, Tari et al. (2003)

10 Appendix 3: Feedback on draft questionnaire

10.1 Appendix 3.1: Practitioners' focus group feedback summary

- Part 1
 - Sequencing of questions (parts a and b) caused confusion
- Part 2
 - No major issues
- Part 3
 - Respondents struggled with the time lengths but most completed the section
 - Respondents could readily list the top strengths and weaknesses but question may have wrong emphasis (did not lead to strategic responses)
 - Asking the public sector respondents if they are 'ahead' is a problem
- Part 4
 - Some comments on terminology, e.g., what is Sustainability?
- Part 5 (Leadership)
 - Issues relating to confidentiality raised

10.2 Appendix 3.2: Private and public sector focus group feedback summary

Feedback from Private sector group

- Some wording suggestions on introduction
- Time taken to complete 20-30 minutes
- Length of questionnaire would be a concern for CEOs – suggested pre-contact to get buy-in or face to face conversation
- Concern over dependence on CEO awareness – suggest send questionnaire to other directors as well as CEO
- Multiple issues in questions (were in original scales or where have adapted for public sector)
- Need for ‘Not applicable’ or instruction to leave blank
- Part 3 was difficult to complete (most people did not do it)
- Some questions were loaded particularly around the staff satisfaction issues. Also enabler/ results mix
- Concern raised on confidentiality
- Suggest make it a web-based survey with a better layout (less wordy)
- Issue raised about a 7-point scale (prefer 6-point scale)
- Suggestion to get the self-completed part pre-completed

Feedback from Public sector group

- Do not like multiple questions in one question
- Time taken to complete 20-30 mins
- Many concepts require definition, e.g., customer, vulnerable and business
- Suggest use 2 separate questionnaires
- Need a box for ‘not relevant’
- Need to define meaning of middle box (Neutral, not sure, etc.)
- Inconsistency depending on person completing (CEO or below)
- Some sections do not have numbered questions
- Confusion on branch on part 1
- Question 1.6 ambiguous
- Reword ‘Human Resources’ in part 2. Also separate questions into current position and future plans
- Question 2.2 relevance of ‘new business opportunities’ to public sector and meaning of ‘sense’ (passive or active)
- In Part 3 are the similar organisations obvious. Also are you asking for 2-3 in total or 2-3 per question. Also should the As and Cs be in priority order?
- Question value of answers ‘time to replace’
- Part 4 – what is the comparison against?

11 Appendix 4: The final questionnaire

12 Appendix 5: Analysis of outliers by item

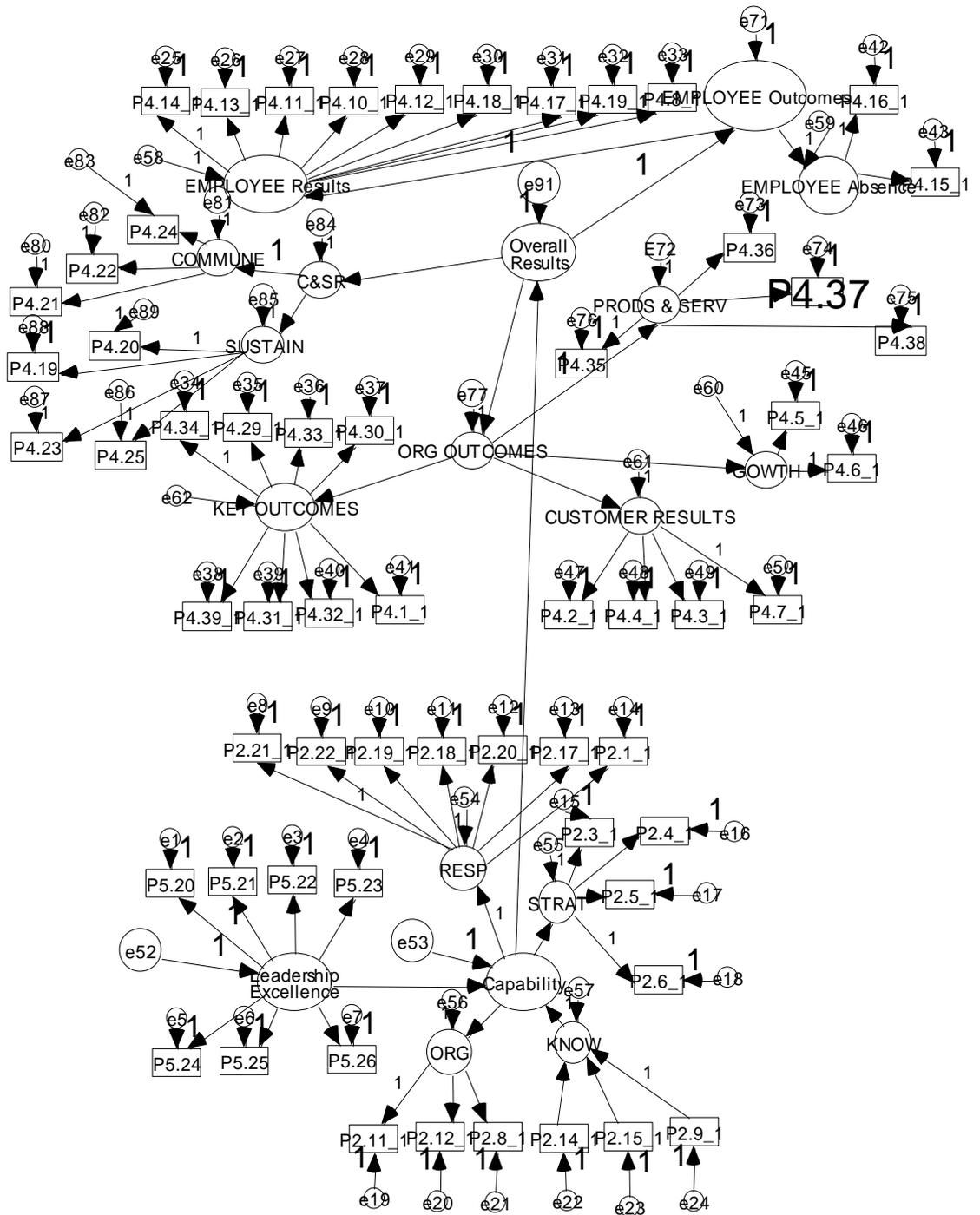
Part	Item	Item Description	# Outliers	Potential Cause
One - Environment	1.3	There are many unforeseen threats that we have to cope with.	1	Not examined
Two - Capability	2.3	Business concept/ Raison d'être.	19	Not due to public / private Not due to Whole organization/ business unit Not due to level of leadership
Four - Performance	4.1	Has a high customer demand/ Has a high demand for its services.	8	Mainly private – only 1 public Mainly whole – 1 business unit Not due to level of leadership
	4.4	Has implemented a process to listen to and solve customer complaints.	26	Not due to public / private Not due to Whole organization/ business unit Not due to level of leadership
	4.7	Has a high standard of quality in service and/ or products.	17	Not due to public / private Mainly whole – 1 business unit Not due to level of leadership
	4.19	Develops policies to reduce and prevent health and safety risks.	9	Not due to public / private Mainly whole – 1 business unit Not due to level of leadership

Part	Item	Item Description	# Outliers	Potential Cause of Outlier
Five – Leadership excellence	5.7	Leaders identify the organization’s purpose.	20	Not due to public / private Not due to Whole organization/ business unit Not due to level of leadership
	5.10	Leaders develop policies and strategies consistent with the organization’s mission, vision and values.	21	Not due to public / private Not due to Whole organization/ business unit No ‘ <i>Most senior executive</i> ’
	5.11	Leaders anticipate change.	24	Not due to public / private Not due to Whole organization/ business unit No ‘ <i>Most senior executive</i> ’
	5.15	Leaders monitor resources and use feedback to review strategies for customer satisfaction.	24	Not due to public / private All due to Whole organization Not due to level of leadership
	5.20	Leaders are accessible.	21	Not due to public / private Mainly Whole organization – just 2 business unit No ‘ <i>Most senior executive</i> ’

13 Appendix 6: Cluster analysis of variates by category

Category	Percent Cluster 1		Percent Cluster 1		
	<u>Private</u>	<u>Public</u>	<u>Private</u>	<u>Public</u>	
Private Vs Public	82%	75%	18%	25%	
Whole Vs Business Unit	<u>Whole</u>	<u>Business Unit</u>	<u>Whole</u>	<u>Business Unit</u>	
	79%	77%	21%	23%	
Leadership Level	<u>Level</u>	<u>% Cluster 1</u>	<u>% Cluster 1</u>	<u>% Cluster 1</u>	<u>% Cluster 1</u>
	Most Senior (N=59)	42%	14%	32%	12%
	Senior (N=101)	29%	22%	32%	18%
	Middle (N=25)	28%	36%	12%	24%
	Other (N=8)	25%	50%	0%	2%

14 Appendix 7: Initial SEM model



15 Appendix 8: Feedback from focus groups on interpretation

Public sector conference

Group Membership and Context
<p>Presentation of a paper '<i>Does Excellence work in the public sector?</i>' at the BQF Public Sector Conference in Kendal, 8 June 2004.</p> <p>35 participants from both public and private sector organizations including leaders at senior level and middle managers.</p> <p>Focus of discussion on the interpretation of the results in relation to public sector and in particular the benefits of Business Excellence and the link between Capability and Performance.</p> <p>Presentation was also published in a paper in the BQF journal 'UK Excellence'.</p>
Main Comments on Interpretation
<ul style="list-style-type: none">• Interpretation was well accepted. In particular the parallel was drawn between the results of this research and the concept of 'Change Agile', which was derived through a qualitative approach based on observations in several industries.• One question was raised about the Employee Results, the view being that Leaders may have a biased view on employee performance. The fact that leadership level was a categorical variable was considered to be a necessary test.• Some surprise was expressed at the lack of a relationship between Leadership Excellence and Society Results. The general view was that a positive relationship was expected, especially in the public sector.• Feedback from published paper provided support for findings.

Police focus group

Group Membership and Context
<p>Presentation to 16 middle managers who held both serving police roles and civilian support roles on 22 June 2004.</p> <p>Focus was the interpretation of the results with respect the to Police and the link between Capability and Performance. The sources of competitive advantage were also discussed.</p>
Main Comments on Interpretation
<ul style="list-style-type: none">• General agreement that the Police have poor leadership and also are ineffective at reacting to change due mainly to the culture, as the required tools and skills are in place. This validated the leadership performance link and the leadership capability link. This view was supported by a Chief Constable, who made the link between this research and his decision to introduce an 'Action Leadership' programme to improve his force's ability to react to change.• Employees were acknowledged to be a leading source of organizational advantage in the Police.• The time to develop the culture was thought to be shorter than perceived. It was a general view that the Police culture had developed over the last 100 years and would therefore take considerable time to replace.

Academic conference

Group Membership and Context
<p>Presentation of the paper '<i>The Impact of Business Excellence on Public and Private Sector Performance</i>' at the 7th Toulon-Verona conference in Toulon, France on 2 September 03. Presentation of methodology, stakeholder results, linkage between Business Excellence, Capability and Performance, and sources of competitive advantage.</p> <p>Attended by approximately 20 academics/ doctoral students from around the world.</p>
Main Comments on Interpretation
<ul style="list-style-type: none">• Findings that Business Excellence as measured through Leadership Excellence thought to be a valuable contribution. The linkage between Leadership, Capability and Performance was considered to be an insight that no one else had recognized before.• Some discussion on sources of advantage results. Comment made about the difference between Staff Skills and Competences and Staff Know-how, as they were considered to be similar terms.• Question about the political stakeholders in public sectors and whether this should have been included as a separate stakeholder area. This was felt to be particularly important in a European context.• Agreement on the observation that the operationalization of constructs for use in the public service was under-developed. The questionnaire used in the study was noted to be a contribution in itself and of a higher standard than other research presented at the conference.

Academic focus group

Group Membership and Context
Wisconsin focus group held at Muscoda, USA on 25 September 04. Theme Group attended by three professors and three research associates
Main Comments on Interpretation
<ul style="list-style-type: none">• The question was raised as to whether data should be collected after a period of time to allow a longitudinal study. This would support the evidence of causality in the model, particularly with hypothesis 5.• In the sources of organizational advantage the difference between 'Employee know-how' and 'Staff skills and Competences' was questioned.• The result that the society results did not have a strong relationship in the models was raised. It was suggested that this may be due to the long-term/ short-term conflict, which is especially the case with these results, as investing in society is a longer-term action.• Industry effects were also said to be of interest and the point was made that 'Industry' was not a particularly good label for the split between the public and private sectors.• A final comment was that it was felt that the work had made a contribution both in an academic and practical sense.

Private sector middle managers

Group Membership and Context
16 Middle managers from First Direct, a leading non-branch network bank that is part of HSBC. Session held on 25 October 04 as part of an alumni event.
Main Comments on Interpretation
<ul style="list-style-type: none">• First Direct competes on its customer service reputation and for this it charges a premium. It was felt that the reputation is delivered through two main mechanisms: the customer focus of its people and its IT systems. There was surprise that IT systems did not feature highly in the list of sources of organizational advantage as it was felt that this was a major feature of the offer and it was considered that their IT systems were difficult to replicate.• Alongside a very customer focused culture, which has been developed by the leaders, there is a strong continuous improvement culture. In fact, Continuous Improvement is one of the First Direct values. The culture allows them to react to external changes, which was a key conclusion of the current research. However, there was a perception that First Direct could not handle major changes in the environment, as the continuous improvement culture coupled with paternal care for its people proved to be resistive. This observation supports hypothesis 2b, which was that the dynamic capabilities would be disrupted under highly dynamic conditions. The focus group felt that although First Direct competed in a competitive market, it was not in a hypercompetitive industry.• One final observation was that the capability to change was embedded in the internal routines. First Direct does not have a mature approach to process management.

Finance academic focus group

Group Membership and Context
Accounting & Finance Research Colloquium held at Henley Management College on 6 November 04. Theme Group attended by 19 Henley research faculty and research associates
Main Comments on Interpretation
<ul style="list-style-type: none">• Some concern was raised regarding the dynamic capability aspects of the work and in particular the link to social capital. The opinion was expressed that this a very new area.• It was noted that other work looking at dynamic capabilities has been longitudinal in nature in that 'snapshots' of capabilities had been taken at two points in time to see how they had developed.• In response to a question to the audience, none of the researchers could provide a reference for a heuristic value for the coefficient of determination. The general view was that an R^2 of above 0.5 was good, but lower ones had been seen in the literature.• There was a debate about the linkage of the work to the observation of behaviours, which would place the work in the area of behavioural economics. This stemmed from a discussion on appropriation, where it was suggested that, in Business Excellence organizations, value is appropriated to the employees and customer at the expense of the organization/ shareholders.• The appropriation discussion led to a further discussion on the Business Excellence beliefs, which were possibly driving the behaviour. The view was expressed that hypotheses that relate to behaviour cannot be proven.• A suggestion was made that Robert Thorpe at LUBS may be a good person to talk to.• It was also suggested that there might be studies on public sector organizations within the Leadership literature.

Original authors

Authors	Main Comments on Interpretation
<p>Richard D'Aveni. Met Dick at Dynamic Capabilities Conference, Ostini, Italy held between 8 to 10 July 04</p>	<ul style="list-style-type: none"> • Hypercompetition is a very difficult state to measure and some argue that it does not exist. Most of the work has been conducted in the manufacturing sectors. It was not a surprise to Dick that an environmental effect could not be detected.
<p>Patricia Moura e Sá who I met at the PMA2004 Conference in Edinburgh, held between 28 to 30 July 04. Have also had an e-mail exchange of the results with Patricia.</p>	<ul style="list-style-type: none"> • The original Leadership Excellence instrument was only used in Portugal and for municipal organizations. The version I had based this research on had been translated from Portuguese into English and had not been used in this state. • Partial Least Squares (PLS) software had been used for the analysis as Patricia's supervisor sold the software and insisted that she used it. Patricia had since tried to use Amos to replicate her work, but had found Amos to be less forgiving. The result in this work that failed to replicate the other constructs in Patricia's model was not a surprise to Patricia, given her own experience with Amos.
<p>Richard Hall. Meeting 12 October 04 at Durham Business School.</p>	<ul style="list-style-type: none"> • The difference between the two papers Dick produced was that the first data came from a pilot in the North-East of England and the second data came from a full UK survey. • The categories used in Dick's surveys were 'invented'. A key source for the material was Itami's book. On reviewing the list in the current work, Dick felt that the current list was more comprehensive. He raised the question over the difference between Employee Know-how and Skills and competencies. In a discussion he also agreed that areas such as Employee Know-how, Customer Focus and Continuous Improvement were predictors of Reputation. • Dick had problems with respondents estimating Replacement Periods and in one example his thesis showed a range of 0 to 175 years. It was suggested that in assessing times it would have been useful to have framed the question in the context of close

	<p>competitors.</p> <ul style="list-style-type: none"> • Dick did not have a problem with non-respondents, but his questionnaire was more detailed and gave examples of the assets as opposed to just one-line statements. His questionnaire only sought to collect data on intangibles and so had a limited scope to the current research. • Examining Dick's detailed results showed that there was a good correlation between his original work and the current study. Even though the times did vary, the general pattern did not. It was also of interest that Dick segmented his data by industry type and found differences in responses between the industries. For example, Supplier Know-how was one of the top rated factors in diversifies industries. We agreed that in reality the order was not completely reliable; • Dick noted the importance of the Coyne paper, which he found by a chance meeting. He referred to the people/ people independent split and referred to a Mechanistic Vs Humanistic view of strategy. • The use of sustainable organizational advantage in the current work was questioned. I explained why it had been chosen and he was happy with the response. Dick noted that in his work the sources of sustainable advantage were easier to identify than the sustainability of competitive advantage. • Dick's work also included a quantitative phase where a number of case studies were produced to follow up on the findings from the survey. What was particularly noteworthy were the features defined under the source of competitive advantage, culture. These were: <ul style="list-style-type: none"> • Ability to manage change • Ability to innovate • Teamworking ability • Participative management style • Perception of high quality standards • Perception of high customer service
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