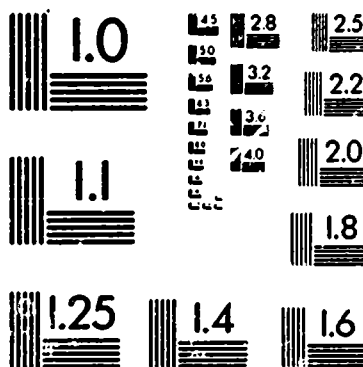


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Contents

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***JOB SUCCESS AS A FUNCTION OF PERSONAL COMPETENCIES,
COGNITION AND PERSONALITY VARIABLE***

By

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SUMMARY

The aim of this research is to develop a conceptual model consisting of factors which were associated with managerial success in a changing environment and to investigate its predictive validity. This "Successful Manager Profile" contains three domains, each consisting of a number of factors.

An assessment battery was devised to measure the three domains - cognitive abilities, personality variables and personal competencies - of the "Successful Manager Profile".

A sample of 287 employees was assessed during 1991 and 1992 using assessment centre technology, psychometric tests and questionnaires. Five years later (in 1996 and 1997), criterion data, which consisted of the final organisational level attained, were collected.

The research question - whether the variables contained in the "Successful Manager Profile" - was investigated using Stepwise Multiple Regression analysis. The coefficient of multiple determination reported ranged from $R^2 = 0.21$ for the total sample to $R^2 = 0.60$ for the male graduate group.

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LIST OF TABLES

2.1	Comparing management and leadership	11
2.2	The nature of modern management problems.....	17
2.3	Organisational unit performance dimensions	21
3.1	List of some predictors in use	41
3.2	Selection methods rank ordered.....	60
3.3	Generic middle management competencies.....	65
3.4	Frequency of use of simulation exercises in assessment centres ..	66
4.1	Summary of the Myers-Briggs four personality preferences.....	80
4.2	A description of desired personality characteristics for managers in the company.....	81
4.3	Core team-role characteristics associated with managerial success in the company.....	82
4.4	Competency profile for junior leading managers	83
5.1	Initial sample composition.....	89
5.2	Final sample composition	90
5.3	The four preferences of the MBTI.....	95
5.4	Reliability of the MBTI	96
5.5	Belbin's model of team roles	99
5.6	The MDE1 process	103
5.7	Criterion development – categorising grid.....	110
6.1	Biographical variables summarised by race and gender.....	118
6.2	Qualifications	119
6.3	<i>t</i> -Test results- Asian, black & coloured (ABC) cohort versus white (W) cohort.....	120
6.4	<i>t</i> -Test results – gender cohorts	121
6.5	Summary of the ANOVA and Scheffé <i>post-hoc</i> tests	123
6.6	Categorical data analysis results.....	124
6.7	Descriptive statistics: dependent variable.....	125
6.8	Descriptive statistics: cognitive variables.....	125
6.9	Descriptive statistics: personality variables	126

6.10	Descriptive statistics: personal competencies.....	127
6.11	Pearson product-moment correlations	128
6.12	Stepwise regression on the dependent variable acceleration index for the total sample.....	130
6.13	Stepwise regression on the dependent variable acceleration index for the male graduate sample.....	131
6.14	Stepwise regression on the dependent variable acceleration index for the male matriculant sample	131
6.15	Stepwise regression on the dependent variable acceleration index for the female matriculant sample	132
7.1	Correlation between cognitive ability measure variables	138
7.2	Pearson product-moment correlations between the MBTI index score and Belbin team roles.....	147
7.3	A summary of the generic model for predicting managerial success and specific variables included in the regression formula	162

LIST OF FIGURES

2.1	The relationship between organisation environment and structure.	15
2.2	Berry's Multilevel Arc Model.....	22
2.3	The Competency Causal Flow Model	27
2.4	Jaques's model of organisational hierarchy	29
2.5	Central and Surface Competencies	30
3.1	Simple theoretical model of predicting managerial effectiveness ...	40
3.2	Correlations between predictors and constructed and ultimate criterion.....	47
3.3	Relationships between predictors, criteria and theoretical constructs	52
3.4	Relationships between cognitive ability, job knowledge, job performance, and supervisor ratings	54
4.1	Generic model of variables associated with high performing managers.....	77
4.2	Organisation-specific model of variables associated with high performing managers.....	85
5.1	Management development evaluation exercises	105
5.2	Research design	110
5.3	Research procedure	111
7.1	Modified generic model of variables associated with managerial success.....	163

TABLE OF CONTENTS

TITLE.....	i
SUMMARY	ii
ACKNOWLEDGEMENTS.....	iii
LIST OF TABLES	iv
LIST OF FIGURES	vi

Chapter 1 INTRODUCTION

1 The banking sector.....	2
1.1 <i>The role of banks</i>	2
1.2 <i>Short history of banking in South Africa</i>	3
1.2.1 Early period: 1793 to mid-1960s	3
1.2.2 Strict regulation: 1965 to 1980	3
1.2.3 Deregulation in the 1980s	4
1.2.4 Globalisation in the 1990s.....	5
2 Organisational leadership requirements for the 1990s and beyond	6
3 The problem investigated: the identification of managerial ability	7

Chapter 2 MANAGERIAL ROLES AND WORK CONTEXT

1 Views on managerial roles	9
2 Managerial roles vs leadership roles.....	10

2.2.1	<i>Orientation towards goals</i>	12
2.2.2	<i>Orientation towards work</i>	12
2.2.3	<i>Orientation towards human relations</i>	13
2.2.4	<i>Orientation towards self</i>	13
3	Role requirements for managers in a changing environment	14
3.1	<i>The changing environment</i>	14
3.2	<i>Role requirements of managers</i>	16
3.2.1	<i>Change agent</i>	16
3.2.2	<i>Learning facilitator</i>	18
3.2.3	<i>Teamwork and cooperation: participative management</i>	19
3.2.4	<i>Exploiting organisational core competence</i>	19
3.2.5	<i>Ensuring organisational unit effectiveness</i>	20
4	Managerial success and organisational structure	21
5	Defining the managerial work context	23
5.1	<i>Job evaluation methods</i>	24
5.2	<i>The “competency” method</i>	26
5.3	<i>Organisational discontinuity and stratification - stratified systems theory</i>	28
5.4	<i>Integration of competency method and Stratified Systems Theory (SST)</i>	31
6	Job success factors	32
6.1	<i>Defining job success</i>	32
6.2	<i>Factors affecting job success</i>	33
6.2.1	<i>Familial factors</i>	33
6.2.2	<i>Socioeconomic factors</i>	33
6.2.3	<i>Gender</i>	34
6.2.4	<i>Individual factors</i>	34
6.2.5	<i>Other factors</i>	35
2.7	Summary and applications to this research	36

Chapter 3 ASSESSMENT TECHNIQUES THAT PREDICT MANAGERIAL JOB SUCCESS

1	Technical considerations relating to predicting behaviour.....	38
1.1	<i>Developing and employing theoretical models in predicting managerial success.....</i>	38
1.2	<i>Simple theoretical model for predicting managerial effectiveness.....</i>	40
1.3	<i>Characteristics of predictors.....</i>	41
1.3.1	Reliability	42
1.3.2	Validity	44
1.4	<i>The concept of the criterion.....</i>	47
1.4.1	Coverage of the criterion.....	47
1.4.2	Dimensionality of the criterion	48
1.4.3	Criterion development.....	49
1.4.4	Evaluating the criterion	51
1.4.5	Criteria of managerial success.....	51
2	Instruments for predicting managerial success	53
3.2.1	<i>Cognitive ability tests</i>	53
3.2.2	<i>Objective personality inventories.....</i>	55
3.2.3	<i>Interviews.....</i>	56
3.2.4	<i>Biographical information and the accomplishment record.....</i>	57
3.2.5	<i>Work sample tests and assessment centres.....</i>	58
3.2.5.1	Work samples tests	58
3.2.5.2	The Assessment Centre method.....	63
3.2.6	<i>Conclusion and application to this study</i>	70

Chapter 4 THE DEVELOPMENT OF A CONCEPTUAL MODEL FOR PREDICTING MANAGERIAL JOB SUCCESS

1	Organisational context	72
1.1	<i>Implications of managerial role requirements on people profiles</i>	72
1.2	<i>Evaluating the impact of the managerial role requirements</i>	

<i>on the person profile</i>	72
1.2.1 Change agent role	72
1.2.2 Learning facilitator role	73
1.2.3 Teamwork and cooperation role.....	74
1.2.4 Exploiting organisational core competence role	75
1.2.5 Ensuring organisational effectiveness role.....	75
1.3 <i>Developing a generic model containing variables associated</i> <i>with managerial job success</i>	76
2 Job analysis	78
2.1 <i>Required Cognitive abilities</i>	78
2.2 <i>Required personality characteristics</i>	79
2.2.1 Specific personality characteristics	79
4.2.2.2 Required team role profile.....	81
4.2.3 <i>Required competencies</i>	83
3 Summary.....	84
4 Organisation-specific model containing variables associated with high performing managers	84
4.1 <i>Model</i>	84
 Chapter 5 RESEARCH DESIGN	
1 The problem investigated	87
2 Setting.....	88
3 Sample.....	88
3.1 <i>Initial sample</i>	88
3.2 <i>Final sample</i>	89
4 Independent variables: measuring instruments	90
4.1 <i>Cognition</i>	90

4.1.1 Mental Alertness (MA) test.....	90
4.1.2 The Conceptual Reasoning Test (CRT).....	92
4.2 <i>Personality traits</i>	94
4.2.1 Myers-Briggs Type Indicator (MBTI)	94
4.2.3 Belbin Team-Role Profile	98
4.3 <i>Personal competencies</i>	101
4.3.1 The Management Development Evaluation 1 (MDE1)	102
5 Dependent variable	108
6 Research procedure.....	110
6.1 <i>Step 1: Literature review</i>	111
6.2 <i>Step 2: Role analysis</i>	112
6.3 <i>Step 3: Development of the “Successful Manager Profile”</i>	112
6.4 <i>Step 4: Selection of instruments</i>	112
6.5 <i>Step 5: Data Collection</i>	113
6.6 <i>Step 6: Construction of the criterion</i>	113
6.7 <i>Step 7: Statistical analysis</i>	113
6.8 <i>Step 8: Conclusion and discussion</i>	113
7 Hypotheses	113

Chapter 6 RESEARCH RESULTS

1 The sample	116
1.1 <i>Profile</i>	117
1.2 <i>Tests for differences in means between race, gender and educational cohorts</i>	119
1.2.1 Race.....	120
1.2.2 Gender	121
1.2.3 Qualifications	122
2 Overall investigation of Test, Questionnaire and Assessment Centre scores for the sample.....	125

2.1 Score distributions.....	125
2.2 Correlations.....	127
3 Testing the hypotheses.....	130

Chapter 7 SUMMARY, DISCUSSION OF RESULTS AND CONCLUSION

1 Overview of the study.....	133
2 Discussion of results.....	134
2.1 Job success	135
2.1.1 Gender	135
2.1.2 Qualifications	136
2.2 The significance of cognition	137
2.3 The significance of mental alertness	139
2.3.1 Correlations	139
2.4 The significance of personality	142
2.4.1 Criterion score	143
2.4.2 Personal Competencies.....	144
2.4.3 Other personality dimensions	144
2.4.4 Regression analysis.....	148
2.5 The significance of personal competencies	148
2.5.1 Biographical variables.....	148
2.5.2 Criterion.....	150
2.5.3 Regression analysis.....	150
2.6 The predictive validity of the “Successful Manager Profile”.....	150
2.6.1 Male matriculant group	151
2.6.2 Female matriculant group	152
2.6.3 Male graduate group.....	155
2.6.4 The total sample	156
2.7 Practical implications.....	158
2.7.1 The selection of employees for promotion	158
2.7.2 Strategic implications for the organisation.....	159

3 Conclusion.....	160
<i>3.1 Generic model of variables associated with high performing, successful managers</i>	161
<i>3.2 Organisation specific model of variables associated with high performing, successful managers</i>	163
4 Limitations of the study and recommendations for future research	165
<i>4.1 The target population</i>	166
<i>4.2 Research in other organisations in the industry</i>	167

CHAPTER 1

INTRODUCTION

South Africa has an advanced, sophisticated financial services sector, which compares favourably with those of the world's more advanced countries (Alexander Consulting, 1991). It is endowed with all the categories of financial intermediaries, financial instruments and markets normally associated with First World countries.

At the micro level, banks satisfy the financial requirements of households, businesses, governments and foreign sectors; in addition, they play a significant role at the macro level. Alexander Consulting (1991, p.5) quotes the De Kock Commission in this regard:

There are two main reasons why well developed and efficient financial markets are desirable. The first is the significant contribution such markets can make to the growth and general soundness of the economy. And the second is the key role they can and must play in the application of effective stabilisation policies in a basically free enterprise and reasonably developed economy. These two functions are recognised as being closely interrelated.

The social and macroeconomic importance of the South African banking sector should therefore not be underestimated.

Throughout the world, the banking sector has become extremely dynamic and volatile. In line with these trends, the South African banking sector also has been undergoing changes, particularly in the past decade. If the changing role of banks is to be fully understood, it is essential to consider their traditional role. A brief outline of the history of banking in South Africa, from 1793 to date,

will therefore be provided, with particular emphasis on developments in the 1990s.

1 The banking sector

1.1 *The role of banks*

For a number of reasons, banks occupy a particularly strategic role in the economy of a country. The four main reasons are the following (KPMG Africa, 1996):

- The stock-in-trade of banks is money, which is both a means of exchange and a means of storing value.
- The operations of banks are funded by deposits made by the general public, and banks are the custodians of these deposits.
- Banks are catalysts for the creation of money and, therefore, influence a nation's economic health.
- The banking system is synonymous with a country's payments and clearing system. The ease and speed with which monetary transfers are made are indicative of the sophistication of this system.

For these reasons, banks must comply with special legal and prudential requirements. For example, they are required to hold minimum levels of capital and reserves of sufficient quality, as well as minimum levels of liquid assets. These requirements serve not only to ensure the soundness of banks, but allow them, as well, to function as vehicles for effecting monetary policy.

In addition, banks are required to show that they are owned and managed by individuals who are fit and proper to do the task. Public confidence in a bank depends, ultimately, on perceptions of the bank's soundness and of the probity of its management. Indeed, banks are essential to the integrity, stability and efficiency of a country's financial system and can be counted amongst its national assets.

1.2 Short history of banking in South Africa

The history of banking in South Africa can be divided into four main periods: an early period from 1793 to the mid-1960s, a period of strict regulation from 1965 to 1980, a period of deregulation in the 1980s, and a period of globalisation in the 1990s (KPMG Africa, 1996).

1.2.1 Early period: 1793 to mid-1960s

The first bank in South Africa was founded by the Dutch East India Company in 1793 and offered only longterm loans. Some of the country's largest banks date back to the 1800s, and several foreign banks established themselves in South Africa after the Second World War. This was soon followed by the emergence of a specialised money market, to accommodate short-term funds. This development resulted, in turn, in the establishment of the National Finance Corporation, the first merchant bank (namely Union Acceptance Ltd - UAL) (Alexander Consulting, 1991).

1.2.2 Strict regulation: 1965 to 1980

The period from 1965 to 1980 was characterised by strict regulation. High levels of inflation during this period led to the imposition of credit ceilings and to increases in the minimum levels of reserves and liquid assets held by the banks.

These factors, in turn, led to disintermediation, whereby corporations bypassed the banking system and began to borrow from, and lend to, each other directly, leading to the development of a so-called "grey" market. A shift in investor habits also began to manifest itself, in that both the corporate sector and individuals increasingly sought investment vehicles outside the banking sector. Individuals, in particular, began to invest their surplus funds, not in traditional banking products, but in other products such as unit trusts, life assurance policies and retirement annuities (KPMG Africa, 1996).

1.2.3 Deregulation in the 1980s

Changes in the banking industry from the mid-1980s have made it necessary to evaluate existing processes for the development of skilled first-line managers. Accordingly, developments during the 1980s are reviewed in some depth in this section.

Since the late 1980s the South African banking industry has faced the most challenging times of its history (*Business Day*, August 1996, p.3). Following the country's readmission into the world community, banks from abroad have re-entered the market, focusing on the more lucrative segments of the corporate market. At the same time, corporate South Africa has been seeking to spread its wings abroad and local banks have been working to set up the infrastructure needed to service these clients (Alexander Consulting, 1991). Political and economic change is creating further challenges, such as the need to cater for the mass of emerging customers, and coping with volatile markets and increased competition.

The South African industry has, to some extent, lagged behind its European, American and Asian counterparts in terms of both increasing competitiveness and growing pressure on margins. Important factors here were the relative isolation brought about by financial sanctions against South Africa, and the monetary policy of the Nationalist Party government (Wiese, 1996 in KPMG Africa, 1996). In 1987 the De Kock Commission was appointed to analyse the effect of monetary policy on the financial system. One significant finding was that over-regulation of the banks had led to both market inefficiencies and a lack of competitiveness (KPMG Africa, 1996). As a result of the De Kock Commission findings, credit and interest rate ceilings were abolished and the prudential requirements of banks were reduced.

The large commercial and general banks began to offer one-stop banking, or relationship banking, as it is also known. The target market was subdivided and stratified in all directions - according to age, income, academic and professional qualifications, and so on - and competitors started offering a greater range of products to clients. Deregulation had thus made the banking

sector more responsive to market needs, but it has also strengthened the need for managerial staff who can originate and implement new products and technologies.

1.2.4 Globalisation in the 1990s

During the early 1990s the sector was confronted with the problem of how to cope with shrinking margins in the traditional interest-related business and the expensive search for new sources of revenue, whilst dealing with increasing local and international competition. Inevitably, the focus shifted to improving productivity and cutting costs. The fact that the productivity index for the financial, insurance, real estate and business services sectors had decreased from 121.0 in 1970 to 95.8 in 1990 underlined how essential it was to increase productivity. Moreover, the unit labour cost index had surged from 15.7 to 223.5 over the same period (National Productivity Institute, 1991), thereby intensifying the pressure for successful management of the banks' changing macroenvironment. The growing shortage of suitably skilled people in this new environment led to greater competition for this scarce resource and, paradoxically, at precisely the time that the industry was going through a reduction in staff numbers, it was also engaged in a search for managerial expertise and specialised skills. An assessment of the magnitude of the problem in 1989 predicted that, by the year 2000, South African industry in general would have a shortage of 103 000 managers and entrepreneurs (Cooper, Schindler, McCaul, Hamilton, Beale, Clemans, Kruger, Delvare & Moonsamy, 1989). This prediction drove home the point that the banks needed to focus on, and invest heavily in, the identification and fast-track development of future managers.

In order to cope effectively with innovation - in particular the proliferation of services and products - banks poured money into their technology infrastructure, and were consequently transformed into information-based organisations (Drucker, 1988). A McKinsey study (Leichtfuss & Mattern, 1995) on worldwide best practice revealed that, at that time, the top five banks

internationally shared a highly professional marketing approach that translated customer information into effective sales strategies. Further, all had a low cost structure as a result of lean, efficient, automated processes (Leightfuss & Mattern, 1995). The transition from paper-based information processing to technologically advanced systems has radically changed the profile of the ideal manager and the skills he or she possesses (Strydom, 1998). The new generation of managers need to be comfortable operating in both the systems domain (implementing procedures, following rules) and the interpersonal arena of building relationships with existing customers and prospective clients to pay for the investment in infrastructure.

2 Organisational leadership requirements for the 1990s and beyond

The background sketched above makes it clear how vital it has become to identify and invest in management potential. Traditionally, managers in the banking industry tended to find their way into the more senior echelons by virtue of long tenure in particular positions (Jenks, 1991). Now, however, the ability to acquire and develop staff with management potential more rapidly than one's competitors has become a primary strategy for promoting competitive advantage and continued success. The targeted group in this activity is not future leaders (future board members or executives), but middle and first-line managers whose position between strategy and implementation makes their role critical in the success of organisations (Leichtfuss & Matten, 1995; Stewart & Stewart, 1981).

Cockerill (1989) lists some of the activities performed by effective managers in organic, rather than mechanistic organisations: These include:

- building and developing fluid relationships and teams across unit boundaries
- developing staff
- being confident in the success of decisions

Clearly, the old style of management is no longer adequate in an environment increasingly characterised by rapid change, competitiveness and turbulence. Two of the critical questions faced by many organisations in the banking sector are how to identify the managerial *behaviours* required for the future, and how to identify managerial *ability*. The aim of this study is to investigate the success with which managerial ability (as defined in the context of the new set of requisite managerial behaviours in a financial service organisation) can be identified.

3 The problem investigated: the identification of managerial ability

Since data about individuals are generally collected and recorded in their "personnel files", information concerning their past achievements, or track record, is invariably available. Although a good track record may, to some extent, predict future job success, it is a highly unreliable method (Blake, 1998). Never the less, what organisations do know in general terms is that some employees are more able than others to do something that might be referred to as "higher levels of work". This is also referred to as "a bigger job", more "complex work", or more "difficult" work: not just more work in quantity, but somehow greater in scope or degree (Jaques & Cason, 1994).

Managements have attempted, with varying degrees of success, to measure the capability of their staff to operate in new and/or more challenging environments. Experience, achievement record, and performance appraisal ratings as indicators of success were later supplemented with information from psychometric tests, particularly various types of intelligence testing. Definitions of intelligence are, however, no more adequate than those of work success, and intelligence tests have mainly been validated in relation to academic learning of certain limited types of knowledge (Jaques & Cason, 1994; McClelland, 1973). Such criteria are far removed from the measurement of adult capability to perform higher or lower levels of work.

This study was therefore embarked upon for the following reasons. First, to develop a thorough understanding of the complexity level of work in the junior managerial cohort. This required an analysis of the macroenvironmental changes in the banking industry and the impact that these changes have on the work roles in a specific organisation; and a description of work complexity in dimensions of behaviour which demonstrably relate to success at the specific level (Jaques & Casco, 1994; Stewart & Stewart, 1982; Woodruffe, 1990). Second, to develop a conceptual model comprising variables which could be used to predict individuals' success at the junior managerial level, and in particular, success at higher levels where more complex work is typically found. Third, to investigate the predictive validity of the theoretical model developed for the selection of future managers over a five-year period.

In this context, the current study was conducted to determine which attributes would qualify individuals to be managers in the new organisational context. This would make it possible to identify these people and both they and the organisation would benefit from their correct placement. The conceptual model could be used for both internal selection and external recruitment of managerial staff in the junior managerial cohort, with external recruitment being emphasised as the swing away from "coming through the ranks" continues.

CHAPTER 2

MANAGERIAL ROLES AND WORK CONTEXT

The activities that managers engage in, and the impact of managerial performance on the survival and effectiveness of organisations, have received considerable attention in both academic research and applied management literature. There has been much debate about how important managers and/or leaders are to the success of organisations, with some authors arguing that organisational structure, if devised properly, performs the same functions as those which a manager might undertake (Jaques, 1990; Kerr & Jermier, 1978). Nevertheless, there is general agreement that managers fulfil a significant role in organisations, although there is less consensus on the specific tasks they must perform to be successful.

1 Views on managerial roles

Much of the current research and thinking about managerial roles stems from the work of Henri Fayol (O'Driscoll, Humphries & Larsen, 1991) who described the functions of management as planning, organising, commanding, coordinating and controlling the major operations of an organisation. In the 1970s, however, this classical model was challenged by Mintzberg (1975), who categorised managerial activities using a three-dimensional typology of interpersonal, informational, and decision-making roles (O'Driscoll, Humphries & Larsen, 1991; Stewart & Stewart, 1981). According to Mintzberg (1975), three interpersonal, three informational, and four decision-making roles can be identified. The relative importance of these roles varies according to the type or level of job in which the manager is operating. Mintzberg, however, refrains from making prescriptions about managerial effectiveness on the basis of these different roles, and his work, although it has attracted widespread

attention, has not been subject to much empirical confirmation (O'Driscoll et al., 1991). More recent perspectives are offered by Kotter (1982), who found that managers spend a significant proportion of their time interacting with other people or systems. Kotter (1982) further argued that it is essential for managers to gather information, attain goals, and set plans for the future. Steers (1991, p.180) built on this conceptualisation and defined managerial work as the "process of planning, organizing, directing and controlling the activities of employees in combination with other resources to accomplish organizational objectives".

In addition, states Steers (1991), an essential part of the manager's role is to facilitate the organisation's longterm effectiveness and longterm goal attainment by coordinating and efficiently utilising available resources (Steers, 1991).

2 Managerial roles vs leadership roles

A number of authors (Bennis, 1989; Boyatzis, 1982; Kotter, 1990, 1991; Stewart & Stewart, 1982; Zaleznik, 1977) have distinguished between the roles played by managers and leaders, and the competencies required of each. Kotter (1991) obtained data from 200 executives, by means of questionnaires or in hour-long interviews. The dimensions of management or leadership were not defined for them - they were asked to describe in detail the actions of someone they knew who provided effective management, and then to describe, similarly, the actions of someone they knew who provided effective leadership. Table 2.1 compares the summaries of both management and leadership within complex organisations, based on these findings.

TABLE 2.1: Comparing management and leadership.

	Management	Leadership
Creating an agenda	Planning and budgeting - establishing detailed steps and timetables for achieving needed results, and then allocating the resources necessary to execute.	Establishing direction - developing a vision of the future, often distant future, and strategies for producing the changes needed to achieve that vision.
Developing a human network for achieving the agenda	Organising and staffing - establishing some structure for accomplishing plan requirements, staffing the structure with individuals, delegating responsibility and authority for carrying out the plan, providing policies and procedures, and creating methods or systems to monitor implementation.	Aligning people - communicating the direction by words and deeds to all those whose cooperation might be needed so as to influence the creation of teams and coalitions that understand the vision and strategies, and accept their validity.
Execution	Controlling and problem solving - monitoring results vs. plan in some detail, identifying deviations, and then planning and organising to solve these problems.	Motivating and inspiring - energising people to overcome major political, bureaucratic and resource barriers to change by satisfying very basic, but often unfulfilled human needs.
Outcomes	Produces a degree of predictability and order, and has potential of consistently producing key results expected by various stakeholders.	Produces change - often to a dramatic degree, and has the potential of producing extremely useful change, e.g., new products that customers want, new approaches to labour relations that help make a firm more competitive.

Source: Kotter, J. (1991), *A Force for Change: How Leadership Differs from Management*. New York: The Free Press

Management and leadership are clearly similar in some ways: both involve deciding what needs to be done, creating networks of people and relationships that can accomplish an objective, and then ensuring that the task is executed (Kotter, 1991). Despite these similarities, there are differences that distinguish

management from leadership. Kotter (1991) identified the strong emphasis in managerial roles on shorter time frames (budget cycles), on details, on eliminating risks, and on instrumental rationality. Zaleznik (1977) asserted that there are fundamental differences in the "world views" of people who occupy managerial roles and those in leadership roles. The dimensions for assessing these differences include managers' and leaders' orientations towards goals, work, human relations and the self.

In the following section, the work of Bennis (1989), Kotter (1990; 1991), and Zaleznik (1977) is reviewed in terms of these four dimensions, i.e. orientations towards goals, work, human relations, and the self.

2.1 Orientation towards goals

Managers are seen as adopting passive, reactive, necessary goals which limit choices (Zaleznik, 1977). Goals are set which are focused on the bottom line performance of the unit or business, which seek to maintain at least the *status quo* (or budget) (Bennis, 1989), and which are related to the planning and budgeting process in the organisation (Kotter, 1991).

Leaders, by contrast, strive for proactive, desirable personal goals which shape and direct ideas and steer the business into new directions (Zaleznik, 1977). The goals are used for the development and growth of the organisation, and they are always future oriented (Bennis, 1989). Leaders' personal goals set or create the vision and establish the overall direction of an organisation (Kotter, 1991; Lenggick-Hall & Wolff, 1998).

2.2 Orientation towards work

Managers view work as enabling. This allows for some use of ideas and for people to achieve various tactical goals. Managers rely on controls, they do things right within a short-term time horizon (Bennis, 1989), they use rewards

and punishments as appropriate and, generally, they adopt a conservative outlook on work (Zaleznik, 1977). They cope with complexity, bring about order and consistency and solve problems primarily through deductive reasoning (Kotter, 1991).

Leaders operate from a position of risk, seeking out exposed positions from which to launch ideas and visions for the future (Lengnick-Hall & Wolff, 1998; Zaleznik, 1977). They challenge the *status quo* (Bennis, 1989), thrive on change, actively look for linkages between events both inside and outside the organisation, and use inductive reasoning to formulate rules (Kim & Mauborgne, 1997; Kotter, 1991).

2.3 Orientation towards human relations

Managers need to work with people, they tend to mediate in relationships to preserve balance in organisational units, and they are role-bound (Conger, 1998; Zaleznik, 1977). They organise staff, establish organisational structures for accomplishing planned requirements, staff jobs with qualified individuals, communicate the plan to incumbents, delegate the responsibility for carrying out the plan, and tightly monitor performance (Conger, 1998; Kotter, 1991).

Leaders inspire more extreme emotional responses and they are generally more empathic in their relationships with others. They align people (create a sense of shared purpose), motivate (Kotter, 1991), and inspire trust (Bennis, 1989). Also, they tend to motivate people to overcome obstacles by appealing to their needs, values and emotions (Conger, 1998; Kotter, 1991).

2.4 Orientation towards self

Managers need to feel that they belong to a particular, clearly identifiable group of employees in the organisation who share a common purpose (Bennis, 1989). Leaders, in contrast, are people with an intense sense of

themselves as individuals. They do not need to belong - they are self-sufficient and focused (Bennis, 1989; Zaleznik, 1977).

Despite these differences, the need for management and leadership behaviours exists at all levels in organisations. There is, therefore, a demand for people who meet the requirements of both roles and who have the competencies to fulfil both roles. Kotter (1990, p103) states that "strong leadership with no management is no better, and is sometimes actually worse, than the reverse".

3 Role requirements for managers in a changing environment

3.1 *The changing environment*

Cockerill (1993) refers to research conducted by Burns and Stalker (1961) which shows that organisational structures vary with the rate of environmental change. Cockerill (1993) identified two independent core dimensions of organisational structure namely tasks and processes. By exploring how these relate to the volatility of an organisation's external environment, he was able to specify two organisational types. These are the "organic type" (unstructured tasks and teamwork), and the "mechanistic type" (structured tasks and individualised work). The organic type is suited to a dynamic environment, while the mechanistic type fits a stable environment.

One implication of this research is that organisational units must be structured very differently if their environments differ. It is therefore a critical role of management to ensure that units are structured appropriately for the environments in which they exist. Accordingly, managers have to be able to cope successfully with the diversity, tensions, and problems of integration that arise when there are units with very different external environments and internal structures in the same organisation.

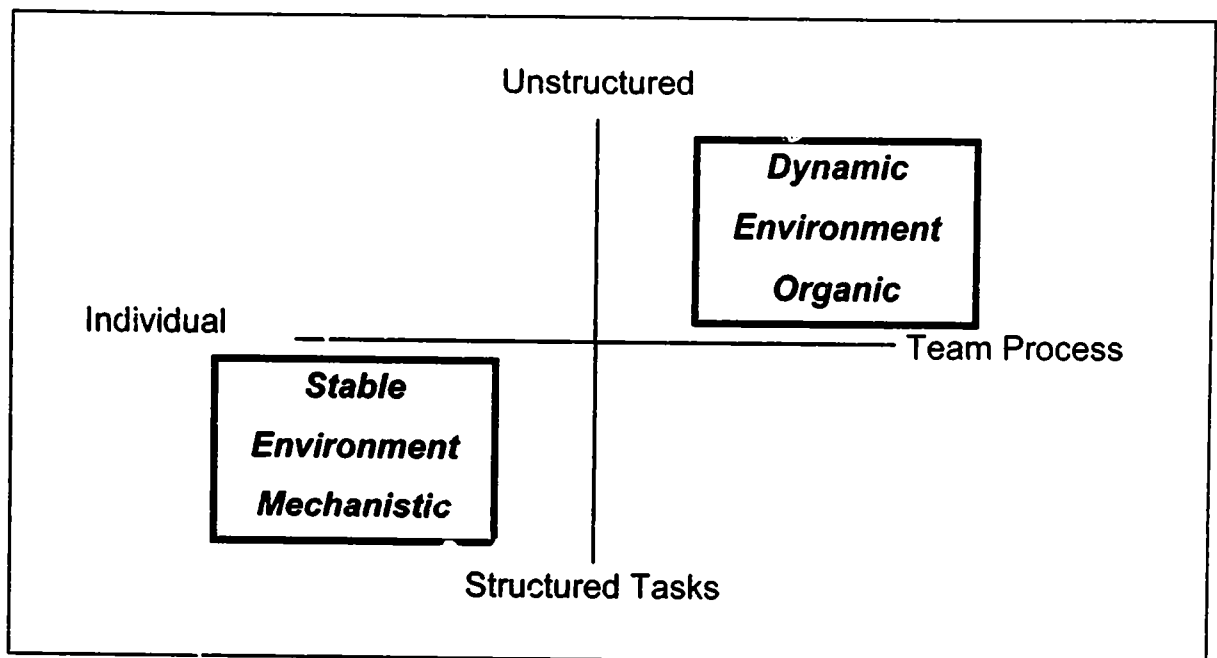


Figure 2.1: The relationship between organisation environment and structure

Source: Cockerill, A.P. (1993). Validation study into the high performance managerial competencies. Unpublished report, London Business School.

Clearly, there are implications for staff when there is a move from a "mechanistic" internal structure, which is characterised by low task difficulty and variability (i.e. routine tasks), a high level of standardisation (i.e. rules, policies, and procedures prescribing how work must be done) and high role interchangeability (unit members can change jobs frequently), to an unstructured environment. In such circumstances there is a need for managers who can traverse the imaginary line between managerial roles and leadership roles, displaying appropriate behaviours given the different environments (both external and internal). This, in turn, has implications for predicting managerial performance. Predicting managerial success requires, first, a thorough review of the organisational context, which includes both the internal and external environments, and second, an integrative model or framework which describes the characteristics demanded of managers in a dynamic environment.

3.2 *Role requirements of managers*

3.2.1 Change agent

Nicolson and West (1996) observe that the various works on people at work often treat change as a troublesome aberration - an external force which disturbs the stable patterns of work life. However, these writers claim that, given the pervasiveness of change, it is better to assume that change is the constant, and stability the exception. Managers are charged with coordinating and influencing subordinates to change their conventional responses to become more attuned to the direction in which the organisation is changing. At the same time, managers are required to become influential agents for change in organisations (Bennis, 1989; Kotter, 1991; Nicholson & West, 1996). O'Meara (undated) lists ten factors which force organisations to change. These factors, based on an analysis of trends and indicators which are readily identifiable, are listed in table 2.2.

TABLE 2.2: The nature of modern management problems

Problem	Description
Magnitude	Population growth will dwarf any conceptions that were held in the past of size of organisations.
Quality	Populations will not only be larger, but of a different quality in terms of education, ability and aspirations.
Complexity	Quantitative and qualitative changes will result in new levels of complexity, requiring new approaches and new thinking.
Urgency	Because of the size and speed of operations, pressures will build up rapidly, so that problems will have to be solved speedily.
Acceptability	Solutions will have to be acceptable to better educated and more sophisticated populations.
Humanity	Solutions will have to be humane, providing for the needs of all levels of the population and not only those of the privileged sections.
Elegance	"Elegant" solutions, that is, solutions with the highest all-round excellence, will be favoured, and these will often be of a temporary nature in view of the rapidity of change.
Collaboration	Atomic power accentuates the need for collaboration internationally, and within nations no adequate solutions can be found without collaboration between different interest groups. Solutions must be win-win, rather than of a win-lose nature.
Service	Public service organisations, in which service rather than profit is the criterion, will play an increasingly dominant role, giving the state and public institutions a greater measure of control in this "post-industrial" society.
Technology	Though technological innovations will be produced at an ever-increasing rate, their use will have to be co-ordinated with social needs and controls.

Source: O'Meara, J. (Undated), *The developmental approach to the growth of organisations*. Unpublished Document: University of the Witwatersrand.

Nicolson and West (1996) present an argument in favour of the change agent role when they highlight the increased knowledge requirements of managers. They argue that, in order to perform effectively as managers, managers have to have greater specialist knowledge about their organisations' core competence, markets and technology. Further, the complexity of modern organisations, their multiple interdependencies with external groups, and their preoccupation with achieving a position of competitive advantage in the market, have a considerable impact on the boundary-spanning roles of managers (Cullen, 1983), and underline their role as facilitators of change.

3.2.2 Learning facilitator

The role of mentor, coach and teacher of subordinates is closely related to the change agent role. Senge (1990) argues that organisation renewal strategies can only be successful in a culture of learning. He defines a learning organisation as one in which people are continually growing and using their increased capabilities to shape their own and the organisation's future (Senge, 1990). Mumford (1996) argues that work-based learning, in which managers recognise and take advantage of learning opportunities in the course of their everyday work, can be a more powerful way of developing people than formal, set-piece training courses. There have been three main developments in the increasing provision for work-based learning (increased managerial responsibility for learning). Although they overlap both chronologically and in content, the developments referred to are action learning (Mumford, 1996), the learning organisation (Senge, 1990) and the competency approach (Boyatzis, 1982, Spencer & Spencer, 1993). The focus is not only on generating new job knowledge and skill among subordinates, but also on helping everyone in the organisation to gain greater insight into the current reality (in the organisation). Increasing the competence of staff through learning, coaching and mentoring is required at two levels: at the individual level (Fink, 1996) and at the group level (Belbin, 1996). The dynamic environment and fluid structures mean that individual competence is no longer sufficient for organisations to excel.

Effective interpersonal and group facilitation skills are becoming increasingly important competencies for successful managers (Belbin, 1981, 1993, 1996; Cockerill, 1989).

3.2.3 Teamwork and cooperation: participative management

Teamwork and cooperation, or participative management, is the most frequently quoted role requirement for the new-generation manager (Cockerill, 1989, Spencer & Spencer, 1993). Superior managers elicit the input of others and involve them in issues that may affect them. Participative management, while frequently employed with subordinates, may as readily be used with supervisors or peers (Spencer & Spencer 1993). Cockerill (1989) says that the new generation manager is expected to build and develop fluid networks and teams which span organisational boundaries. The essence of this task is to create a structure in which individual members of the team can function relatively autonomously, and in which decision making is done at the lowest logical level (Fink, 1996; Jaques, 1990). Empowerment and motivation of people should be done according to guidelines which are determined by the broad vision of the leader of the particular concern. Rosener (1990) uses the term "interactive leadership" and views participation, inclusion, the sharing of power and information, motivating others and enhancing their self-worth as essential components of the new managerial role.

Jenks (1991, p.34) summarised the more democratic, participative and cooperative management style as follows: "...democratic yet demanding leadership that respects people and encourages self-management, autonomous teams and entrepreneurial units".

3.2.4 Exploiting organisational core competence

Organisational core competence or capability can be defined as "A bundle of organisational capabilities and technologies ... which capture collective

organisational know-how and ... are capable of being deployed to provide unique functionality and sustain advantage in the market place" (Binedell & Nurick, 1994).

Managers are required effectively to integrate all the organisation's competencies: systems must be supporting and interlocking in nature. Senge (1990) refers to the need to manage the creative tension between the current reality and the vision of where the organisation needs to be. As it is, managers spend more time controlling what other people are doing than encouraging innovation and initiative, and their assimilation (Binedell & Nurick, 1994).

Jenks (1991) highlights the contrast between change and continuity as especially relevant to the role of managers. There is a need for stability as a basis for change to enable the organisation to carry on productively through the chaos of change. This is seen as the "core paradox" - fostering internal stability in order to encourage the pursuit of constant change.

3.2.5 Ensuring organisational unit effectiveness

The manager remains primarily accountable for the effectiveness of the unit he is managing. Jaques (1990, p.130) states that the managerial role has three critical features. First, and most critical, is that every manager must be held accountable not only for the work of subordinates, but for adding value to their work. Second, every manager must be held accountable for sustaining a team of subordinates capable of performing the work. Third, every manager must be held accountable for setting direction and getting subordinates to follow. This view is supported by Kotter (1991) in his definition of "pure" managerial work, which includes planning and budgeting, organising and staffing, controlling and problem solving as core managerial activities.

The "systems model" dimension of organisational unit performance developed by Cockerill summarises the salient domains of managerial work expected in a dynamic and changing environment (Cockerill, 1993).

TABLE 2.3: Organisational unit performance dimensions

Performance Dimension	Definition
Outputs	Level of attainment of production/service goals, quality of products and/or services, reputation for excellence and quantity of work produced.
Climate	Warmth and friendliness of working atmosphere, harmony, interaction and teamwork, staff career satisfaction and employee commitment to the unit.
Adaptability	Adaptability and flexibility of operations, staff skills, current technology, administrative and management systems, new product development, and unit structure.
Resource Inputs	Level of resources available to unit, attraction and retention of high quality staff and investment in the future of the unit.

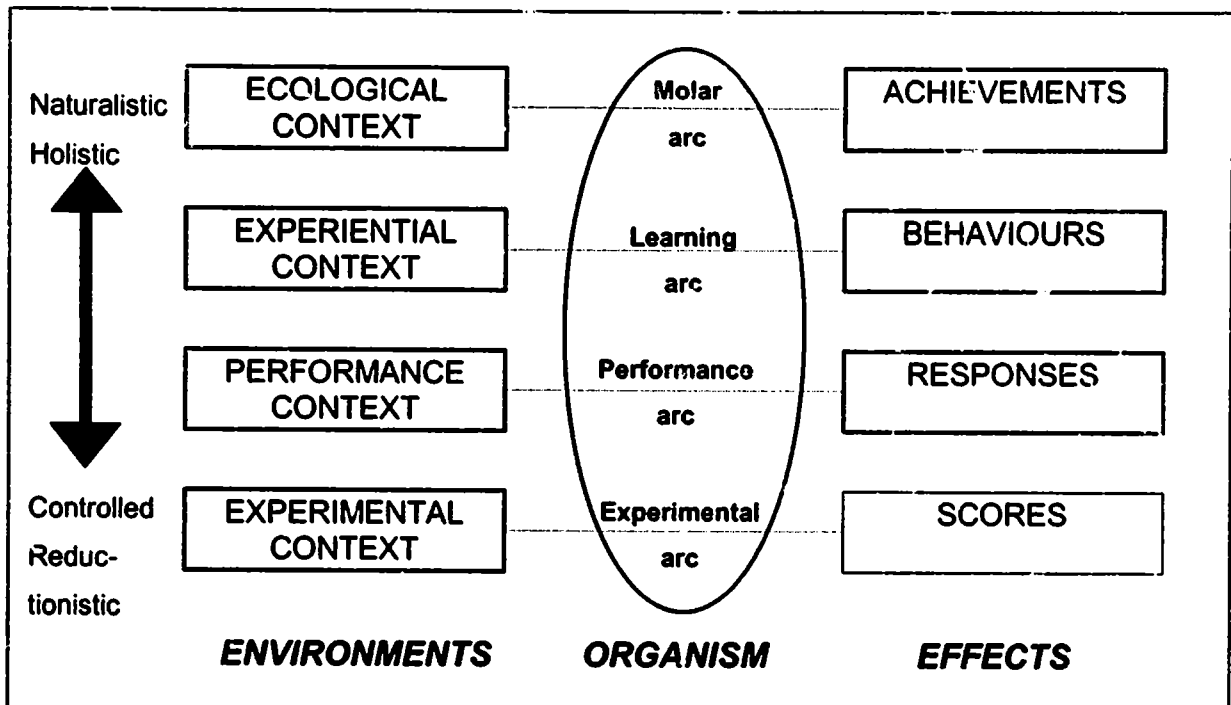
Source: Cockerill, A.P. (1993). Validation study into the high performance managerial competencies. Unpublished report, London Business School.

4 Managerial success and organisational structure

Managerial success and organisational structure are interwoven, to the extent that any attempt to consider the first without contextualising it within the organisational structure would be a futile exercise. Retief (1992) argues for a contextual approach to the description and measurement of behaviour. Although scattered arguments in favour of a contextual approach in social science have been advanced from time to time (e.g. Barker, 1968; 1978; Berry, 1980), the systematic basis and need for such an approach have arguably been articulated in their most coherent form in cross-cultural psychology (Berry, 1980). This is because cross-cultural psychology, by nature of its subject matter, is concerned with the effect of a certain kind of context - the cultural - on human behaviour. Accordingly, various frameworks were developed in order to deal with the effect of context on behaviour, and with the contextual embeddedness of behaviour.

Berry (1980) has systematised this contextual relationship between individuals and their environment in a model in which he investigated the relationship between measurements and measurement contexts. The diagram in figure 2.2 shows four levels of environmental contexts on the left, with corresponding classes of behavioural effects on the right.

Figure 2.2: Berry's Multilevel Arc Model



Source: Berry, J.W. (1980). Ecological analysis for cross-cultural psychology. In N. Warren (Ed.), *Studies in cross-cultural psychology*. London: Academic.

As can be seen from the model, contexts and effects are related at each level of a human organism. The relationships between these contexts and effects in the model are traced by means of linkage arcs at the various levels. The arrow on the extreme left represents a continuum from natural and holistic occurrences at the top, to more controlled and reductionist contexts and/ or observations at the bottom.

The molar arc concerns the total life situation and accomplishments of an individual. The learning arc concerns relationships between recurrent independent variables in the experience of an individual and his/her

characteristic behaviours. The performance arc is concerned with more specific behavioural acts as a function of immediate or current experiences. The experimental arc is limited to controlled experimental situations in which scores are studied in response to systematic variations in task demands (Berry, 1980).

An individual's potential and, in this instance, managerial talent, refer to whether he/she is capable of doing something in the future that is different from and more difficult than the things he or she is currently able to do (Fleishman, 1972; Jaques, 1989; 1991; 1992; Stewart & Stewart, 1982). Thus, managerial talent relates to how an individual's combined skills, attributes and abilities will enable him or her to achieve specific goals in a specific context in future, and therefore also relates to probability. The implication is clearly that both the experimental and performance contexts need to be explored and defined to ensure valid predictions of future behaviours (Retief, 1992).

5 Defining the managerial work context

Defining the present or future managerial job context can be done in various ways by using job analysis techniques (Algera & Greuter, 1991). Job evaluation methods can be applied to arrive at a relative hierarchy of activities, described in a systematic way of one kind or another. A second method is to use competencies to describe the critical success factors required by the role and work context (Cockerill, 1989; Ellen, 1985; Greatrex & Phillips 1989; Kauffman, Jex, Love, & Libkuman, 1993; Shuttleworth & Prescott, 1991; Sparrow, 1995). A third approach could be to adopt a systems perspective applied to (hierarchical) levels at which work is done in organisations (Stratified Systems Theory), and to describe the ascending levels of work complexity as a function of information complexity (Jaques, 1989; 1990; Jaques & Clement, 1992; Jaques & Cason, 1994). Although some existing methods and instruments of job analysis can be used for general purposes such as selection, training, etc. (Algera & Greuter, 1991), very specific requirements

are relevant when using such methods and instruments to define the managerial work context. In some cases, a combination of methods can be used in parallel or series fully to understand the salient and underlying contextual issues. For example, in order to define managerial competencies, a combination of the Repertory Grid Technique (Stewart & Stewart, 1982) and Flanagan's Critical Incidents Technique (Flanagan, 1954) could be used.

5.1 Job evaluation methods

Definitions of job evaluation refer to the identification, analysis and systematic assessment of job content so as to determine the differences between jobs. The result is an arrangement or classification of jobs which can be used to compare similar jobs with one other to ascertain whether they are of the same complexity or size, or to compare different jobs with one another (Blake, 1977; Harvey, 1986; Cascio, 1991; Livy, 1975; Walker, 1992).

There are many systems of job evaluation, but they can be categorised on the basis of two features: (1) consideration of the job as a whole versus consideration of parts or elements; (2) evaluation of each job against other jobs versus evaluation against a previously prepared rating scale (Blake, 1977; Lawshe & Satter, 1944). **Ranking methods** measure job against job, considering each as a unit, while **classification methods** consider each job as a whole, but measure it against previously determined grade standards. **Factor comparison** methods evaluate job against job, breaking each job into elements, while **point** methods consider jobs by elements, and measure each against a predetermined scale. The point method, first described by Lott in 1926 as quoted by Blake (1977) is the most extensively used and highly refined method used today (Cascio, 1991).

The point method is based on the assumption that there are certain identifiable variables or "factors" which are common to all jobs in a family of jobs, such as managerial jobs. The additional assumption is made that, for each job, the

assessments of work content can be summated to a single figure. This “objectively” derived value, if resulting from a consistently applied procedure, may provide a solution to the need for a criterion against which individual progress can be evaluated.

There are two possible approaches to the general problem of how to group jobs together for the purposes of cooperative validation, validity generalisation, and the administration of performance appraisal, promotional (selection) or career planning systems (Zedeck & Cascio, 1984). First, we can look at differences between jobs; this would involve an analysis of variance, or a multivariate analysis of variance approach. Alternatively, we can look for similarities among jobs; this would necessitate techniques such as correspondence analysis or cluster analysis. There are difficulties associated with both methods, although this may not be a cause for concern, for the following reasons:

- (1) The different objectives for which job families may be constructed require that the grouping strategy be tailored to the purpose at hand.
- (2) The resulting groupings, in turn, will vary as a function of both the job description and the grouping method used.
- (3) The practical differences between jobs and between alternative possible job family configurations are likely to vary according to the objective for which the job family system has been designed (Pearlman, 1980; Harvey, 1986).

Results from several studies (Cornelius, Schmidt & Carron, 1984; Sackett, Cornelius & Carron, 1981) suggest that when the focus is on combining jobs for the purposes of validity generalisation, broad content types of job analyses are appropriate. (This notion is also supported by the “competency” school of thought.) It is important to stress, however, that global job analysis procedures do not provide sufficient information for other human resource management purposes, such as the construction of work sample tests, performance

appraisal procedures, or the development of career ladders (Cascio, 1991). Cascio (1991) further argued that there is a danger in assuming that all jobs within a classification are similar, because evidence indicates that they may differ in important, practical ways. The process of grouping jobs into families should, therefore, first focus on understanding the differences between them, and then on grouping them into a family of level group.

5.2 The “competency” method

Jaques and Cason (1994) argue that organisations are essentially gatherings of people who have focused on, and are working towards, specific business objectives and goals. Work is designed around attaining these goals as efficiently as possible (Cockerill, 1993). Competencies, which are defined as clusters of behaviours which are related to success in a particular position (Ellen, 1985; Stewart & Stewart, 1982; Woodruffe, 1990), explain in business language the behaviours or personal abilities required to do a particular job successfully.

Spencer and Spencer (1993, p.9) extend this definition of a competency to include variables which more clearly describe the inputs (personal traits) and outputs (job successes). This more comprehensive definition of a competency is as follows:

A competency is an underlying characteristic of an individual that is causally related to criterion-referenced effective and/or superior performance in a job situation.

In this definition, Spencer and Spencer (1993) argue that “underlying characteristic” means the competency is an enduring part of an individual’s personality and can predict behaviour in a variety of situations or task demands. Further, Spencer and Spencer (1993) argue that “causally related” means that the competency causes or predicts behaviour and performance, and finally, that “criterion referenced” means that the competency actually predicts who does something well or poorly, as measured by a specific

criterion. Figure 2.3 illustrates the dynamic nature of a competency, and its various components.

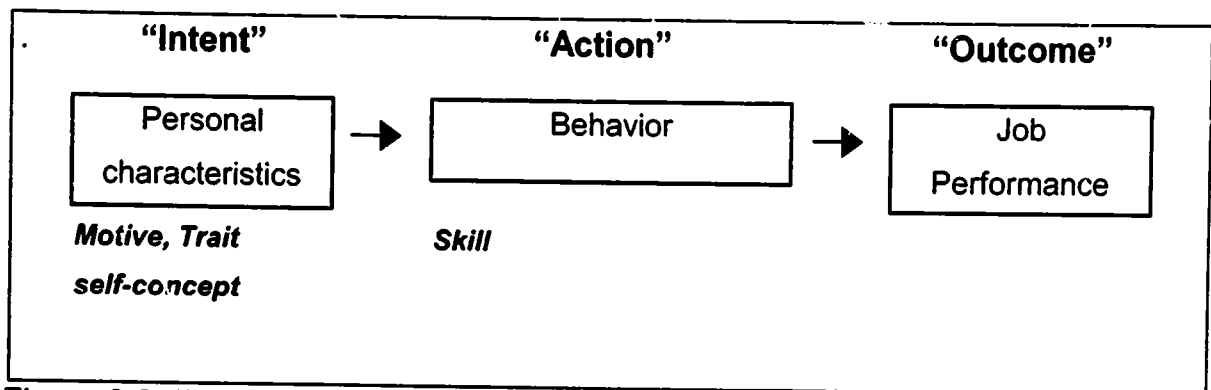


Figure 2.3: The Competency Causal Flow Model

Source: Spencer, L.M., Jr., & Spencer, S.M. (1993). *Competence at work: Models for superior performance*. New York: Wiley

The importance of the competency framework in describing work, and in particular which behaviours are closely related to effectiveness in a specific, or group of positions, is clear. The result is rich information on the key behaviours associated with superior performance, which is coherent (organisation specific), operational (can be used to select, develop and measure staff's success), and face valid (it reflects the organisation's corporate culture) (Greatrex & Phillips, 1989). The limitations of the competency framework model, however, are twofold. First, it does not provide sufficient quantitative information on the post - how much of the competency is needed to be successful. Second, a hierarchy of competencies does not necessarily translate directly into organisational structure (either into hierarchical levels or broad job family levels). Thus, further exploration of the literature is necessary for a method or theory to describe work and the levels of work, which could provide the link between the job evaluation method and the competency framework method. Advances in this regard have been made by Elliot Jaques (1956; 1976; 1989; 1991) by focusing on information complexity in organisations as a basis for discrimination.

5.3 Organisational discontinuity and stratification: stratified systems theory

The notions of information complexity and organisational structure are interwoven and need to be explained together. Jaques (1991; 1994) argues that the development of organisations over time from small businesses to large organisations is characterised by the formation of a hierarchical structure to cater for the increasingly complex nature of business activities that arise as a result of the size of the organisation and the market it serves. As organisations grow, they need to take into account increasingly complex issues and to consider these in relation to each other (i.e. information complexity). The ascending levels in the hierarchy are characterised by increasing levels of complexity and accountability. Therefore, decisions at progressively higher levels in an organisation affect increasing numbers of people over longer periods of time, and the potential consequences of errors become more severe.

Jaques (1991; 1994) further assumes that the increase in information complexity in organisations is non-linear, as are the capabilities of people who have to process the information. The different levels in an organisation's hierarchy occur where there are qualitative steps or changes in information complexity, such as between supervisory and managerial levels. The concept of level of work, which is the direct result of the "felt weight" of the job (its complexity) expressed as a function of the time span of the work, forms the focal point of his method for describing the size of jobs.

It was through the development of time-span measurement that a universal underlying pattern of stratification in managerial hierarchies was uncovered. Clear-cut boundaries were found that demarcated the true managerial layers. These boundaries were found at the following time spans: 1 day, 3 months, 1 year, 2 years, 5 years, 10 years, and 20 years, and they were called Stratum I, Stratum II, etc. as illustrated in figure 2.4.

A person's future performance at higher levels in an organisation can be influenced by addressing motivation, knowledge, skill, or even personality, but it is dictated essentially by the level at which he or she is able to process information (Jaques, 1994). Although "potential" or managerial talent is influenced by other factors, it amounts to the thinking capacity of the individual and the level at which this capacity allows him/her to work in the organisation.

TWO DIVISIONS OF CORPORATIONS X			
	LAYER	TIME SPAN	FELT FAIR PAY*
CEO	VII	20YR	1040
EVP	VI	10YR	520
PRESIDENT PRESIDENT	V	5YR	260
GENERAL MANAGER GENERAL MANAGER	IV	2YR	130
UNIT MANAGER EDITORS	III	1YR	68
FIRST-LINE MANAGER	II	3MTH	38
TECHNICIANS & OPERATORS TYPISTS	I	1DAY	20
*in thousands of dollars			

Figure 2.4: Jaques's model of organisational hierarchy

Source: Jaques, E. (1990). In praise of hierarchy. *Harvard Business Review*. Jan-Feb. 1990: 127-133.

Jaques's model is comprehensive and relatively simple, and rigorous in its structure. It suggests solutions to many problems regarding organisation management and the description of work levels. The prescriptive rigidity of Jaques's organisational structure and corresponding levels of information complexity do, however, attract criticism. Organisations co-evolve with the markets in which they exist and are, therefore, responsive to the forces which

evolve with them. Also, the theory under-emphasises the role of temperament in job performance and success - the description of work level acknowledges only intrusive temperamental factors as a limiting variable.

It can be argued that temperament is directly related to competencies, and to those jobs in which people are capable of being successful (Spencer & Spencer, 1993). Knowledge and skill, or information processing capability (Jaques, 1991; 1992; 1994), can at best predict what someone can do, not what he or she will do. Although knowledge and skill competencies tend to be visible, (relatively close to the surface), the deeper, and more hidden cognitive ability factors, self-concept, trait, and motive aspects are also important to performance.

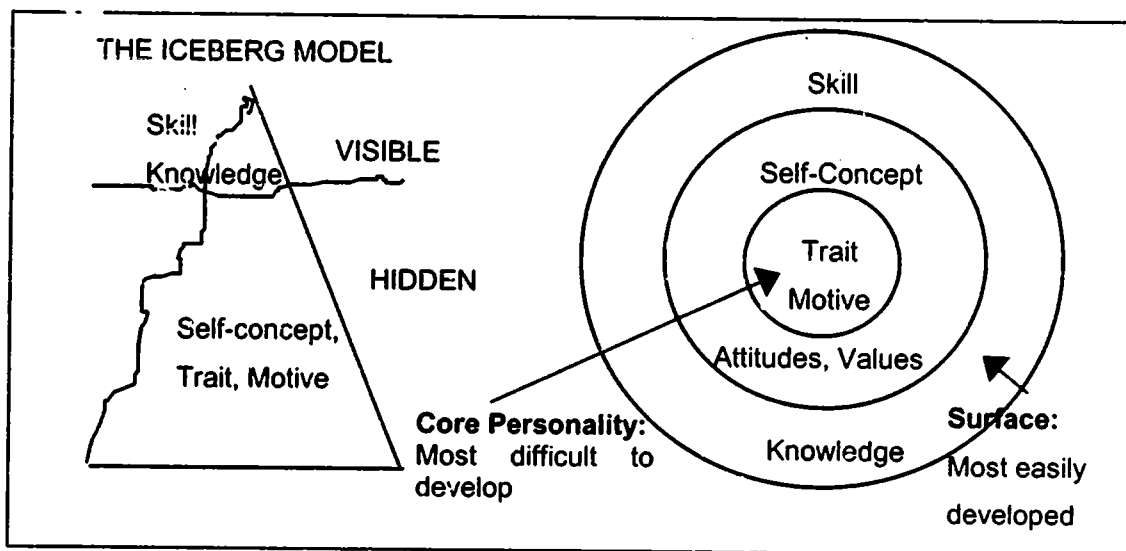


Figure 2.5: Central and Surface Competencies

Source: Spencer, L.M., Jr., & Spencer, S.M. (1993). *Competence at work: Models for superior performance*. New York: Wiley

As illustrated in figure 2.5, the surface and knowledge components pertaining to job success are relatively easy to develop; training would thus be a cost-effective way of securing these employee capabilities. Core self-concept, motive and trait capabilities at the base of the iceberg model are the most difficult to develop; it is therefore most cost effective to select for these characteristics.

5.4 *Integration of competency method and Stratified Systems Theory (SST)*

The question of predicting future managerial effectiveness depends on the organisational context: on the environment (stable or dynamic), on the role requirements of managers, and on the organisational structure and level at which the individual manager is required to function. The predictability of potential future success depends on mental processing capacity (Barrett & Depinet, 1991; Fleishman, 1972; Hunter, 1986; Hunter, Schmidt & Judiesch, 1990; Jaques, 1956, 1976, 1981, 1990, 1994), modifiable knowledge and skills (Cockerill, 1989; Howard & Bray, 1988; Stewart & Stewart, 1982; Woodruffe, 1990), and contextually sensitive personality traits (Barrick & Mount, 1991; Hesketh & Robertson, 1993; Spencer & Spencer, 1993). An integrated Competency-SST view on predicting future managerial success raises the following issues:

- (1) Future success of an employee is relative to a specific future job (the context in which future potential is expected to unfold must be specified).
- (2) The future role will demand performance from the employee that is more difficult than that which is currently required for success.
- (3) Predicting future performance requires assessing mental processing capacity and personality traits and requisite competencies (future role demands expressed as competencies).

It is important to acknowledge that judgements about future job successes are subjective ascriptions rather than objective truths, and carry with them possibilities of error (Shirley and Wheeler, 1995). Equally, it is imperative to define job success closely, and to investigate what contextual variables - apart from cognition, personality and competency variables - might influence future job success.

6 Job success factors

6.1 *Defining job success*

Seligman (1994) contends that job or occupational success has typically been assessed by measuring some combination of individual satisfaction and performance. O'Driscoll et al. (1991) distinguish between effective managers and successful managers. Success is defined as a combination of quality and quantity of performance within the unit for which the manager has responsibility. Cockerill (1993) extends this logic to the success of the unit, and he measures managerial success through unit performance (e.g. quality of products, team climate, the ability to gain and keep the resources needed to operate).

The criterion measure for job success must include a series of observations of the manager's actual job behaviour by individuals capable of judging the manager's accomplishment of the activities deemed necessary (Cascio, 1991). The overall aim is to determine psychologically meaningful dimensions of managerial performance to aid in understanding the complex web of interrelationships that exist between job behaviours and organisational performance measures (e.g. promotion rates).

In agreement with Cascio (1991), O'Driscoll et al. (1991) define job success as rapid promotion of an individual within the organisation. For the purposes of this study, this definition will be used, as it encapsulates the performance or effectiveness domain, but adds a further dimension of networking (socialising, politicking and interacting with opinion leaders) (O'Driscoll, et al 1991).

6.2 *Factors affecting job success*

The meaning of job success has been explored in some depth. Considerable research has focused not only on defining job success, but also on identifying factors that have an impact on job success. Four general factors have been identified that influence job success (O'Neil, Ohlde, Tollefson, Barke, Piggott &

Watts, 1980). These include familial factors (family functioning and birth order), socioeconomic factors (socioeconomic status and environment), gender, and individual factors (personality, abilities, race and cultural background, and competencies).

6.2.1 Familial factors

Lopez (1989) found a negative correlation between the amount of intra-family conflict in the family of origin and college students' adjustment to college. Career indecisiveness also seems to be related to family background - students from families with moderate levels of cohesiveness had the least indecisiveness (Lopez, 1989). Birth order is also identified by Seligman (1994) as having an impact on job success - firstborns tend to be high achievers in structured occupations.

6.2.2 Socioeconomic factors

6.2.2.1 Environment

The environment influences people's exposure to jobs and the settings in which they feel comfortable (Seligman, 1994). It was noted that people from small towns tended to have limited occupational information, to establish a narrow range of options for themselves, and to select jobs that did not involve extensive stimulation or contact with people (Seligman, 1994).

6.2.2.2 Socioeconomic status

In general, the higher people's socioeconomic origins, the higher their aspirations (Seligman, 1994). This assertion, however, fails to explain adequately the reasons for career achievement of many from lower socioeconomic environments.

6.2.3 Gender

Blake (1977) investigated the impact of gender stereotypes on the judgement of fair pay, and found some empirical evidence to support the hypothesis that males earn more than females for similar work done as a result of gender stereotypes. Seligman (1994) found that in the USA, full-time female employees earn 34% less than their male counterparts. The prevailing corporate culture dominates and determines women's behaviour, as well as that of men (Maddock & Parkin, 1996), and attitudes towards each other constitute a gender culture peculiar to each work environment. Maddock and Parkin (1996) further argue that these gender dynamics create barriers for women which, in the long run, adversely affect their organisational performance.

The issue of gender influence on career progression and success is summarised by Seligman (1994, p51) as follows: "The potential career development of women, although not fundamentally different than [sic] that of men, is a great deal more complex due to that combination of attitudes, role expectations, behaviors, and sanctions" Although both men and women have to contend with gender role stereotypes, face the challenge of balancing personal and professional aspects of their lives, manage discomfort in non-traditional occupations, and cope with pressures of dual career marriages, women have, in addition, to cope with the prevailing male-dominated corporate environment.

6.2.4 Individual factors

6.2.4.1 *Personality, abilities and competencies*

Factors such as age and changing values (Howard & Bray, 1988), significant events in the life of the employee, such as marriage/divorce, childbirth, (Seligman, 1994), motivation and personal well-being (Howard & Bray) may all influence performance in both the short and the longer term. Given the

magnitude of forms any of the listed influences may assume, it is virtually impossible to control for these in any investigation.

6.2.4.2 Race and cultural background.

This dimension is of particular relevance to South Africa with its large population of previously disadvantaged people (Jenks, 1991). Watkins and Mauer (1994) investigated the performance values of white and black managers in South Africa and found that, except for values regarding the mastery of skills, typical western performance values are virtually absent among black managers. International research clearly indicates that people from minority ethnic backgrounds are generally not as successful in developing careers that lead to high-level positions and economic rewards (Cascio, 1991; Hofstede, 1996). Given the possible influence that race and cultural background may have on performance, these two issues will be carefully monitored in this study.

6.2.5 Other factors

Cascio (1991) lists various factors which may have an impact on individuals' performance (or the measurement thereof). These are: organisational characteristics, leadership, environment, location and safety. Spencer and Spencer (1993) further list phase in the training cycle (acquired level of competence and rewards as further variables having an impact on performance). Woehr and Huffcutt (1994), Spencer & Spencer (1993), and Downing (1994) also list the manner in which performance is measured as having an impact on performance. Downing (1994) found that many behavioural effects, not all of which are desirable, will be shaped by the use of rewards and punishments made contingent on performance management scores.

7 Summary and applications to this research

My aim with this chapter was to explore the managerial work context, ways of describing it, and to elaborate on what managerial success implies.

Understanding the activities performed by managers (Bennis, 1989; Boyatzis, 1982; Kotter, 1990, 1991; Nicholson & West, 1996; Spencer & Spencer, 1993; Zaleznik, 1977); the level at which these activities are performed (Jaques, 1956, 1976, 1989, 1990; Jaques & Cason, 1994; Jaques & Clement, 1991); the environment in which these tasks are performed (Berry, 1980; Cockerill, 1993); and the description of these requirements in an accurate and coherent manner (Cascio, 1991; Cockerill, 1989; Jaques & Clement, 1991; Spencer & Spencer) are prerequisites for the development of any measurement system for predicting future managerial success. The combination of the competency method and stratified systems theory provides a useful method for the description of work, particularly with a view to predicting future success.

It remains important, however, to bear in mind variables which may influence performance, as these could bias the research results. Impacting variables of note are age, experience (phase in the learning cycle), gender, and race group (Blake, 1977; Jenks, 1991; Maddock & Parkin, 1996; Seligman, 1993; Lopez, 1989; Watkins & Mauer, 1994), and these should be borne in mind when sampling and data analysis are done.

In the next chapter methods of predicting future managerial success (potential) are reviewed against the background of the managerial context described in this chapter.

P37 NON-EXISTENT

CHAPTER 3

ASSESSMENT TECHNIQUES THAT PREDICT MANAGERIAL JOB SUCCESS

Given that the managerial task is a multidimensional one, we can expect that to develop the ability to predict successful managerial behaviour is both complex and challenging. One of the challenges lies in the unique problems associated with effectively describing the components of managerial job behaviour; another in developing behaviourally-based predictor measures accurately to forecast managerial effectiveness (Cascio, 1991). Considerable time and effort have been spent in developing methods of predicting behaviour. In this chapter some of the technical aspects of predicting behaviour will be reviewed, together with current methods for assessing (and predicting) managerial success.

1. Technical considerations relating to predicting behaviour

1.1 Developing and employing theoretical models in predicting managerial success

Ghiselli (1956) argues that theoretical models and theories in applied areas such as Industrial Psychology have, as their point of departure, observations and descriptions of the real world. The theory or theories used in explaining phenomena thus have to confront reality when they are put to the applied test. Murray (1986, p.11) elaborates on this view as follows:

A theoretical model starts with variables or units and describes the laws of interaction between these units. It also sets out the boundaries within which the model is valid and the system states within the model in which each of the units interact differently.

Strategies for designing models to predict future managerial success typically follow one of two basic approaches (Robertson & Smith, 1989). Wernimont and Campbell (1968) highlight the difference between these approaches in their discussion of how we may use either **samples** or **signs** of behaviour to predict future managerial success. In the **sample** approach, the product of the managerial role description (using any of the methods described in chapter two, but preferably a combination of Stratified Systems Theory and Competency Frameworks) is used to build assessment exercises that simulate the job. The clearest use of this approach is in the development of work sample tests (Robertson & Kandola, 1982). The sample approach is also often involved in the development of assessment centres.

The alternative to the sample method involves using managerial role description to identify **signs** of behaviour, such as personality variables, cognitive ability (as observed in problem-solving situations). Psychometric tests, particularly ability and personality tests, aptly illustrate the use of this approach.

A third approach would be to integrate the two approaches during an assessment centre (Keil, 1981; Sackett, 1987; Stewart & Stewart, 1982; Woodruffe, 1990).

1.2 Simple theoretical model for predicting managerial effectiveness

As an illustration of the above, and to serve as guide for investigating the issue of the criterion and other technical issues pertaining to predicting behaviour such as validity and reliability, the following simple theoretical model will be considered:

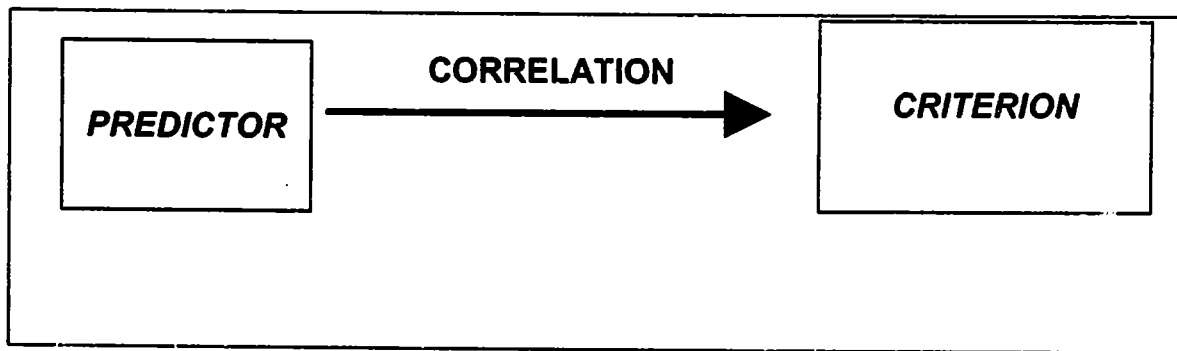


Figure 3.1: Simple theoretical model of predicting managerial effectiveness

This theoretical model assumes that there is a certain predictor (composite) that will correlate well with a criterion. The predictor that is referred to can consist of various techniques or ways of predicting managerial effectiveness. Robertson and Smith (1989) list at least twelve approaches to predicting future managerial effectiveness (and subsequent success):

TABLE 3.1: List of some predictors in use.

Category of Predictor	Specific Type of Predictor
Interviews	<ul style="list-style-type: none"> • unstructured • structured • situational • behavioural event/description
Tests (signs of behaviour)	<ul style="list-style-type: none"> • cognitive ability • perceptual-motor • personality • interests
Tests (samples of behaviour)	<ul style="list-style-type: none"> • work sample • situational • personality • interests
Computer Assisted Tests	<ul style="list-style-type: none"> • standard • algorithm determined
Repertory Grids	-
Biodata and Accomplishment Records	-
Future Autobiography	-
References	-
Graphology	-
Astrology	-
Self-assessment	-
Supervisor/ Peer assessment	-

Source: Robertson, I.T., & Smith, M. (1989). Personnel selection methods. In M. Smith & I.T. Robertson (Eds.), *Advances in selection and assessment*. Chichester: Wiley.

1.3 Characteristics of predictors

Robertson and Smith (1989) refer to the characteristics of predictors as the “evaluative standards” of the chosen predictors. Thus the most objective way

to evaluate the technical characteristics of a measurement procedure (its consistency and predictive efficiency) is to determine the reliability and validity statistics of the predictor(s).

1.3.1 Reliability

Reliability refers to the consistency of measurement of a test. Within the realm of person-job matching, the reliability of criteria, the reliability of judgements of personnel specifications, and the reliability of measurements of individuals should all be carefully considered (Dale, 1996).

Reliability is defined as follows by Cascio (1991):

Reliability of a measurement procedure refers to its freedom from unsystematic errors in measurement.

Reliability, therefore, reflects the consistency with which a certain measurement procedure or instrument measures what is actually happening (Murray, 1986; Seligman, 1994). Anastasi (1988) lists four classes of reliability, expressed in terms of different types of "coefficients", namely (1) stability; (2) equivalence; (3) scorer reliability; and (4) internal consistency.

1.3.1.1 Coefficient of stability (test-retest)

The simplest and most direct estimate of reliability is obtained by administering the same form of measurement procedure to the same group of people on two different occasions (Cascio, 1991; Ghiselli, Campbell & Zedek 1981; Seligman, 1994). The resulting correlation is termed "coefficient of stability".

In this model, error is attributed to random fluctuations in performance across occasions. This type of coefficient is commonly used to estimate the reliability of various types of ratings, for example, performance ratings on different occasions (Cascio, 1991).

1.3.1.2 Coefficient of equivalence

Since any measurement contains only a sample of the possible items from a given content domain, it is theoretically possible to construct a number of parallel forms of the same procedure (each consisting of the same number and difficulty level of problem items, and each yielding non-significant differences in means, variances, and intercorrelations) (Cascio, 1991). The coefficient of equivalence may be used to determine the reliability of, for example, the ratings made by supervisors or interviewers, where two equivalent rating forms are drawn up (Deane, 1996).

1.3.1.3 Coefficient of internal consistency

A measure of reliability may be derived from a single administration of a measurement or test by splitting it into two equivalent halves after it has been administered, thus yielding two scores for each individual (Ghiselli et al. 1981; Seligman, 1994). Scores on the two halves comprising randomly selected items are then computed and correlated, resulting in a reliability estimate of a test half as long as the original. This correlation is then corrected by using the Spearman-Brown prophecy formula which provides an estimate of the reliability of the full test (Ghiselli et al. 1981). The internal consistency coefficient can be used in a variety of measuring situations, but with the availability of computer technology, the modern trend is to make far more use of internal consistency coefficients such as the Kuder-Richardson approaches (Formula 19, Formula 20 and Formula 21 being the most commonly used for tests with dichotomous item formats), and the Cronbach Alpha coefficient for scaled items.

1.3.1.4 Scorer reliability

Errors which can be attributed to the examiner are referred to as scorer variance. Scorer reliability can be estimated by having a sample of ratees

independently rated by two scorers. The two scores for each ratee are then correlated to yield an estimate of scorer reliability (Cascio, 1991). This is not a "real" reliability coefficient since it gives no information on the measuring instrument itself, and simply provides a statement of the likelihood of two raters achieving the same rating.

In summary, different sources of error are accounted for in the different methods used to estimate reliability. Brown (1983) in Cascio (1991, p.141) viewed reliability as a means to an end:

Reliability is not an end in itself but rather a step on the way to a goal. That is, unless these scores are consistent, they cannot be related to other variables with any degree of confidence. Thus reliability places limits on validity, and the crucial question becomes whether a test's reliability is high enough to allow satisfactory validity.

There is no fixed value below which reliability is unacceptable and above which it is satisfactory (Cascio, 1991). However, if a test compares one individual with another, reliability should be above 0,90. Nevertheless, many standardised tests with reliabilities as low as 0,70 may prove to be very useful (Cascio, 1991).

1.3.2 Validity

Validity is viewed as the extent to which a measuring procedure measures what it is designed to measure (Ghiselli et al. 1981). Anastasi (1988, p.131) defines validity as follows:

The validity of a test concerns what a test measures and how well it does so.

Cascio (1991) states that validity is a unitary concept - there are not different kinds of validity, only different kinds of evidence for analysing validity. Validity is not a single value, but an inference from available evidence. Thus, it is the inferences regarding the specific uses of a measuring instrument that are validated, not the instrument itself. Generally, four procedures for evaluating validity are reported in the literature (Anastasi, 1988, Seligman, 1994):

1.3.2.1 Face validity

Face validity indicates whether the test or instrument looks as though it measures what its authors claim it to be assessing (Seligman, 1994).

1.3.2.2 Content validity

Content validity involves an examination by experts to determine whether, in their opinion, the items measure what they purport to measure (Seligman, 1994; Anastasi, 1986).

Although content-related evidence of validity has its limitations, it has undeniably made positive contributions by directing attention to (1) improved domain sampling and job analysis procedures as described in chapter 2, (2) better behaviour measurement, and (3) the role of expert judgement for confirming the fairness of sampling and scoring procedures (Cascio, 1991).

1.3.2.3 Construct validity

Construct validity compares test scores with other measures of the behaviour or knowledge which the scores are supposed to reflect, to determine whether the measuring instrument is really a reasonable measure of that particular characteristic. One type of construct validity that has been reported in the literature (Cascio, 1991; Ghiselli et al. 1981; Seligman, 1994, Smit, 1986) is convergent and discriminant validity. This is measured by what is known as the multi-trait, multi-method approach.

Validating inferences about a construct requires a demonstration that a test measures a specific construct that has been shown to be critical for job performance (Cascio, 1991). Once this has been accomplished, inferences about job performance from test scores are, by logical implication, justified (Binning & Barret, 1989).

1.3.2.4 Criterion-related validity

Criterion-related validity indicates how closely the measurement corresponds to some criterion or standard. Two types of criterion-related validity have been identified: (1) *predictive validity* - how effective the measurement is at anticipating a future outcome; and (2) *concurrent validity* - relationship of test scores to an empirical measure applied at approximately the same time as the test or tests.

It follows that, whenever measures of individual differences are used to predict behaviour, and it is technically feasible, criterion-related evidence is required (Dale, 1996).

The term *criterion-related* emphasises the fact that the fundamental concern is with the relationship between predictor and criterion scores, and not only with predictor scores (Cascio, 1991). For the validation of many measures, some index or rating of job performance is often used. The Pearson product-moment correlation (or some other method such as biserial or rank order, depending on the nature of the data (Smit, 1986)) is the usual index of criterion-related validity since it represents a measure of association between two variables (the measure and the criterion). Assuming that multiple predictors are used in a validity study, and that each predictor accounts for some unique part of the criterion variance, the effect of a linear composite of the predictors is likely to be higher than the effect of the size of any single predictor (Cascio, 1991), and the validity is then expressed as a multiple correlation coefficient.

In this study, the correlation between scores (predictors) and criterion is determined using the Pearson product-moment correlation technique. Further, the effect of a combination of predictor scores is also investigated by means of multiple regression analysis. In each instance, however, the criterion plays an important role (Ghiselli et al. 1981; Smit, 1986), and it is therefore prudent to review the requirements for the criterion measure.

1.4 The concept of the criterion

A predictor can be no better than the criterion used to establish its validity, and adequate and accurate measurement of criteria are fundamental problems in personnel psychology (Cascio, 1991). Landy and Rastegary (1989) have defined the concept of the criterion as a measure of performance. Smit (1986) expands this definition and proposes that it is simply a method for describing the degree to which performance exists or behaviour is expressed.

1.4.1 Coverage of the criterion

Akkerman (1989) argues that the ultimate criterion (that which is intended to be measured) is at least partly subjective. It would therefore be difficult to construct objective measuring instruments to measure this ultimate criterion. This creates the challenge to construct a criterion which is as close as possible to the ultimate criterion, yet is measurable (Akkerman, 1989). Figure 3.2 illustrates the possible relationship between the ultimate criterion and the constructed criterion, and two predictor measures.

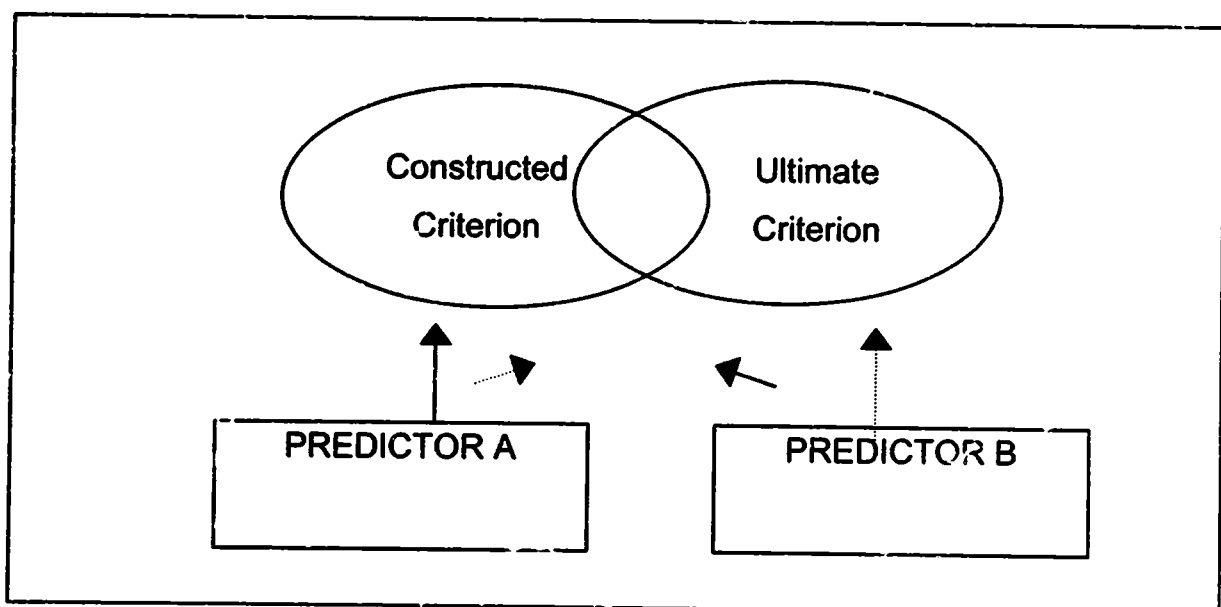


Figure 3.2: Correlations between predictors and constructed and ultimate criterion

The demand to construct measurement instruments that are reliable and valid produces some risk - that of criterion drift (Akkerman, 1989). In figure 3.2, predictor A correlates highly with the constructed criterion, and is very reliable. Predictor B, which is less reliable and correlates poorly with the constructed criterion, actually predicts the ultimate criterion better. In developing a criterion it may therefore be necessary to pay attention to the relationship between the ultimate criterion and the constructed criterion (Akkerman, 1989; Cascio, 1991).

1.4.2 Dimensionality of the criterion

Ghiselli (1956) (in Cascio, 1991) identifies three different types of criterion dimensionality: First, *static dimensionality* refers to those dimensions (of criterion) which remain consistent. Second, *dynamic dimensionality* refers to those dimensions which change over time, becoming either more or less relevant. Third, *individual dimensionality* refers to the fact that people may be considered equally good, but for totally different reasons. In such cases, therefore, a certain set of criteria may be a better representation of the work performance of one person than the same set may be of another (Cascio, 1991). The issue of dimensionality requires special focus to eliminate bias when developing criteria as this may skew the results obtained from a correlational study between predictor and criterion, and ultimately result in inaccurate conclusions.

In chapter 2 reference was made to Berry's multilevel arc model (figure 2.2, p. 22) which also has a bearing on the dimensionality of criteria. Although Berry's model (Berry, 1980) refers to ecological systems, the underlying theme of behavioural arcs which link contexts and effects is very relevant - it requires that both predictor and criterion must be at the same level of abstraction. This would lead to the conclusion that if scores are used as predictors, the criterion must be nested in the experimental context - if nested anywhere else, incorrect inferences may be drawn.

1.4.3 Criterion development

Murray (1986, p.14) asserts that there are certain steps that should be followed in criterion development, and proposes the following five-step procedure: (1) analyse job needs; (2) develop measures of actual behaviour relevant to expected behaviour as identified in job analysis; (3) identify criterion dimensions underlying such measures; (4) develop reliable measures; (5) determine predictive validity of each independent variable for each one of the criterion measures.

A review by Landy and Rastegary (1989) of 408 studies published in 11 journals revealed that the following were the most frequently used categories:

1.4.3.1 Criterion categories

Ratings

The most frequently used criterion measures are supervisory ratings, which were introduced during the 1930s. Work continued on developing rating scales that resisted some of the common errors, such as bias (Landy & Rastegary, 1989). The results of these efforts were the Behaviourally-Anchored Rating Scale (BARS) (Smith & Kendall, 1963) and the Behavioural Observation Scale (BOS) techniques. The BARS technique is the older and more thoroughly studied of the two procedures, and seems to result in good estimates of important aspects of behaviour in a wide range of settings (Landy & Rastegary, 1989; Stewart & Stewart, 1982). This method of describing and rating behaviour is preferred in assessment centres (Stewart & Stewart, 1982; Woodruffe, 1990).

Objective measures of performance

Traditionally, objective measures have been unattractive for several reasons. First, there are relatively few jobs where an incumbent's performance can be characterised using an objective measure of performance that is not trivial (Landy & Rastegary, 1989). In addition, most jobs require interaction among

workers and no worker is uniquely responsible for production. The advent of computer-controlled processes and tolerance measurement have eased the difficulty of developing objective output measures. One example is modern switchboards which measure, inter alia, number of rings before answered, accuracy in transferring calls, etc. - all of which may serve as objective criteria of job performance. Nevertheless, for many jobs the possibility of identifying objective measures of performance will never be realised.

Trainability and promotability

Cascio (1991) lists a number of possible criteria which may be categorised in the trainability or promotability domain. These are (Cascio 1991, p.52):

- time to reach a standard of performance
- rate of salary increase
- number of promotions in a specified time period
- length of time between promotions

These are closely related to the criteria Murray (1986) identifies for use in determining the validity of assessment centres, which include annual merit or performance ratings, salary increases, and number of promotions. What is lacking, however, is the use of job evaluation outputs, such as the Hay System's points.

Ancillary measures

Landy and Rastegary (1939) identify a number of ancillary measures that may be used as criteria. These include absences, turnover, accidents, knowledge tests, and hands-on measures (criterion work-sample tests).

1.4.4 Evaluating the criterion

Cascio (1991) argues that, apart from addressing issues such as the problems of reliability of performance and its observation, job performance multi-dimensionality and intra-individual contributions to criterion performance, criteria have to be measured against the following: (1) *relevance* - the principal requirement of any criterion is its judged relevance (it must be logically related to the conceptual criterion); (2) *sensitivity* - the criterion measure must be sensitive and must discriminate between effective and ineffective behaviour; (3) *practicality* - the criterion should be practical and administratively executable (Cascio, 1991). These issues are important considerations when developing a criterion, or when planning a validation study.

1.4.5 Criteria of managerial success

Landy and Rastegary (1989) reviewed 408 studies and found that only twenty-eight of them fell in the category of traditional criterion-related validation. If there were no reason to be concerned with the changing nature of predictors, criteria, jobs or theories of work performance, then the absence of criterion-related validity studies would not present a problem. A number of possible explanations for the drastic reduction in published criterion-related validity studies are presented by Landy and Rastegary (1989). These are: (a) threat of litigation, (b) editorial policies, and (c) employee tenure and promotion issues,. Although many predictors may be flawed in some way (Akkerman, 1989), the need exists to *rediscover the lost art of predictor development and empirical validation* ... (Landy and Rastegary, 1989, p63. To this end, Akkerman (1989) presented a simple graphic model of the relations between predictors, criteria and theoretical constructs (Figure 3.3).

The literature reviewed in chapter 2 generally emphasises managerial actions and behaviours in optimising outcomes. Judging this optimising behaviour can only be done on rational grounds (Keil, 1981; Stewart & Stewart, 1982; Woodruffe, 1990), which implies that informed, expert opinion is needed to

specify the full range of managerial behaviours relevant to the constructed criterion.

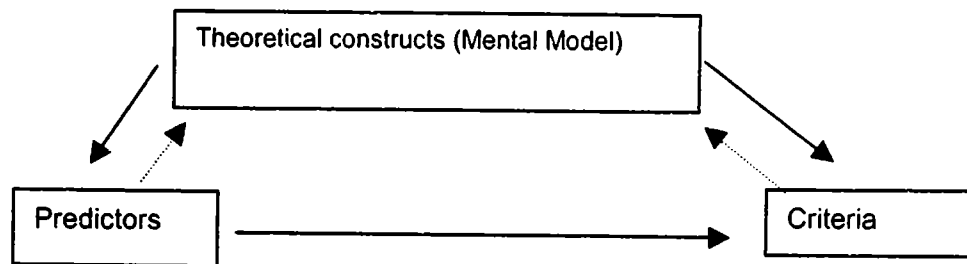


Figure 3.3: Relationships between predictors, criteria and theoretical constructs

Cascio (1991) examines various criteria used in managerial prediction studies and found that global measures, such as supervisory rankings of total managerial effectiveness, salary, or changes in organisational level have several advantages. In the case of rankings, test-retest and inter-rater reliabilities tend to be high. Salary changes, or changes in organisational level, encompass a broad sample of second-order behaviours, such as political network building, alliances and use of power (formal or informal). Also the manager is compared directly with his peers.

It has been argued, however, that these global measures or ratings of success are flawed (Akkerman, 1989; Cascio, 1991), in that global measures are contaminated by external variables other than job performance, and it is therefore impossible to determine how much variance is explained by actual job performance.

Nevertheless, in an assessment centre type of evaluation, many of the behaviours which are rated, particularly at the upper scale levels, relate to intra- and extra-organisational awareness, persuasion (network building), complex problem solving, etc. (Stewart & Stewart, 1982; Woodruffe, 1990). These skills may also be used to build political networks within the organisation, as a bridge to achieving success. Although flawed, global ratings

of success can be used as criteria of managerial success, provided that due attention is paid to the type of predictor used and the design of the study.

2. Instruments for predicting managerial success

2.1 Cognitive ability tests

Cascio (1991) distinguished between *tests* which have correct/incorrect answers, and *inventories* which do not have correct or incorrect answers (such as work sample measures, etc.). In the case of tests, the magnitude of the total score can be interpreted to indicate lesser or greater amounts of ability. In this category, measures such as general intelligence; verbal, non-verbal, numerical and spatial relations ability; perceptual speed and accuracy; etc. are considered. A review of the related literature reveals sharply divided views on the use of cognitive ability tests: The first school argues that cognitive ability tests have no bearing on ultimate job success (McClelland, 1973). The basis of this argument is that intelligence tests at most predict grades at school which, in turn, have shown insignificant correlation with job success. The second school (Barret & Depinet, 1991; Cascio, 1991; Hesketh & Robertson, 1993; Hunter, 1986), which supports the notion that cognitive tests predict job success, is, however, sharply divided on whether tests of general abilities or specific abilities are the better predictors of job success.

Hunter (1986) found that general cognitive ability predicts training success better than specific cognitive aptitudes. This is consistent with the data on knowledge (job knowledge) which shows that the main reason for the validity of general cognitive ability is that it predicts learning (McClelland, 1971). It is also consistent with the hypothesis that general cognitive ability predicts performance over and beyond its prediction of job knowledge because it measures the ability to innovate and prioritise when dealing with situations that deviate from those encountered in prior training (Hunter, 1986). Hunter (1986, p359) further states:

this means that general cognitive ability is the best basis for job selection for all jobs where training follows hiring, which include nearly all entry-level jobs.

Hesketh and Robertson (1993) report that when corrections are made for lack of reliability in the criterion, restriction in range, and sample size, variations in validity coefficients for tests of general ability that were evident between different subgroups or different organisations tended to disappear. This finding greatly enhances the arguments of validity generalisation for tests of general ability (the findings of Hunter's research are summarised in figure 3.4).

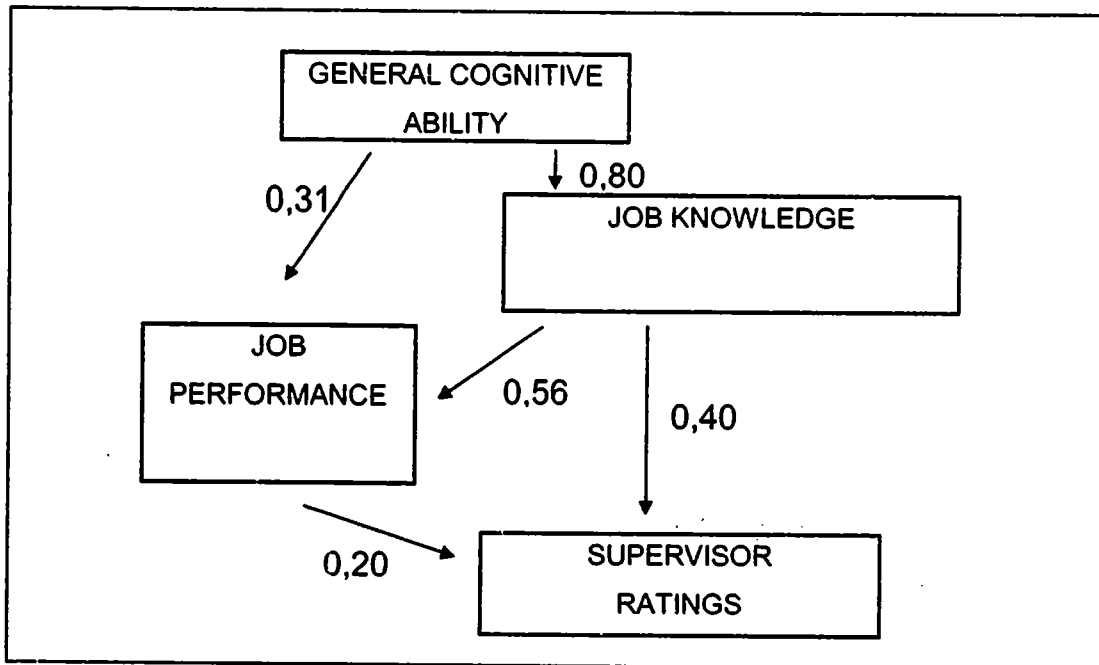


Figure 3.4: Relationships between cognitive ability, job knowledge, job performance, and supervisor ratings

Hesketh and Robertson (1993), conversely, argue that specific abilities contribute to a more complete understanding of performance, albeit not as strongly as general ability. They suggest, further, that the comparative advantage of general ability over specific abilities is related to the level of generality of the criterion used.

In summary, the debate about whether to use measures of specific or general cognitive abilities is, to some extent, dictated by practical considerations, in particular the choice of criterion. Further, Hunter's (1986) research indicates that even for the simplest occupations, the validity of measures of general

cognitive abilities is 0.27, which is high enough to yield a substantial improvement in work force productivity.

2.2 Objective personality inventories

Cascio (1991) reports that reviews of results obtained with personality and interest inventories in forecasting managerial effectiveness have generally been negative. Hesketh and Robertson (1993) argue that this is a result of the earlier approach to using personality inventories in predicting managerial success, which was typified by an atheoretical approach with a heavy emphasis on empiricism. This atheoretical approach was typified by meta-analyses carried out across all scales for global measures of performance, irrespective of whether there was a theoretical reason to expect that the particular scale would relate to specific outcome measures.

Tett, Jackson and Rothstein (1991) advocate caution in the use of personality measures to predict managerial success, particularly regarding the way they are matched to performance criteria. It is imperative that the personality traits used must be selected on the basis of conceptual linkages with performance criteria based on thorough job analyses. In a meta-analytic study conducted by Tett et al. (1991) it was found that after correcting for unreliability in criterion and predictor measurement the correlation between job success and personality variables was 0.24. However, the correlations were found to be stronger:

- in confirmatory versus exploratory studies
- where job analysis was used to select predictors
- for recruits versus incumbents
- in military versus civilian samples
- in published articles versus doctoral dissertations

(Tett et al. 1991, p.724).

Further, examination of behavioural dimensions of job performance, rather than a global rating of job performance, revealed that some of the highest correlations are to be found between personality-performance links that are theoretically most similar (Cascio, 1991; Tett et al. 1991). Thus, any parsimony offered by the use of general substantive frameworks is obtained at the cost of diminished predictive power in relating particular personality traits to specific types of performance based on careful job analysis. In sum, using personality measures in predicting future managerial success may, under certain conditions, increase the predictive validity of the process, notably when personality measures are chosen on the basis of thorough job and organisational analysis, and dimensions are linked to specific performance requirements.

2.3 Interviews

Initial research has revealed little support for the interview technique as a method for predicting future managerial success. Reilly and Singer (1996) show that 12 validity studies reflect coefficients of an average of 0.19. Hunter and Hunter (1984) conducted a meta-analysis which yielded a validity coefficient of 0.14 when the interview process was used to predict supervisory ratings.

Ulrich and Trumbo (1965) report that validity coefficients of less than 0.50 for interviews are the rule, and validities of less than 0.30 are common. They conclude that the interview technique is deficient in terms of both reliability and validity.

Protagonists, however, have argued that restriction in range has caused poor validity coefficients. The restriction is caused by the validity coefficient being calculated from a sample of successful applicants only (Cook, 1988). Research conducted by Hunter and Hunter (1984) with correction for restriction in range still found a shift from $r=0.14$ to only $r=0.22$.

Research on situational interviews (Latham & Saari, 1984) has revealed validity coefficients of up to 0,35. Situational interviews use the results of systematic job analyses to produce job-related incidents. which are then turned into interview questions in which people are asked how they would behave in a given situation. It may be, however, that in this particular situation the interviews function as surrogate work-sample tests, or an impure form of a verbal intelligence test (Robertson and Smith, 1989; Scriven 1996).

Scriven (1996) developed an interview technique based on the above principles. The person being assessed is given a set of challenging tasks, which steadily increase in complexity. The interviewee is then led through these challenges by a series of questions, asked in a pre-set order. Scriven (1996, p.77) reports the following findings of a follow-up study conducted in a large multinational company:

The long term potential of recruits to the company was assessed at selection. Results were not disclosed. Between eight and ten years later, current assessments of the remaining individuals were obtained. These were based on summaries of performance, progress, and potential as assessed by line managers. Of a total of 976 managers, the interview technique accurately predicted success in 72.54% cases (708 managers).

In sum, it would appear that the use of a job-referenced, highly structured interview may yield positive results in predicting future managerial success. Also, if combined with other predictors of managerial success, the interview technique may contribute to a clear, comprehensive picture of the assessee.

2.4 Biographical information and the accomplishment record

Specifically selected biographical information has been used widely in predicting managerial success and has as its base the assumption that past behavior best predicts future behaviour. Cascio (1991) reports that in one review (seven studies, n=2284) where personal history data were used to forecast success in management, the average validity coefficient was 0,38. Campbell (1970) in Cascio (1991, p.320) concludes:

What is impressive is that indicators of past successes and accomplishments can be utilized in an objective way to identify persons with differing odds of being successful over the long term in their management career.

A recently developed variant of the biographical information approach - the accomplishment record - uses self-reported descriptions of past accomplishments in job-related behavioural dimensions (Robertson & Smith, 1989). Ghiselli (1966) and Reilly and Chao (1982) report that biographical data showed the highest predictive validity when compared to other predictors. However, Reilly and Chao (1982) concede that the validity of biographical predictions tends to diminish over time. In South Africa, however, using an accomplishment record to predict future managerial success may perpetuate the adverse effects of discrimination against previously disadvantaged race groups, for whom opportunities to excel were not readily available (Scriven, 1996).

2.5 Work sample tests and assessment centres

Cascio (1991) treats the Assessment Centre Method and work samples of managerial performance as separate approaches to predicting future managerial success. However, Murray, (1986), Robertson and Smith, (1989), Schilbach (1983), Stewart and Stewart, (1982), and Woodruffe (1990) categorise both as simulation-based assessments. It has been observed that many of the work sample tests, such as the Business Game (Schilbach, 1983), In-Basket Exercise (Stewart & Stewart, 1982; Woodruffe, 1990) and Leaderless Group discussion, are all used as part of the Assessment Centre Method, depending on the construction and purpose of an Assessment Centre (Schilbach, 1983).

2.5.1 Work samples tests

Landy and Rastegary (1989) and Payne (1995) refer to the work samples approach as a hands-on measurement of maximum performance. Work

sample tests differ from standardised paper-and-pencil tests in that they employ *samples* of behaviour to predict future behaviour rather than *signs* or indicators of predispositions to behave in a certain way (Algera & Greuter, 1989; Wernimont & Campbell, 1968). Subjects are usually asked to perform a very specific set of tasks extracted from a job and performed at a work station specifically designed for the purpose of collecting the predictor data (Landy & Rastegary (1989). The objective is to assess the ability to do rather than know (Cascio, 1991).

By this rationale, work sample tests that are based on sound job analyses may yield high predictive validity, with little adverse impact on disadvantaged groups (Cascio, 1991; Feltham & Smith, 1993; Payne, 1995). This view was supported by meta-analysis conducted by Hunter and Hunter (1984). It was found that when work samples were used as a basis for promotion, their average validity was 0,54. Ballentine (1989) ranked different selection methods and found that work samples yielded the highest range of mean validity coefficients. These are shown in table 3.2.

Table 3.2: Selection methods rank ordered

SELECTION METHOD	APPROXIMATE SAMPLE SIZE	RANGE OF MEAN VALIDITY COEFFICIENTS
WORK SAMPLE	3000+	0.38-0.54
ABILITY COMPOSITE	30000+	0.53
ASSESSMENT CENTRE	15000+	0.41-0.43
SUPERVISORY/PEER EVALUATION	8000+	0.43
GENERAL MENTAL ABILITY	30000+	0.25-0.45
BIODATA/ACCOMPLISHMENT RECORD	5000+	0.24-0.38
REFERENCES	5000+	0.17-0.26
INTERVIEWS	2500+	0.14-0.35
PERSONALITY ASSESSMENT	20000+	0.15
INTEREST ASSESSMENT	1500+	0.1
SELF-ASSESSMENT	500+	0.15
HANDWRITING	Small	0

Source: Woodruffe, C. (1990) *Assessment Centres: Identifying and developing competence*. London: Institute of Personnel Management.

2.5.1.1 Frequently used work sample tests

The In-Basket Test

This is an individual situational test designed to simulate important aspects of a manager's job. Beatty and Schneier (1977, p.143) describe the In-Basket as follows:

The candidate is usually faced with an accumulation of memos, reports, notes of incoming telephone calls, letters, and other materials typically collected in the in-basket of the job incumbent. The candidate is asked to dispose of these materials in the most appropriate manner by writing letters, notes, delegating, self-reminders, agendas for meetings, etc.

Kesselman, Lopez and Lopez (1982) report a validity coefficient of 0.31 for an In-Basket developed and validated by them. Turnage and Muchinsky (1984) in Cascio (1991) found that the In-Basket predicted career potential (0,25), but not job performance rankings or appraisals. It could be argued that the appeal of this test lies in its high face validity and ease of administration (both administering and scoring).

Business games

Beatty and Schneier (1977, p.224) describe management games as follows:

Management games usually require participants to solve problems either competitively or co-operatively. Stock market tasks, manufacturing exercises, merger negotiations, or acquisitions are common.

Computer simulations are often used (ACF Consultants, 1996) to create complex problems. Decisions are analysed by the program, using a suite of advanced computer models. A set of comprehensive printed reports are produced on which the next set of decisions must be based. Streufert (1988) in Cascio (1991) reports validities ranging from 0,50 to 0,67 between objective performance measures (computer-scored simulation results) and self-report indicators of success consisting of corrected measure of income at age, job level at age, number of people supervised, and number of promotions during the last ten years.

Leaderless group discussion

Beatty and Schneier (1977, p.224) define the leaderless group discussion as follows:

The participants in leaderless group discussions are usually given a discussion question and instructed to arrive at a group decision. No one in the group is designated as its leader.

Bass (1954) in Cascio (1991) reports a median correlation of 0,38 between leaderless group discussions and performance ratings of student leaders, shipyard foremen, administrative trainees, foreign service administrators, civil service administrators, and oil refinery administrators.

Analytical exercise

Participants are required to conduct an in-depth analysis of a complex problem. The findings are presented to a group which evaluates the quality of the analysis (Schilbach, 1983).

Interview exercise

Participants are given a problem to solve which requires a one-on-one or one-on-two discussion.

Performance appraisal results

It can be argued that performance appraisal/measurement results form part of the individual's biographical information or accomplishment record¹. However, this information is frequently used in isolation to determine potential for promotion (Reilly & Singer, 1996). Downing (1994) lists many variables, such as interpersonal relationships, training, work experience, etc. which have an impact on the overall performance rating, but have no relation to actual potential or performance. Reilly and Singer (1996) report that when performance appraisal scores are used in promotions in an inconsistent manner, this gives rise to job dissatisfaction.

¹ See chapter 3, paragraph 2.4

2.5.2 The Assessment Centre method

Cascio (1991, p.327) defines the assessment centre as a “method which brings together many of the instruments and techniques of managerial selection.” By using multiple assessment techniques, by standardising methods of making inferences from such techniques, and by pooling judgements of multiple assessors in rating behaviour, the likelihood of successfully predicting future performance is enhanced considerably (Adler, 1987; Cascio, 1991; Payne, 1995; Stewart & Stewart, 1982). Both Adler (1987) and Woodruffe (1990) define an assessment centre in terms of the characteristics it derive from its basic elements, which are deemed to be:

- multiple assessment techniques that include behavioural simulations or situational exercises which are designed to parallel situations occurring in the work environment
- a set of behavioural competencies, qualities, attributes and characteristics developed through job analysis techniques
- a set of competencies on which participants are evaluated through multiple assessment techniques
- specially trained, multiple assessors who observe, document and integrate behavioural evidence on the predetermined dimensions
- final judgements derived through pooling of evaluations across assessors, and assessment techniques

Spangenberg (1991, p29) describes an assessment centre as follows:

An assessment centre consists of a standardised evaluation of behaviour based on multiple inputs. Multiple trained observers and techniques are used. Judgements about behaviour are made, in major part, from specifically developed simulations. These judgements are pooled in a meeting among the assessors or by a statistical integration process. In a data integration discussion, comprehensive accounts of behaviour, and

often ratings of it, are pooled. The discussion results in evaluations of the performance of the assesseees on the (competency) dimensions which the assessment centre is designed to measure.

Standards have been set by the American Psychological Association (APA), to which all assessment centres should conform (Schilbach, 1983; Spangenberg, 1991). According to the APA, the following are the essential criteria of an assessment centre (Spangenberg, 1991, p30):

- A job analysis of relevant behaviours must be conducted to determine the dimensions, attributes, characteristics, qualities, skills, abilities, motivation knowledge or tasks that are necessary for effective job performance and to identify what should be evaluated by the assessment centre.
- Behavioural observations by assessors must be classified into meaningful and relevant categories, such as competency dimensions, attributes, characteristics, aptitudes, qualities, skills, abilities, knowledge or tasks.
- Multiple assessment techniques must be used.
- The assessment techniques must include sufficient job-related simulations to allow multiple opportunities to observe the assessee's behaviour relative to each competency dimension being assessed.
- Multiple assessors must be used for each assessee.
- Assessors must receive thorough training and demonstrate competent performance.
- Some systematic procedure must be employed by assessors to record behavioural observations.
- Assessors must prepare a report or record of the observations.
- The final assessment result must be based on a pooling of information from assessors.

2.5.2.1 Typical assessment centre composition

Competencies

The competency dimensions are derived by finding behaviours related to job success through job analysis techniques², clustering these together and giving the clusters of behaviours appropriate labels (Woodruffe, 1990). Two types of competency frameworks can be used in an assessment centre. First, a generic management competency dimension, such as the list compiled by the Henley Management College and reported by Dulewicz (1989). For example, middle management competencies, according to Dulewicz (1989), include the following:

Table 3.3: Generic middle management competencies

<i>Intellectual</i>	Strategic perspective Analysis and judgement Planning and organising
<i>Interpersonal</i>	Managing staff Persuasiveness Assertiveness and decisiveness Interpersonal sensitivity Oral communication
<i>Adaptability</i>	Adaptability and resilience
<i>Results-orientation</i>	Energy and initiative Achievement motivation Business sense

² Job analysis techniques and competencies were reviewed in chapter 2.

Various other ready-made lists of competencies exist, for example, those published by Schilbach (1983), Thornton and Byham (1989), and Woodruffe (1990). Stewart and Stewart (1982) and Woodruffe (1990), however, argue in favour of the use of organisation-specific competency dimensions derived through a thorough job analysis process. Benefits listed are (1) ownership (Woodruffe, 1990), (2) accurate, job-referenced competency dimensions which enhance face and content validity of the assessment centre (Schilbach, 1983), and (3) cultural compatibility with the organisation (Greatrex & Phillips, 1989 p.8) which means that the *behaviours listed within clusters are cultural artefacts of the organisation and are expressed in terms of the language of the organisation*. However, according to the guidelines and ethical considerations for assessment centre operations, only assessment centres based on thorough job analyses are acceptable.

Simulation exercises

Simulation exercises are at the core of an assessment centre, and are based on the typical situations faced by people in the job. The choice of simulations should depend solely on the findings of the job analysis, subject to practical constraints (Spangenberg, 1991; Woodruffe, 1990). Further, all competency dimensions should be measured in at least two different simulation exercises (Adler, 1987; Stewart & Stewart, 1982; Thornton and Byham, 1982).

Thornton and Byham (1982) reviewed 500 assessment centres and found the In-Basket (95%) closely followed by the Assigned-role Leaderless Group Discussion (85%) the most frequently used simulation exercises. The Background Interview (5%) and Paper-and-pencil test (1%) were the least frequently used exercises in assessment centres (see table 3.4).

Table 3.4: Frequency of use of simulation exercises in assessment centres

ASSESSMENT SIMULATIONS	FREQUENCY OF USE (%)
In-basket	95%
Assigned-role leaderless group discussion	85%
Interview simulation	75%
Non-assigned-role leaderless group discussion	45%
Analytical exercise	35%
Management games	10%
Background interview/accomplishment record	5%
Paper-and-pencil tests (cognitive and objective personality questionnaires)	1%

Crookes (in Moses & Byham, 1977, p.74.) asserts that, although in some assessment centres no paper-and-pencil test other than the in-basket is used, the use of tests was nevertheless reported:

In others, a general ability test is administered, also, a personality inventory measure of creativity or other special tests might be included. Some programs administer such tests only for research or counselling purposes, and do not include the results in final assessment data; others use them to measure job relevant aptitudes or characteristics not readily measurable in other ways.

Research conducted by Augustyn and Van Wyk (1988) indicates that the use of pen-and-paper tests such as objective personality tests and ability tests in conjunction with an assessment centre should be approached with caution. Only moderate correlations between competency dimensions and personality tests (10 out of 72 correlations were found to be significant) and slightly higher

correlations were found between aptitude measures and competency dimensions ($0,4 < r < 0,59$).

Background interviews³

Most assessment centres include a background interview. The purpose of such an interview is defined by Adler (1987, p.87) as follows:

The background interview is directed at obtaining insights into his (the participant's) personal development up to that time, work objectives, attitudes, social values, scope of interests, interpersonal relationships, idiosyncrasies, etc.

Schilbach (1983) quotes Slevin (1972) who says that the background interview, as a low-tension exercise, also provides the opportunity to participants to communicate in an open manner with members of management.

As an alternative to the interview, participants may be asked to complete a background information form (Schilbach, 1983).

The assessment centre process

The following four steps are clearly discernible during an assessment centre session: (1) observing participants' behaviour, (2) classifying participants' behaviour, (3) rating participants' behaviour, and (4) reporting/feedback of results to participants.

(1) Observing participants' behaviour

Trained observers, usually line managers, observe participants' behaviour in the various simulation exercises. Two observers per participant are rotated to

³ Refer to chapter 3, paragraph 2.3 for a detailed discussion on the interview technique.

ensure that they observe different competency dimensions in different exercises. This is done to limit bias and prejudice. Notes are made of the observed behaviour.

(2) Classifying participants' behaviour

The documented observed behaviour is classified under the competency dimension headings. This is a crucial step in the assessment centre process, as the evidence per competency dimension will be judged to determine the individuals' levels of competence.

(3) Rating participants' behaviour

During this phase, observers and administrators (staff charged with the running of the centre, overseeing the participants and observers, and generally exercising quality control of the assessment process) convene to integrate the classified observed behaviour. Typically, a behaviourally-anchored rating scale is used to determine the level to which participants' competency dimensions are developed.

(4) Reporting of results

During this phase, feedback on the results is given to participants, either by observers or administrators, and reports are compiled for future reference.

2.5.2.2 Assessment centre validity

Gaugler, Rosenthal, Thornton and Bentson (1987) found that the median corrected correlation coefficient for predicting job potential with an assessment centre is 0.53, and for predicting supervisors' ratings of performance the correlation coefficient is 0.36. Tzinier, Meir, Dahan and Birati (1994) found that

assessment centre predictive validities are higher when predicting potential for high level-jobs than for lower-level jobs.

Hinrichs (1977) reports that the predictive validity of an assessment centre after one year was 0,26. After eight years this increased to 0,45, which can be explained by the fact that assessment centres measure longer-term administrative and organisational performance dimensions needed for success at higher levels (Tzinier et al. 1994). McEvoy and Beatty (1989) in Cascio (1991) report similar increases in predictive validities for the overall assessment rating (0,19 and 0,39) over two and seven year periods, respectively.

Howard and Bray (1988) report findings of an investigation into the determinants of assessment ratings for white and black females, as well as the relationship of the assessment dimensions to performance effectiveness one to six years after assessment. The predictive validities of the assessment and subsequent job performance ratings were 0,41 (whites) and 0,35 (blacks), and the predictive validities of assessment ratings and subsequent ratings of potential for advancement were 0.59 (whites) and 0.54 (blacks). Regression equations for the two groups did not differ significantly, which indicates little, if any, adverse impact against minorities in this case.

2.6 Conclusion and application to this study

In this chapter attention has been given to the question of the criterion: although global measures such as supervisory rankings of total managerial effectiveness, change in salary or change in organisational level (promotions) have been criticised (Akkerman, 1989) they still hold several advantages - they are *relevant, sensitive, and practical*.

As illustrated by the literature review in this chapter, a number of measurement instruments are available which can be used to predict future managerial success - with varying degrees of success (reliability and validity).

Chapter 2 and 3 (literature review) have aided in the planning of the preliminary research project. They have further assisted in generating a sound theoretical base from which to draw conclusions, and to make recommendations regarding the manner in which the empirical study may be designed. They have also fulfilled the first theoretical objective of this study - to review the managerial work context, methods or models for describing managerial work complexity, technical considerations for measuring instruments, and techniques available which can be used to predict managerial success.

The following chapter will report on the preliminary investigation, the results and the provisional conclusions drawn.

CHAPTER 4

THE DEVELOPMENT OF A CONCEPTUAL MODEL FOR PREDICTING MANAGERIAL JOB SUCCESS

This chapter describes the process of designing a conceptual model to predict job success within the junior managerial cohort of a large financial institution. The conceptual model is presented and its various components described.

1. Organisational context

1.1 Implications of managerial role requirements on people profiles

In chapter 2, I argued that the dynamic external environment requires that managers be able to cross the imaginary line between traditional “leadership” behaviours and typical “managerial” behaviours. As a result, the existing understanding of work at the junior managerial level, and the associated person profiles based on one or other theoretical view, have become invalid and it has become necessary to build a new model specifying the characteristics of the “new generation manager” companies now require.

1.2 Evaluating the impact of the managerial role requirements on the person profile

1.2.1 Change agent role

Environmental and subsequent organisational change is taking place more and more rapidly, placing considerable demands on employees, and more so on managers (Coyne, Hall & Clifford, 1997). Nicolson and West (1996)

suggest that this rapid change requires increasing specialist knowledge from managers about the organisation, markets and core competence. The need for increased knowledge, and the issue of global competitiveness (Corporate Leadership Council, 1999), clearly raise the level of complexity of managerial work in that managers must facilitate continuous change. This is highlighted by O'Meara (undated) who asserts: *"Quantitative and qualitative changes will result in new levels of complexity requiring new approaches and new thinking."*

The heightened interaction (Cullen, 1983; O'Meara, undated) demanded by the change facilitator role also requires a stronger "people orientation" and well-developed interpersonal skills. These are particularly relevant in the processes of integrating activities across functions (Cockerill, 1993), attaining collaboration within units and extra-organisational stakeholders (O'Meara, undated), and creating or building confidence in the strategic intent of the unit (Cockerill, 1993).

In summary, managers are required to have the ability to deal with increased work complexity and greater high intensity interpersonal/intergroup interaction as a result of their change agent role (Corporate Leadership Council, 1998).

1.2.2 Learning facilitator role

The dynamic, ever-changing macroenvironment which dictates that organisations should be flexible and adaptive, with fluid organisational structures (Cockerill, 1993) also dictates that managers should be quick at unlearning redundant practices, knowledge and skills, and equally quick at learning new requisite practices. Two implications can be identified here. First, this places demands on managers' ability to unlearn redundant knowledge and skills, and to acquire new knowledge and skills. Second, there is the speed at which they must achieve this. The relationship between cognitive ability and academic success - or learning ability - has been well documented (Barret & Depinet, 1991; Hesketh & Robertson, 1993; Hunter, 1986; Jaques & Cason, 1994; McClelland, 1973). Without delving into the detail of what these authors

say, it is clear that the speed at which managers learn and the breadth and depth to which new competencies are mastered require increased cognitive ability from them (Chambers, Foulon, Handfield-Jones, Hankin & Michaels, 1998).

Also, the learning facilitator role taxes managers' abilities to facilitate learning among peers and subordinates. Employees' competence has to be increased through learning at both individual (Fink, 1996) and group level (Belbin, 1996). Accordingly, effective interpersonal and group (team) skills are becoming increasingly important.

Thus while additional demands are being made of managers' cognitive abilities if they are to master new competencies at increased levels of complexity, they are also under pressure to demonstrate the necessary interpersonal orientation accompanied by effective group (team) process skills.

1.2.3 Teamwork and cooperation role

Some elements of the above role and its impact on managers have been dealt with in the "Change Manager" and "Learning Facilitator" sections. In addition, Fink (1996) and Jaques (1990) argue that the net result of fluid structures should be increased autonomy and decision making for individuals and individuals in teams, and the empowerment of those individuals and teams to achieve the desired outputs. Conger, (1998, p.85) summarises the impact as follows:

Gone are the command-and-control days of executives managing by decree. Today businesses are run largely by cross-functional teams of peers populated by baby boomers and their Generation X offspring, who show little tolerance for unquestioned authority. Electronic communication and globalization have further eroded the traditional hierarchy, as ideas and people flow more freely than ever around organizations and as decisions get made closer to the markets. These fundamental changes, more than a decade in the making but now firmly part of the economic landscape

essentially come down to this: work today gets done in an environment where people don't just ask What to do? but Why should I do it?

Ensuring effective teamwork and cooperation means persuading others to follow a particular plan. Effective persuasion is about testing and revising ideas in concert with those of colleagues' concerns and needs (Conger, 1998).

To conclude, therefore: managers need competence in aligning the work done by others with the desired organisational outputs or objectives. This requires effective persuasion, which is a negotiating and learning process through which a manager leads colleagues to a shared solution of the problem

1.2.4 Exploiting organisational core competence role

Binedell and Nurick (1994) and Coyne, Hall and Clifford (1997) claim that the organisational core competence role is the most important determinant of organisational success. When performing this role, managers direct the firm's strategic focus, identify and manage the sources of competitive advantage, develop the business concept and construct tailored value-delivery systems (Coyne, Hall & Clifford, 1997; Garvin 1998). In the past, these activities were performed by a few senior executives in a company (Jaques, 1989). Applying Jaques's Stratified Systems Theory to this scenario reveals that the complexity of the work increases at lower levels in the hierarchy as a result of the focus on organisational core competence. The net result is that in order to perform well in their jobs, managers must, generally, have higher cognitive abilities to deal with the complexity of work.

1.2.5 Ensuring organisational effectiveness role

Cockerill's (1993) "Systems Model" of organisational unit performance consisting of outputs, climate, adaptability and resource inputs summarises the salient domains of managerial work now required from managers thus:

Delivering on the expected **outputs** requires “doing”-type competencies, such as planning, delegating, and controlling. Ensuring a healthy **climate** and **resource input** management require “interacting”-type competencies such as listening skills, persuasiveness, and team building skills. **Adaptability** requires problem-solving-type competencies such as problem analysis and judgement.

The above analysis highlights a number of new knowledge domains, skills requirements, attributes and abilities required by managers if they are to perform well in the changed managerial work context. However, a framework for the systematic categorisation of these contributors to managerial success is required. This has led to the development of a generic model described below

1.3 Developing a generic model containing variables associated with managerial job success

The implications for the person (job incumbent) specification are clear - the managerial role requirements in a dynamic, changing environment are significantly different from the old profile of a manager. The new profile requires an integration of various personal attributes and abilities (and preferences) with learned (knowledge and skills) competencies.

Based on the role requirements detailed in the previous section, a generic conceptual model was developed to present the various attributes, abilities and learned competencies and to provide a means of predicting future job success.

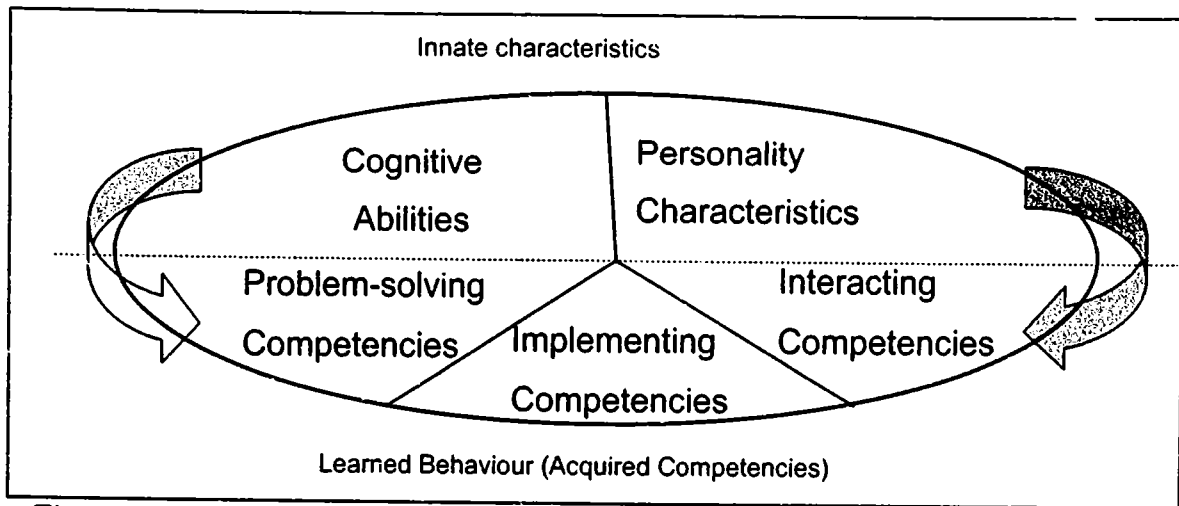


Figure 4.1: Generic model of variables associated with high performing managers

The model distinguishes between innate characteristics and learned behaviours or competencies. Innate characteristics (depicted above the broken line) are further divided into three components – cognitive abilities, personality variables, and team role profile. It can be gleaned from the model that cognitive abilities, which influence, primarily, the development and manifestation of Problem-solving Competencies, are seen, relative to others, as the key determinant of job success. The reasons, as stated before, are the increased complexity of work and the emphasis on learning new skills. The Personality Characteristics block is included because managerial work requires the ability to interact well with other people. The Personality Characteristics component impacts on the development and manifestation of the Interacting cluster of managerial competencies.

The learned behaviours component (below the broken line) is divided into three clusters of managerial-level competencies constructed from the role requirements as reviewed in the literature survey: problem solving, implementing competencies and interacting competencies. In the preceding sections it has been shown that the five components contained in the model

cover most of the variables required to identify, describe and predict managerial success.

This model is used as a point of departure for the specific role-requirement analyses of the jobs in the organisation in which the study was conducted.

2. Job analysis

Interviews were conducted with 20 managers with the aim of determining the organisation-specific managerial role requirements. The generic model presented in figure 4.1 was used as a framework to investigate the specific cognitive abilities, personality characteristics and learned competencies associated with high performing managers in the organisation. A combination of Kelly's Repertory Grid technique (Fransella & Bannister, 1984) and Flanagan's Critical Incidents technique (Flanagan, 1954) was used in the interviews. The following sections briefly present the results of the job analyses, and the specific abilities, personality traits and personal competencies identified

2.1 Required Cognitive abilities

In addition to the complexity of managerial roles and learning as factors impacting on job success, a further factor was identified. One specific job activity - assessing credit risk - requires the incumbent to apply logic and rules, to use arithmetic aptitude to do calculations, and to pay meticulous attention to details such as comparing figures in balance sheets. Reaching a final decision (granting or refusing a loan), however, requires very different thinking processes: the incumbent must integrate all the information (from the various sources) and predict, on the basis of probability, whether it is sound business to grant the loan or refuse it. The outcome of such a decision may be visible only over the longer term of three to five years. The two above-mentioned thinking processes refer to deductive and inductive reasoning ability (Colberg,

Nester & Trattner, 1985). Carnap (1972 in Colberg, Nester and Trattner, 1985) distinguishes as follows between deductive and inductive reasoning (p 682):

In deductive logic, inference leads from a set of premisses to a conclusion just as certain as the premisses If the premisses are true, the conclusion cannot be false. With respect to induction, the situation is completely different. The truth of an induction is never certain. The most we can say is that, with respect to the given premisses, the conclusion has a certain degree of probability.

Thus, in addition to the demand for a high level of fluid and crystallised thinking ability as defined by Cattell (Cattell, 1963), successful managers must also be capable of intricate inductive and deductive reasoning.

2.2 *Required personality characteristics*

2.2.1 *Specific personality characteristics*

Barrick and Mount (1991) investigated the relationship of the “Big Five” (Hesketh & Robertson, 1993; McCrae & Costa, 1989,) personality dimensions (extroversion, emotional stability, agreeableness, conscientiousness, and openness to experience) to three job performance criteria (job proficiency, training proficiency, and promotion rates) for managers (amongst others). Results indicated that extroversion was a valid predictor for success in jobs at managerial level across criterion types. The role requirements of managers in a changing environment, specifically the change agent, learning facilitator and teamwork and cooperation roles, demand a high level of interaction with others, which support Barrick and Mount’s finding.

In the present study, the job analysis (repertory grid interviews) indicated that, in addition to having a more extroverted nature, successful managers are by nature extremely detail conscious, do not procrastinate (have a strong need to complete tasks quickly), and are relatively unemotional (logical) with regard to the decisions they take (“hard-nosed business decisions”). Further, they show an intuitive “feel” for making the right credit decision based on the information presented to them.

Myers and Myers (1980) proposes that the variation in human behaviour (personality) is the result of a few basic, observable differences in mental functioning. These differences concern the way people perceive, and the way in which they make judgements. According to the Myers-Briggs theory, personality is structured by four preferences concerning the use of perception and judgement. These preferences are summarised in table 4.1.

TABLE 4.1: Summary of the Myers-Briggs four personality preferences

<i>Preference for</i>	<i>Affects a person's choice</i>
EI Extroversion or Introversion	To focus the dominant (favourite) process on the outer world or the world of ideas
SN Sensing or Intuition	To use one kind of perception instead of the other when either could be used
TF Thinking or Feeling	To use one kind of judgement instead of the other when either could be used
JP Judgement or Perception	To use the judging or perceptive attitude for dealing with the outer world

Source: Myers, I.B., & Myers, P.B. (1980). *Gifts Differing*. Paulo Alto, CA: Consulting Psychologists Press.

The Myers-Briggs model was used to categorise the findings (personality related) from the job analysis interviews using the Repertory Grid technique.

It emerged from the job analysis (and this was supported by the literature review), that a sociable, more extroverted characteristic would be required to handle the increased people management and alignment activities of the new managerial role. The new "change agent" role, in particular, highlighted the

need for a more intuitive approach to information processing – being open to new experiences and seeking novel approaches to problem resolution. As a result, the description of desired personality characteristics included an “intuitive” dimension. Finally, it emerged strongly from the job analysis that ensuring organisational unit effectiveness and, more tactically, leveraging organisational core competence require a strong rational, logical approach to work. This resulted in the inclusion of the “thinking” and “judging” dimensions as measured on the MBTI as required personality characteristics (associated with high performance in the organisation). The specific personality characteristics required are summarised in table 4.2.

TABLE 4.2: A description of desired personality characteristics for managers in the company

<i>Extroverted</i>	<i>Intuitive</i>	<i>Thinking</i>	<i>Judging</i>
Understanding and accessible, often sociable, more at home in the world of people than in the world of ideas.	Desiring chiefly opportunities and possibilities, and being very imaginative, inventive and original, by nature initiators, inventors and promoters.	Value logic above sentiment, if forced between truthfulness and tactfulness, will usually be truthful. Are able to organise facts and ideas into logical sequence . Suppress feeling that is incompatible with the thinking judgements.	Rational, depend on reasoned judgements, like matters settled as promptly as possible, make very definite choices among possibilities

2.2.2 Required team role profile

The strong emphasis in the literature on teamwork and team process skills (Cockerill, 1989, 1993; Jaques, 1989, 1990; Rosener, 1990; Spencer & Spencer, 1993) led to the inclusion of team-role preferences in the generic model as a sub-component of the personality component. Belbin (1996)

defines a team-role preference as the characteristic ways in which people with given personalities and abilities contribute to a team.

Using the Belbin (1981, 1996) framework of team roles to categorise the results of the literature survey for the new managerial roles and the results of the job analysis interviews, six team roles were identified. These six team roles (summarised in table 4.3) were found to be descriptive of the type of roles managers should assume and they were therefore included in the organisation-specific model.

TABLE 4.3: Core team-role characteristics associated with managerial success in the company

<i>Team Role</i>	<i>Typical Features</i>	<i>Personal Qualities</i>
Plant PL	Individualistic, serious minded, unorthodox.	Imagination, intellect, knowledge.
Resource Investigator RI	Extroverted, enthusiastic, curious, communicative.	A capacity for contacting people and exploring anything new. An ability to respond to a challenge.
Monitor Evaluator ME	Sober, unemotional, prudent.	Judgement, discretion, hard-headedness.
Co-ordinator Co	Calm, confident, controlled.	A capacity for treating and welcoming all potential contributors on their merits and without prejudice. A strong sense of objectives.
Shaper Sh	Highly strung, dynamic, outgoing.	Drive and a readiness to challenge inertia, ineffectiveness, complacency or self-deception.
Completer finisher CF	Orderly, conscientious, anxious.	A capacity for follow-through. Perfectionism.

2.3 Required competencies

The organisation conducted extensive research into identifying the requisite competencies for managers (Lombard & Walsh, 1990; Struwig, Van Staden & Van der Spuy, 1992) which resulted in the design of a competency framework for junior managers and an Assessment Centre to objectively assess these competencies.

The competency profile included ten dimensions of behaviour clustered into three groupings. The organisation-specific competency profile was considered to be accurate in defining the required behaviour demonstrated by high performing managers and included in the organisation-specific model. The competency profile is summarised in table 4.4

TABLE 4.4: Competency profile for junior lending managers

<i>Cluster of dimensions</i>	<i>Dimensions</i>
Problem solving	Analysis of data Probing and fact finding Judgement Decisiveness
Implementing	Initiating action Planning, organising and controlling Delegating
Interacting	Interpersonal sensitivity Assertiveness Persuasiveness

3. Summary

The process followed in designing a conceptual model to predict job success for junior managers of a large financial institution included two main sets of activities.

First, a comprehensive literature review was done to investigate trends in the industry (take a future view). Research into managerial work and work roles was also reviewed in order to identify indicators of high performance. The outcome of the review was a generic model consisting of variables associated with high performing managers.

The second set of activities included intra-organisational research (job analysis) to identify organisational-specific requirements for success. The purpose of this phase was to customise the generic model and propose a tailored, organisation-specific model containing specific variables associated with high performing junior managers. The competency research conducted in the organisation (Struwig, Van Staden & Van der Spuy, 1992) was also incorporated into the final, customised model.

4. Organisation-specific model containing variables associated with high performing managers

4.1 Model

The organisation-specific model extends the earlier (section 1.3) generic model which was initially developed based on the analysis of relevant literature.

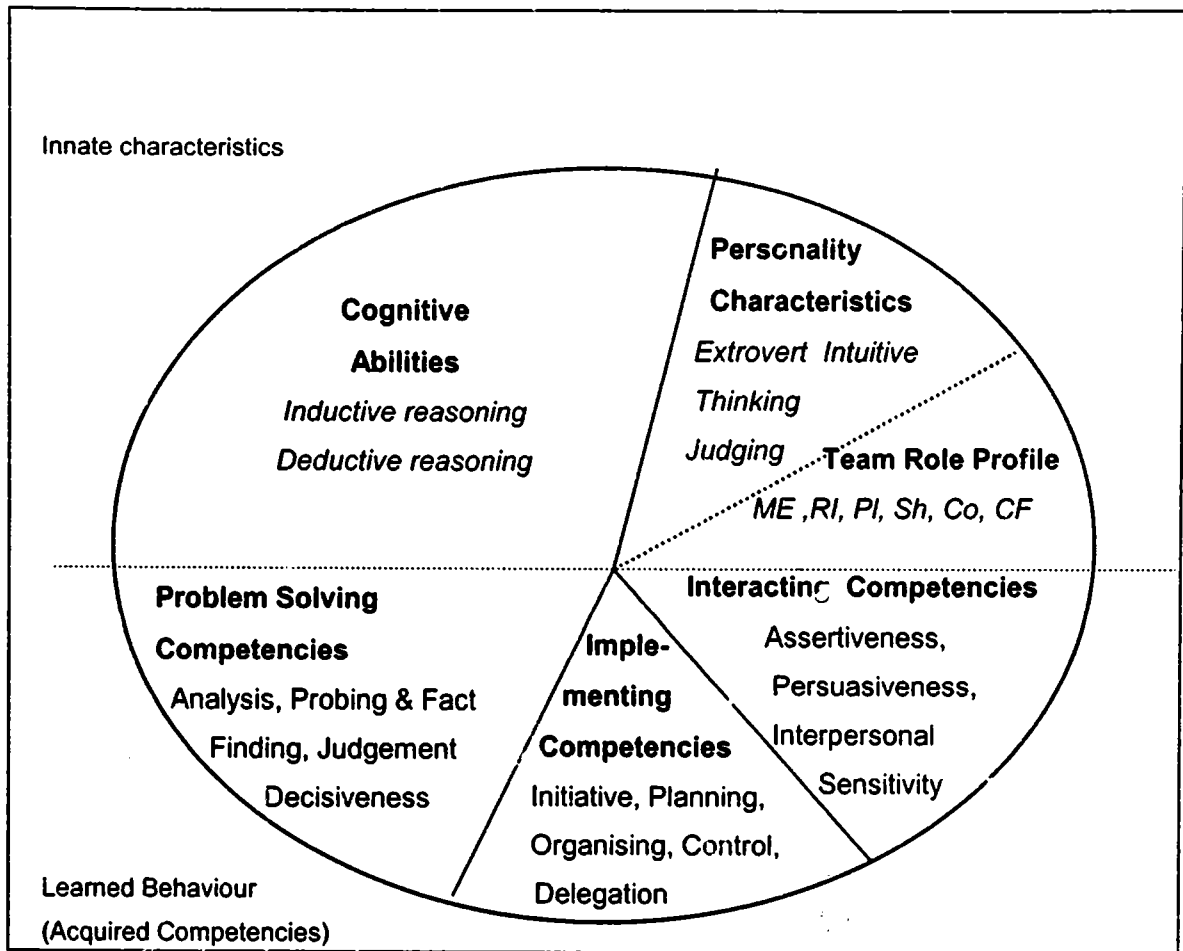


Figure 4.2: Organisation-specific model of variables associated with high performing managers

The aim of the organisation-specific model is to clarify the various factors that are conceptually related to high performance in managerial roles. The organisation-specific model uses the same basic structure as the generic model – distinguishing between innate characteristics and learned behaviours. However, the cognitive abilities, personality variables, and personal competencies described in the preceding sections are incorporated to ensure that the model reflects the unique organisational demands on junior managers.

The various factors and sub-components of these factors are all measurable, which provides a structure for the empirical assessment of managerial potential, and the ultimate prediction of job success.

The model provided the basis upon which assessment techniques were chosen or developed and upon which data were collected about those

employees who were assessed. The purpose of this research is to investigate the predictive validity of this model by tracking and measuring the job success of the assessed candidates after a five-year period.

Stated differently, the investigation consists of a longitudinal, predictive validity study of the variables included in the organisation-specific model shown in figure 4.2 using measurements of job success after a period of five years.

CHAPTER 5

RESEARCH DESIGN

The research design used to investigate the relationship between job success and personal competencies, cognition and personality variables is described in this chapter. The purpose of the study, which was discussed in chapter 1, is repeated here for the sake of continuity, and an overall hypothesis is presented. The instruments used to measure the relationship will be discussed and their inclusion substantiated. The sample of managers drawn will also be discussed, followed by a review of the statistical techniques selected and used to determine the relationship.

1. The problem investigated

The "Successful Manager Profile" was developed to address a need experienced by a company in the financial services sector (a bank) to identify managerial potential to meet the challenges presented by a dynamic, changing environment. Implicit in the process of identifying managerial potential is the task of *predicting future success at managerial level*. The "Successful Manager Profile" comprises factors associated with managerial success which were derived from a literature review and a role evaluation (job analysis) in the context of the organisation itself.

The specific aim of this study is to investigate the utility and validity of the model by evaluating the various tests and procedures that have been selected in accordance with the model. A further objective is to propose a modified "Successful Manager Profile" based on the findings of the study.

2. Setting

The study was conducted in a bank. During 1991 and 1992 (data collection phase) the firm then employed approximately 25 000 people, of whom approximately 700 fell in the junior branch manager cohort. Appointments to junior managerial positions were sourced from the senior supervisory level, which consisted of approximately 1000 employees. The supervisory level was of particular interest to executive management because future managers were selected from this group and, as a result, succession planning and career management initiatives were focused on this group. The supervisory group also formed the population from which the sample for this study was drawn.

3. Sample

3.1 Initial sample

The initial sample was constructed between mid-1991 and mid-1992 by requesting nominations for participants from responsible personnel departments. Broad eligibility criteria were set. These were:

- Participants had to be younger than 35 years of age.
- At least 3 years of service with the organisation were required, together with attendance of the requisite technical training programmes.
- Participants had to be in the senior supervisory cohort.
- A performance rating of at least a "3" (meet most of the expected requirements) on the five-point performance appraisal system was necessary.

The composition of the initial sample is summarised in table 5.1.

TABLE 5.1: Initial sample composition

Sample description					
N	287				
Male n	163				
Female n	124				
Mean Age	32.3	(1991/2 data)			
Qualifications	<12 th grade	12 th grade	Certificate	diploma	degree
	17	179	20	14	57

Each subject was assessed during a five-day assessment programme conducted at various venues across the country, at which the various components of the predictive model were measured. The data collected served as the basis for further analysis.

3.2 Final sample

The final sample was decided on at the end of 1996 –to the beginning 1997 by tracking and including all those individuals who had been assessed and were still employed by the organisation. Further data required to construct the criterion were collected for subjects included in the final sample. It is important to note that January 1997 was chosen as a cut-off date for tracking employees' career success. The reason was that the company had embarked on a major restructuring process which significantly changed the managerial role requirements, thereby rendering the carefully constructed "Successful Manager Profile" no longer applicable.

TABLE 5.2: Final sample composition

Sample description					
N	213				
Male n	126				
Female n	87				
Mean Age	32.54	(1991/2 data)			
Qualifications	<12 th grade	12 th grade	Certificate	diploma	degree
	12	131	16	12	41

4. Independent variables: measuring instruments

4.1 Cognition

4.1.1 Mental Alertness (MA) test

The MA test is a predominantly verbal sub-test of the High Level Battery (B75) developed by the National Institute for Personnel Research. It comprises 42 items which include: numerical and letter series, verbal analogies, common elements and other problems requiring reasoning ability. The purpose of the test is to rate members of a group with a given level of schooling in terms of their intellectual ability, especially the reasoning required in solving a wide range of problems (Smit, 1986).

4.1.1.1 Administration of the test

In administering this test, strict time limits are imposed - the 42 items have to be completed in 45 minutes. Test takers are handed a question booklet, an answer sheet, a sheet of rough paper, an HB pencil and an eraser. Instructions are given about the completion of the test. The answer sheet is scored using a scoring mask and the number of correct responses is used to

derive a stanine or sten score from the norm table appropriate to the test takers (Lombard, 1975).

Research conducted in the organisation on scores of a sample of 319 subjects using the Kuder-Richardson 21 (KR21) formula to calculate the MA test's reliability coefficient returned a value of 0,84 (Van der Spuy, 1992). Subjects from the sample attained a mean score of 20,59 with a standard deviation of 7,59.

4.1.1.2 Reasons for including the test

Like the Wechsler Adult Intelligence Scale (WAIS), the MA sub-test of the High Level Battery is based on the view that intellect is measured by, or consists largely of, a general or *g*-factor. The aim of the MA sub-test is to determine the test taker's level of deductive and inductive reasoning, which, in turn, may be interpreted as a score for mental alertness (Dale, 1996).

The organisation-specific role analysis (job analysis) indicated thinking requirements closely aligned to both *inductive* and *deductive* reasoning patterns. In addition, the generic role requirements of managers in a changing environment demand the constant acquisition of new knowledge and skills. Since learning on the job is central to high performance, and general cognitive ability predicts learning (Hunter, 1986), it follows that general cognitive ability should be an important predictor of job performance.

Most data and information about decisions that have to be taken are presented in writing (application forms and financial statements). The MA sub-test assesses reasoning ability using both verbal and numerical problems.

Further, the MA sub-test is applicable to test takers who have attained a minimum educational level of a matriculation certificate (12th grade) or higher.

This is applicable to the sample, for whom matriculation was the minimum academic qualification¹.

4.1.2 The Conceptual Reasoning Test (CRT)

The CRT is a non-verbal measure of inductive reasoning ability (Booyens 1990). Inductive reasoning involves using logic to derive general rules from specific examples, and reasoning from part to whole or from particular to general (Colberg, Nester & Trattner, 1985). The items in the CRT are non-verbal, as the verbal medium of presentation is problematic in South Africa where test takers come from diverse language backgrounds. The emphasis in the CRT is on the identification of concepts from a known (given) repertoire and the application of these to a wide variety of problems (Booyens, 1990).

Four types of problems occur in the CRT. These are series problems, two-way classification problems, transformation problems and operations problems. All problems occur in 7x7 matrices and superficially resemble each other.

Series problems provide good indices of general reasoning ability as they involve detecting the logical order among the elements of the series and deriving the next or missing elements in the sequence from that logical order.

Two-way classification problems require that the characteristics shared by elements in both rows and columns be identified and applied to the problem scenario.

Transformation problems require the test taker to infer the rules by which one group of elements is transformed into another.

Operations problems are extensions of transformation problems, in which the transformation is guided by operators (the operators are analogous to operators in mathematics).

¹ Note: Table 5.1 and 5.2 reflect a number of subjects who did not meet the minimum academic criterion. Their nominations for assessment and inclusion in the sample were accepted on the basis of superior work performance.

A study was conducted in the organisation on the scores attained by a sample of 311 subjects to determine the reliability of the test (Van der Spuy, 1992). The following results were obtained using the Kuder Richardson 21 formula (KR21): reliability 0,82, mean 18,69, and standard deviation 6,61.

4.1.2.1 Administration of the test

In administering this test, strict time limits are imposed - the 35 items must be completed in 35 minutes. Test takers are provided with a question booklet, an answer sheet, a sheet of rough paper, an HB pencil and an eraser. Instructions are given about completion of the test. The answer sheet is scored using a scoring mask, and the number of correct responses is used to derive a stanine or sten score from the norm table appropriate to the test taker (Booyens, 1990).

4.1.2.2 Reasons for including the test

Hesketh and Robertson (1993) argue that, although from an employer's perspective the most sensible and generalisable predictors to use are measures of general ability, special abilities should not be overlooked. Assessing special abilities may result in a more complete understanding of performance (Campbell, 1990). In factor analytic studies special abilities also load on "g" and hence contribute to providing the best estimate of it (Gustafsson, 1989).

The organisation-specific role analysis clearly highlighted the need for inductive reasoning in assessing credit or lending applications, in particular when taking the final decision.

Further, the non-verbal nature of the test is appropriate and fair given the different home languages of the subjects. The test is also appropriate for use on people with a matriculation (12th grade) or higher educational qualification.

4.2 Personality traits

4.2.1 Myers-Briggs Type Indicator (MBTI)

The MBTI is a forced choice, self-report inventory which is used to describe an individual's preferred behaviour on four scales. While personality measures generally tend to identify the quantity of a trait or skill of an individual, the MBTI aims at sorting people into theoretical categories of type based on given dimensions of preferred behaviour (Myers & Myers, 1980). The aim of the MBTI therefore is to identify people's basic preferences germane to perception and judgement, and the environments in which these are used. The test contains four different indices (table 5.3). Each index reflects one of four basic preferences which, according to the Myers-Briggs model, direct the use of perception and judgement.

TABLE 5.3: The four preferences of the MBTI

Preference	Description
E-I	Extraverts are orientated primarily toward the outer world and therefore tend to focus their perception and judgement on people and things. Introverts are orientated primarily to the inner world and tend to focus their perception and judgement upon concepts and ideas
S-N	The SN index reflects individuals' preferences regarding two contrasting ways of perceiving, namely reporting facts observed through the senses, or reporting meanings or possibilities that rely on insights beyond the reach of the conscious mind.
T-F	The TF index reflects the preferences regarding two contrasting ways of judging – impartially on the basis of logical consequences (thinking) or on the basis of personal or social values (feeling).
J-P	The JP index describes the process used in decision-making processes. Using judgement indicates a preference for order and predictability, and for reaching closure as opposed to enjoying flexibility and leaving options.

Source: Van Rooyen, J. & De Beer, J. (1993). Myers-Briggs Type Indicator® training manual. Johannesburg: Jopie van Rooyen and Partners (CC).

The MBTI scores are preference scores and not standard scores (Van Rooyen & De Beer, 1993). These preference scores, although not standard scores such as test developers use in trait description, do, however, present a uniform system for reporting strength of preference. This allows for comparison of the results obtained (Van Rooyen & De Beer, 1993).

The MBTI has been extensively researched and results on the reliability and validity of the instrument for different population groups have been published

in the users' manual (Myers & McCaully, 1985). Table 5.4 shows split-half reliabilities of continuous scores for a number of groups. The reliabilities are consistent with those of other personality instruments (Myers & McCaully, 1985).

TABLE 5.4: Reliability of the MBTI

Internal consistency derived from product-moment correlations of X and Y continuous scores with Spearman Brown prophecy formula correction					
Description of Sample	N	E-I	S-N	T-F	J-P
Adult, high school graduate, no college	1943	84	85	87	88
Adult college graduate	9182	84	90	88	88
Age group 30-39	9505	84	89	86	88

Because the MBTI was designed to implement Jung's theory of psychological types, its validity is determined by its ability to demonstrate relationships and outcomes predicted by theory. One way to validate the MBTI is to compare MBTI results with self-assessment of type preferences. By chance, one would be expected to pick the correct type once out of sixteen times, or 6,25% of the time. In two studies, one of 129 and one of 118 introductory psychology students, it was found that the self-reported type and assessed type corresponded significantly more than chance for both groups (35% $p < 0,001$, and 50% $p < 0,001$).

4.2.1.1 Administration of the MBTI questionnaire

The MBTI can be administered to individuals or groups of individuals. There is no time limit for the completion of the questionnaire, but respondents must be encouraged to work rapidly, and not to ponder items at length (Myers & McCaully, 1987). In work situations in particular, the administrator should be

aware that individuals may answer the questions as they believe authority would want them to be heard (Van Rooyen & De Beer, 1993) as the items are reasonably transparent and answers could be falsified.

4.2.1.2 Reasons for including the MBTI questionnaire

The literature review indicated that extraversion was becoming increasingly important as a desired personality trait in managers. This was supported by the meta-analytic study of Barrick and Mount (1991) which reported that extraversion is a valid predictor for managerial success.

Further, the organisation-specific role analysis indicated that the Myers-Briggs personality typology covers most of the job specific personality requirements. These are (apart from extraversion), the S-N index which could be used to measure the required ability to extrapolate information from facts and project possibilities into the future and the preference for solving new, complex problems (strong N preference).

The T-F index could be used to measure the required ability to analyse logically, decide impersonally and examine the principles involved in the situation (strong T preference).

Further, the J-P index could be used to measure the requirement for reaching closure by deciding quickly, working meticulously according to a plan, and using lists to prompt action on specific tasks.

There has been some criticism of the use of personality measures in predicting job success (Dale, 1996). However, a meta-analytic review conducted by Tett, Jackson and Rothstein (1991) assessed the overall validity of personality measures as predictors of job performance and produced a corrected personality scale validity coefficient of 0,29. A higher validity coefficient (0,38) was reported based on studies using job analysis explicitly in the selection of personality measures. In view of this, and of the direct job-related relevance of the MBTI® indicator, this instrument was added to the assessment process.

4.2. ? Belbin Team-Role Profile

Belbin (1983) describes research conducted at Henley Management College where members of teams were looked at along various dimensions of personality, and where these variables were used as the primary basis for forming teams of people with similar or dissimilar characteristics. The rationale was that if the general level of mental ability was not the decisive advantage in the simulated management game, then certain factors of character (that are easily neglected because they are more difficult to assess), might turn out to be more important (Belbin, 1981).

This research has led to the formulation of nine team roles, which form the basis of Belbin's Team-Role Profile. They are claimed to be exhaustive (Belbin, 1996). A summary of the Belbin Team-Role model is given in table 5.

4

TABLE 5.5: Belbin's model of team roles

Team Role	Symbol	Typical Features	Positive Qualities	Allowable Weakness
Plant	PL	Individualistic, serious minded, unorthodox	Genius, imagination, intellect, knowledge	Up in the clouds, inclined to disregard practical details or protocol
Resource Investigator	RI	Extroverted, enthusiastic, curious, communicative	A capacity for contacting people and exploring anything new; an ability to respond to a challenge	Liable to lose interest once the initial fascination has passed
Monitor Evaluator	ME	Sober, unemotional, prudent	Judgement, discretion, hard-headedness	Lacks inspiration or the ability to motivate others
Co-ordinator	CO	Calm, confident controlled	A capacity for treating and welcoming all potential contributors on their merits and without prejudice; a strong sense of objectives	No more than ordinary in terms of intellect or creative ability
Shaper	SH	Highly strung, dynamic, outgoing	Drive and a readiness to challenge inertia, ineffectiveness, complacency or self-deception	Proneness to provocation, irritation and impatience
Completer finisher	CF	Orderly, conscientious, anxious	A capacity for follow through, perfectionism.	A tendency to worry about small things; a reluctance to let go
Team worker	TW	Socially orientated, rather mild, sensitive	An ability to respond to people and to situations, and to promote team spirit	Indecisiveness at moments of crisis
Specialist	SP	Detail Conscious, depth, focus	Intellectual solutions, narrow focus, knowledge worker	Theoretical.
Implementer	IM	Conservative, dutiful, predictable	Organising ability, practical common sense, hard working, self-discipline	Lack of flexibility, unresponsiveness to unproven ideas

A subject's team-role profile is determined through a 360-degree assessment, which includes the completion of a self-report questionnaire and at least four observer report forms. The data are entered into a personal computer using specific software, which scores the new data. Tables of norms based on scores of a cross-section of managers from various industries and functions in the United Kingdom are resident in the software package, and are automatically applied.

4.2.2.1 Administration of the Belbin team-role questionnaire

The Belbin Team-Role Profile consists of a self-perception questionnaire, an answer sheet, and an observer response sheet. The self-perception component comprises seven sections, each with ten statements. The test taker is required to distribute a total of ten points among these statements: in extreme cases they might be spread among all the statements, or ten points may be allocated to a single sentence.

The observer sheet contains lists of words. The observer is required to tick those words that describe the test taker, and to double tick those words that describe the person really well. A minimum of four observer assessments is required. It is recommended, however, that these observer assessments be obtained from a "boss", "subordinate(s)" and "colleague(s)".

The responses are entered into the computer using a specific software package (Interplace). A self-perception profile and an integrated profile (integrating observer ratings) are produced.

The highest score on a team role will indicate how best the subject can make a mark in a management team (Belbin, 1996). The next highest scores can denote back-up team roles towards which the individual should shift if, for some reason, there is less need for his/her primary team role.

The two lowest scores on team roles imply possible areas of weakness.

4.2.2.2 Reasons for including the Belbin Team-Role Profile questionnaire

In reviewing the literature it emerged that the shift to increased team work, prompted by the rapidly changing environment, has required new and different skills (team process skills) and personality characteristics from managers. Belbin (1981, 1993, 1996) has done extensive research on team roles, and has identified eight types of people as useful to have in teams (based on their personality traits and resultant team-role profile) (Belbin, 1996). These were summarised in chapter 4, table 4.3. The organisation-specific role analysis revealed that some of these team roles are associated with managerial success. These roles are: Monitor-Evaluator, Resource-Investigator, Plant, Shaper, Co-ordinator, and Completer-Finisher. The apparent usefulness and cost-effectiveness of the Belbin Team-Role Profile lies in its provision of a 360-degree appraisal of the person's team-role profile (which is underpinned by specific personality traits), and this, together with its direct conceptual relation with the role-analysis outcome, dictated the inclusion of the instrument in the assessment procedure.

4.3 Personal competencies

An organisation-specific assessment centre was developed, tested and implemented during 1988-1990. A rudimentary concurrent validation study, performed by the writer in 1990 using job performance data, reported a correlation with job performance of 0.301 (n=98). The competencies measured in the assessment centre were constructed after a thorough job analysis of the target position (junior managerial cohort), and one level above (middle managerial cohort) had been completed. These dimensions of behaviour were also referenced to competency sets published in the literature (Murray, 1986; Stewart & Stewart, 1981) and were assumed to be accurate and valid. The following section briefly details the components of the bank's assessment centre.

4.3.1 The Management Development Evaluation 1 (MDE1)

4.3.1.1 Process

The MDE1 was structured along the lines of a conventional assessment centre. Three full-time staff members - assessment centre administrators - managed the process. Each administrator worked with two observers and four participants during an assessment centre. Observers were rotated among the four participants to comply with the multi-rater, multi-exercise, and multi-competency requirement of assessment centre technology (Spangenberg, 1991). Thus a total of twelve participants, six observers and three administrators took part in the four-day process. The process and the activities are summarised in table 5.6.

TABLE 5.6: The MDE1 process

Day	Activity	Administrator	Observer	Participant
Sunday	Briefing	Conduct	Attend	Attend
	In-basket		Score	Complete
	Exercise			
Monday	Company analysis exercise	Role play	Observe, take notes	Complete
			Score	
	Psychometric testing			
	Counselling interview exercise	Administer		Complete
		Role play	Observe, take notes	Complete
Tuesday	Conflict exercise	Role play	Observe, take notes	Complete
	De-briefing		Score	
		Conduct		Attend
Wednesday	Data integration	Facilitate	Present evidence and ratings	
Approx. 1 week later	Report writing	Write reports		
Approx. 1 week later	Feedback	Give feedback		Receive feedback

4.3.1.2 Content

Competencies evaluated

The competencies were grouped into three conceptual clusters, as follows:

Problem-solving

- Analysis
- Probing and fact finding
- Judgement
- Decisiveness

Implementing

- Initiative
- Planning, organising and control
- Delegating

Interacting

- Assertiveness
- Persuasiveness
- Interpersonal sensitivity

4.3.1.3 Exercises

Participants were required to complete four simulation exercises, followed by the battery of psychometric tests and questionnaires listed above. The exercises were chosen to reflect the work environment, thus increasing face validity (Smit, 1986). The following model illustrates the choice of exercises:

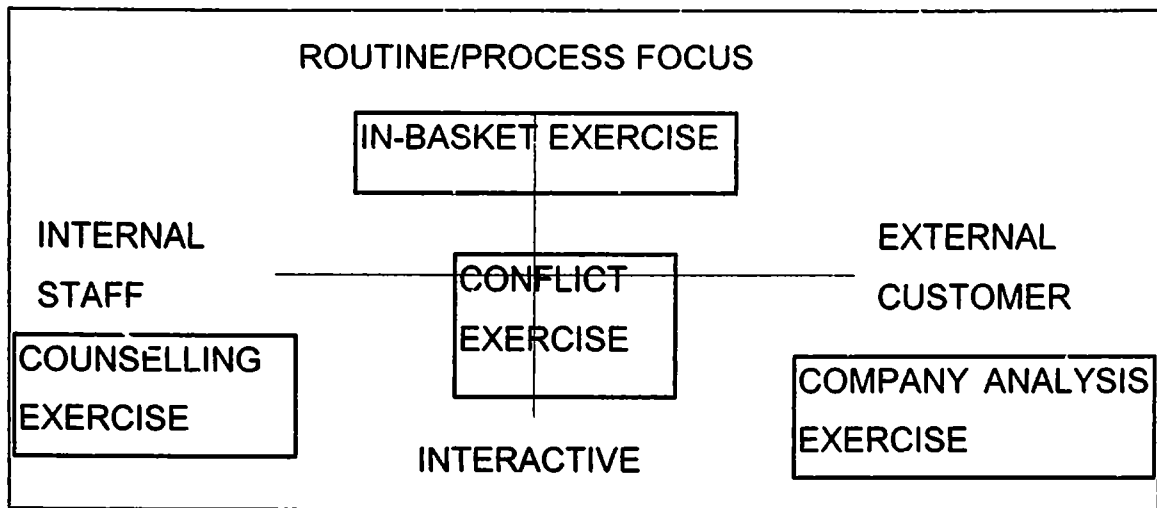


Figure 5.1: Management development evaluation exercises

In-basket exercise

This paper-and-pencil exercise was designed to evaluate the participant's judgement, and his or her analytical and administrative competency. It comprised 21 items, which had to be completed in two-and-a-half hours. The dimensions evaluated in this exercise were:

- Analysis
- Judgement
- Planning, organising and control
- Initiative
- Delegation

Company analysis exercise

The purpose of this two-and-a-half-hour paper-and-pencil, interactive exercise was to evaluate each participant's analytical and planning skills, soundness of judgement and persuasive ability. It comprised a high-level business case

study which contained both numerical and “verbal” factual data. The participant was required to analyse the core problems, generate proposals and solutions, and present these in a role-play scenario. The competencies assessed in this exercise were:

- Analysis
- Judgement
- Decisiveness
- Initiative
- Planning, organising and control
- Assertiveness
- Persuasiveness

Conflict exercise

This exercise evaluated the participant’s skill at handling two people (one “customer” and one “subordinate”) in a sensitive situation involving missing money. The participant was given 10 minutes to prepare for the interaction, which lasted for approximately 15 minutes. The competencies assessed in this exercise were:

- Probing and fact finding
- Judgement
- Decisiveness
- Assertiveness
- Interpersonal sensitivity

Counselling interview exercise

This exercise evaluated the participant’s skill at handling a “subordinate” in an interactive situation relating to a career development problem. The participant

was given 5 minutes to prepare for an interview which lasted for 15 minutes. The competencies assessed were:

- Probing and fact finding
- Judgement
- Initiative
- Delegating
- Persuasiveness
- Interpersonal sensitivity

4.3.1.4 Rating scale

A five-point behaviourally-anchored, competency-specific rating scale was used, as well as an overall rating scale.

4.3.1.5 Documentation

Thorough records were kept. Each participant completed a detailed biographical questionnaire, which was used in the feedback session to complete each individuals' development plan in terms of his planned career path. The participants' biographical data were also captured into a database.. The following documentation was used to ensure consistency:

- Participants' instructions
- Participants' report form
- Observers' instructions
- Observers' report form
- Role players' instructions (excluding in-basket exercise)

4.3.1.6 Reports and feedback to participants

The Assessment Centre administrators compiled detailed reports on participants' performance during the assessment. Feedback was given to all participants and a personal development plan was compiled at this session.

4.3.1.7 Reasons for the inclusion of the MDE 1 in the assessment battery

It is well documented in the research literature that assessment centres are superior to other methods in predicting performance ratings. Mean validity coefficients of 0,43 (Woodruffe, 1990) have been obtained. Assessment centres were also among the best predictors of job success, defined as a change in status (0,41) (Woodruffe, 1990). A variety of other research findings support the notion that assessment centres are good predictors of future performance or success (Gaugler, et al., 1987; Murray, 1986; Tzinier, et al., 1995; Woodruffe, 1990).

The MDE1 is an in-house researched, developed and validated process for assessing the requisite competencies. It is therefore sensible to include the assessment centre technique as the method for assessing the personal competencies contained in the model.

5. Dependent variable

The question of the criterion has been extensively reviewed in chapter 2. In deciding upon a criterion, three principles were used: relevance, sensitivity and practicality (Akkerman, 1989; Cascio, 1991). It was judged that a global measure (Cascio, 1991) such as change in organisational level conforms with all three principles.:

Relevance - Upward mobility in a big organisation with rigidly defined job milestones is a clear sign of success. It indicates that the individual's outputs

are valued, and that the organisation is willing to entrust the person with greater responsibility.

Sensitivity - Given the fact that there are five milestones in the junior managerial cohort, the use of progression through these milestones is sufficiently sensitive to discriminate between successful and unsuccessful managers.

Practicality - Assigning a numerical value to the rate of progression of subjects through the junior managerial cohort milestones yields data on an interval scale (Ghiseili, et al., 1981). Interval data can be used when performing a number of statistical techniques.

Not all employees were at the same job grading when they were assessed. To overcome this problem, a categorising grid was developed. In the grid, the position grade at time of assessment is on the Y-axis, and the final position grade five years later is plotted on the X-axis. Thus, the acceleration rate for each individual can be determined and a numerical value assigned to that.

TABLE 5.7: Criterion development - categorising grid.

Level at time of assessment	Category					
	very slow	slow	medium	fast	Very fast	extremely fast
SO1	1	2	3	4	5	6
SO2	very slow	very slow	slow	medium	Fast	very fast
	1	1	2	3	4	5
SO3/4	-	very slow	very slow	slow	medium	fast
		1	1	2	3	4
Grade/	SO3/4	L4L	L4U	M1	M2	M3
Hay units		340	353-366	393	406-420	466-479
Level attained in 1996-7						

6. Research procedure

This investigation is a criterion-related predictive validity study as illustrated in figure 5.2.

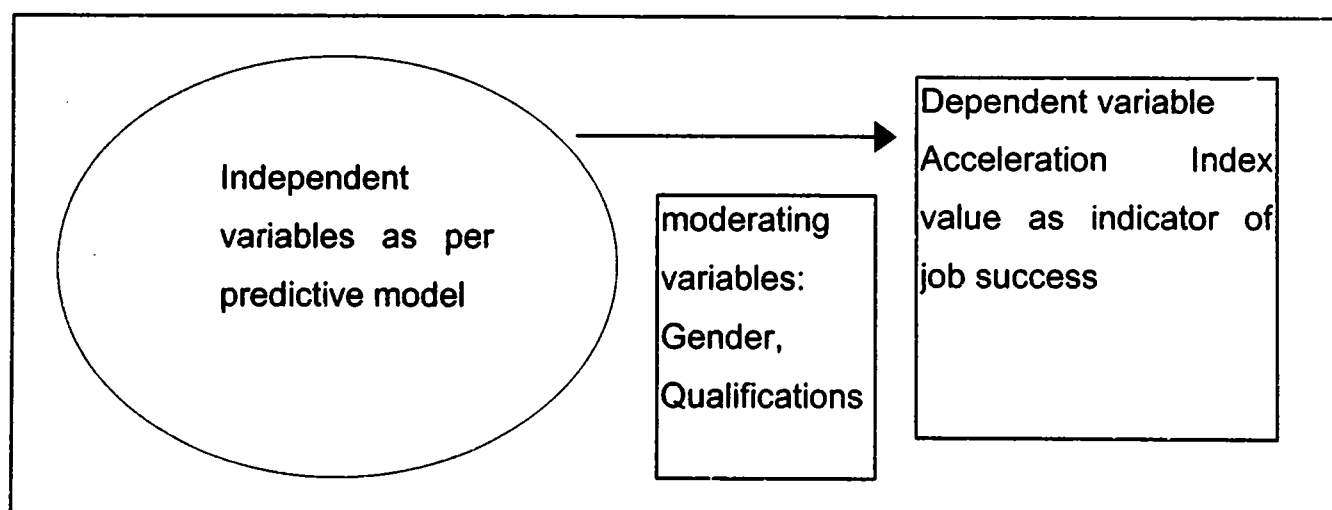


Figure 5.2: Research design

The biographical variables of gender, race and level of education have been included in the research design as moderator variables.

To investigate the predictive validity of the bank's model of the successful manager profile, the procedure outlined in figure 5.3 was used.

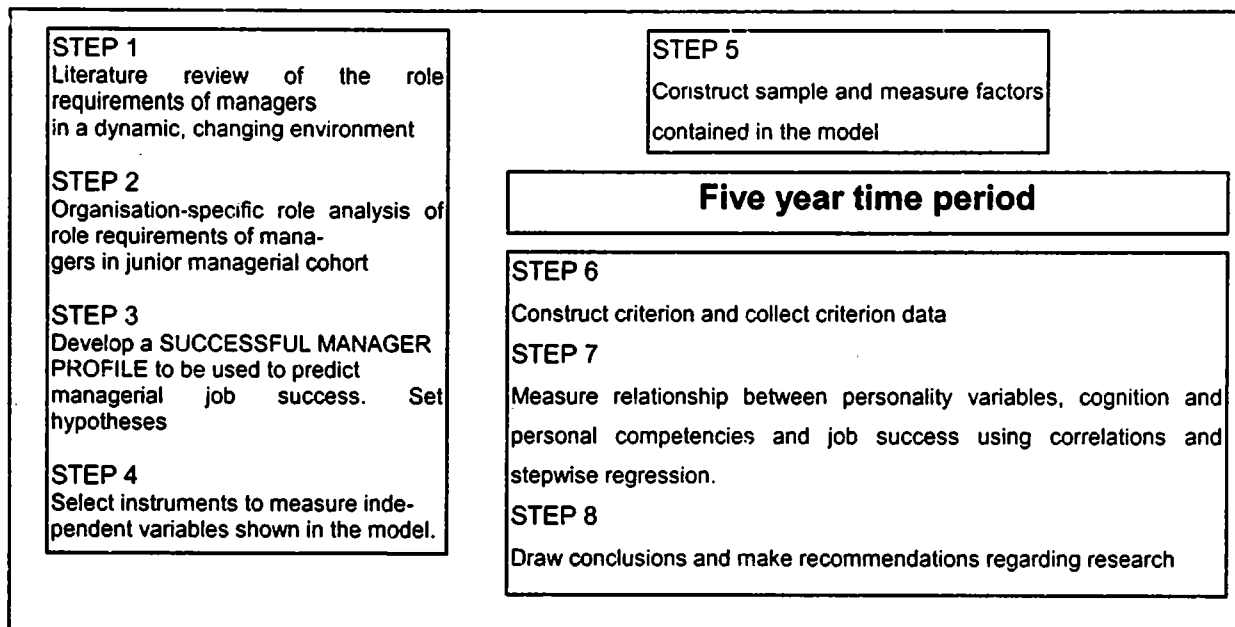


Figure 5.3: Research procedure

6.1 Step1: Literature review

The initial literature review of managerial role requirements was conducted in 1990. The research and publications of Bennis (1989), Boyatziz (1982), Cockerill (1989), Jaques (1989, 1990) Kotter (1982), O'Meara (undated), Senge (1990), Stewart and Stewart (1982) and Zaleznik (1977) guided the thinking in the development of the generic "Successful Manager Profile"².

² The review of literature continued after the initial survey and review which resulted in the development of the model. This was done to verify the continued relevance of the model in view of further research

6.2 Step 2: Role analysis

Having developed a broad, generic conceptual model of the factors which influence managerial job success in a dynamic environment, intra-organisational research was done on the specific role requirements of jobs in the junior (branch) managerial cohort. Prior research into the required competency profile for these managers was reviewed, and interviews were conducted further to investigate the specific cognitive abilities and personality traits which are characteristic of successful managers.

6.3 Step 3: Development of the “Successful Manager Profile”

The literature review, and combination of existing and further intra-organisational research, resulted in the development of the “Successful Manager Profile”. The intention with this profile was to use it as a basis for predicting future managerial success. This necessitated the selection of instruments which measure the factors contained in the profile and the interpretation of the test and questionnaire results in terms of the profile.

In addition, an overall hypothesis with sub-hypotheses were formulated (the hypotheses are discussed in section 7).

6.4 Step 4: Selection of instruments

Based on the factors contained in the “Successful Manager Profile”, an in-house developed assessment centre (MDE1), the MBTI, the Belbin Team-Role Profile, the Mental Alertness (High Level Battery), and the Conceptual Reasoning Test were selected.

in the field of management studies. For the sake of comprehensiveness, the more recently published views and research by the same (or other authors) were also reported in this study.

6.5 Step 5: Data Collection

An initial sample was constructed as described in table 5.1. Subjects were assessed using the instruments included in the assessment battery.

6.6 Step 6: Construction of the criterion

A criterion for the measurement of job success was constructed. Data on final job grade level were collected for each subject (five years after date of assessment). A categorising grid was used to determine rate of progression. These scores were used as the dependent variable.

6.7 Step 7: Statistical analysis

The predictive validity of the "Successful Manager Profile " was established. This was done by statistically estimating the relationship between personality variables, cognition, personal competencies and job success using Pearson's Product-moment correlation and stepwise regression.

6.8 Step 8: Conclusion and discussion

The empirical findings were used to draw conclusions and make recommendations regarding the research. This includes proposing a final "Successful Manager Profile".

7. Hypotheses

The following hypotheses were formulated:

The overall hypothesis was stated in testable form as:

H₀: No significant relationship exists between job success, on the one hand, and cognition, personality variables and personal competencies, on the other.

H_a: A relationship exists between job success, on the one hand, and cognition, personality variables and personal competencies, on the other.

Because of the impact of moderating variables, in particular gender and educational qualification level attained, it was decided to formulate further hypotheses to investigate specific sub-groups in the sample. The following sub-hypotheses were formulated:

Sub-Hypothesis 1:

H₀: For graduate male subjects, no significant relationship exists between job success, on the one hand, and cognition, personality variables and personal competencies, on the other.

H_a: For graduate male subjects, a relationship exists between job success, on the one hand, and cognition, personality variables and personal competencies, on the other.

Sub-Hypothesis 2

H₀: For male subjects with a matriculation certificate, no significant relationship exists between job success, on the one hand, and

cognition, personality variables and personal competencies, on the other.

H_a : For male subjects with a matriculation certificate, a relationship exists between job success, on the one hand, and cognition, personality variables and personal competencies, on the other.

Sub-Hypothesis 3

H_0 : For female subjects with a matriculation certificate, no significant relationship exists between job success, on the one hand, and cognition, personality variables and personal competencies, on the other.

H_a : For female subjects with a matriculation certificate, a relationship exists between job success, on the one hand, and cognition, personality variables and personal competencies, on the other.

The sample size of female subjects who hold a university degree was too small to conduct a regression analysis. As a result, this sub-group was not investigated further.

CHAPTER 6

RESEARCH RESULTS

The results of the investigation are presented as follows:

- An overall description of the sample is given in terms of biographical variables including age, gender, race and educational attainment level.
- Details are provided of the results of the categorical data analysis and ANOVA and post-hoc tests between the means of the scores obtained on the cognitive tests, personality questionnaires and assessment centre dimensions of gender, racial cohorts and educational attainment level.
- An analysis is made of the distributions of the scores of the cognitive tests, personality questionnaires and assessment centre dimensions.
- The correlation coefficient between the dependent variables is given.
- The results of the testing of the hypothesis are set out.

1 The sample

A total of 287 senior supervisors were assessed using the battery of instruments selected to measure the variables contained in the "Successful Manager Profile". Of the initial sample, 213 were still employed by the organisation in 1996 and 1997 when the criterion data were collected.

Of the 74 employees who left the organisation, 39 (52,7%) resigned and cited "better prospects elsewhere" as their reason for leaving. A further 21 (28,4%) resigned but failed/refused to provide reasons. Eleven (14,9%) managers were dismissed and 3 (4%) left without any reason being entered into the human resources database.

1.1 Profile

A review of the biographical details of the group yields the following. The total sample of 213 subjects included 78 females (37%). The white cohort was the biggest with 183 subjects (86%), followed by the Asian cohort with 18 subjects (8%), the coloured cohort with 7 subjects (3,5%) and last, the black cohort with 5 subjects (2,5%). The small representation of Asian, black and coloured subjects made any meaningful analysis on the basis of race impractical. The mean age of the final sample was 32,5 years of age (sd = 5,82), and on average, the sample group earned 3% more than the midpoint salary anchor (COMPA-RATIO) for their respective job grade at the time of assessment. Details of the distribution of the biographical variables for the sample are shown in tables 6.1 and 6.2.

TABLE 6.1: Biographical variables summarised by race and gender

Gender cohorts	Population classification groups				
	Whites	Coloureds	Blacks	Asians	Grand total
Males					
Mean age	31,03	33,33	32,25	33,43	31,4
SD age	5,43	2,52	3,77	5,68	5,38
Min age	22	31	29	25	22
Max age	50	36	36	44	50
% Males	49%	1%	2%	7%	59%
Number males	105	3	4	14	126
Mean compa ratio	10222	10200	107,50	103,29	102,50
SD compa ratio	9,45	7,21	3,10	8,04	9,11
Females					
Mean age	34,29	34,50	26,00	34,50	34,21
SD age	6,28	1,73	–	3,70	6,06
Min age	21	33	26	31	21
Max age	52	37	26	39	52
% Females	37%	2%	0%	2%	41%
Number females	78	4	1	4	87
Mean compa ratio	103,99	101,00	104,00	100,00	103,67
SD compa ratio	8,74	3,74	–	10	8,56
Total sample					
Mean age	32,41	34,00	31,00	33,67	32,54
SD age	6,01	2,00	4,30	5,22	5,82
Min age	22	31	26	25	22
Max age	52	37	36	44	52
% N	86	3,5	2,5	8	100
N	183	7	5	18	213
Mean compa ratio	102,97	101,43	106,80	102,56	102,98
SD compa ratio	9,17	4,96	3,11	8,31	8,89

The distribution of the sample in terms of qualification categories is shown in table 6.2 below.

TABLE 6.2: Qualifications

Qualification	Data	Total
< Matric (12 th grade)	<i>n</i>	12
	Mean of compa-ratio	105,66
	Mean of age	40,25
	%	5,63%
Matric (12 th grade)	<i>n</i>	133
	Mean of compa ratio	103,88
	Mean of age	33,64
	%	62,44%
Certificate	<i>n</i>	16
	Mean of compa ratio	102,93
	Mean of age	30,63
	%	7,51%
Diploma	<i>n</i>	12
	Mean of compa ratio	101,42
	Mean of age	31,75
	%	5,63%
Degree or post graduate qualification	<i>n</i>	40
	Mean of compa ratio	99,62
	Mean of age	27,36
	%	18,78%

Two trends emerge: first, a linear relationship between age and salary -- the older the subject and, by implication, the greater the length of years service, the higher the salary. Second, an inverse relationship exists between qualification and age and earnings -- the better-qualified employees are typically younger and earn less than employees with lower academic qualifications.

1.2 Tests for differences in means between race, gender and educational cohorts

Asians, blacks and coloureds were grouped together to form an ABC cohort because of the small number of employees in each cohort. For the gender and race (ABC and white) sub-groups, *t*-Tests were computed to determine whether significant differences exist between the means.

For the analysis of the different educational groups, "certificate" and "diploma" were grouped together since there were few employees in these two

categories. The new categories are, 1: < matric (12th grade), 2: matric (12th grade), 3: certificate/diploma, and 4: degree (or higher). Categorical data analysis was used to find the association between the following variables: analysis, probing and fact-finding, judgement, decisiveness, initiative, planning, organising and control, delegating, assertiveness, persuasiveness and interpersonal sensitivity. Categorical data analysis was also used for the variables Plant, Resource investigator, Co-ordinator, Shaper, Monitor-evaluator, Team worker, Implementer, Complete finisher and Specialist.

The variables MA-attempted and CRT-attempted were also treated as categorical because, although they took on a large number of values, they were highly skewed (therefore, it would be incorrect to assume a normal distribution). The rest of the variables in the data set had sufficiently normal distributions to apply the ANOVA technique.

1.2.1 Race

TABLE 6.3: *t*-Test results - Asian, black & coloured (ABC) cohort versus white (W) cohort

Statistically significant <i>t</i> -test results for differences between means (dependent and independent variables) of Asian, black and coloured (ABC) and white (W) cohort					
Variable	Mean ABC	Mean white	t-value	Df	P
CRT raw score	15,773	18,656	-2,298	211	0,0224
CRT efficiency index	0,534	0,606	-2,102	211	0,0366
T-F	17,433	11,678	2,912	211	0,0039

Statistically significant differences were found between the means of the ABC and W cohorts on three measures CRT Raw Score and Efficiency Index, and the T-F Index Score. In the sample, employees in the ABC cohort performed worse on the CRT test and reported a stronger T preference on the T-F index than the W cohort.

1.2.2 Gender

t-Tests were computed to determine whether differences between the means of all the biographical variables existed, as this may indicate potential adverse impact with regard to a specific group. The results are shown in table 6.4.

TABLE 6.4: *t*-Test results - gender cohorts

Statistically significant <i>t</i> -test results for differences between means (dependent and independent variables) of male and female groups (male: n=126; female: n=87)					
Variable	Mean male	Mean female	<i>t</i> -value	Df	p
Acceleration index score	2,17	1,67	3,51	211	0,00
Qualifications	1,85	1,32	3,51	211	0,00
Age	31,40	34,21	-3,53	211	0,00
Judgement	2,76	2,61	2,10	211	0,04
Persuasiveness	2,61	2,36	2,83	211	0,05
MA raw score	21,56	18,05	3,41	211	0,00
MA effectiveness index	0,62	0,52	4,07	211	0,00
CRT raw score	18,99	17,16	2,03	211	0,04
CRT effectiveness index	0,63	0,55	2,97	211	0,00
T-F	13,98	10,33	2,59	211	0,01
Monitor-Evaluator	47,84	30,49	4,19	211	0,00
Completer-Finisher	57,51	76,29	-2,49	211	0,01

Women progress more slowly to higher ranks in the organisation than men do. Further, women supervisors tend to be older and not as well qualified as their male colleagues.

The results indicate significant differences between means of the male and female cohorts on the following variables: raw scores and efficiency index scores (number of items answered correctly divided by the number of items attempted) on both the MA and CRT, a stronger "T" preference on the MBTI T-F index, the ME and CF team role and the judgement and persuasiveness personal competencies.

1.2.3 Qualifications

For the four sub-groups which were composed on the basis of the highest educational level that had been attained by the research participant, categorical data analysis and one-way analysis of variance, followed by Scheffé's *post-hoc* tests, were computed in those cases in which the *F*-ratio's were found to be significant.

The results of the ANOVA and Scheffé *post-hoc* analyses are presented in table 6.5.

TABLE 6.5: Summary of the ANOVA and Scheffé *post-hoc* tests

Statistically significant Scheffé test results. Alpha= 0,05 Confidence= 0,95 Critical value of $F= 2,65$

Variable	Educational groups that differ significantly	df	MSE	Simultaneous lower confidence limit	Difference between means	Simultaneous upper confidence limit
Age	1, 4	211	29,53	1,74	7,20	12,66
	2,4	211	29,53	8,29	5,45	2,6042
MA Correct	1,4	211	53,79	-15,48	-8,15	-0,82
	2,4	211	53,79	-8,61	-4,86	-1,11
CRT Correct	1,4	211	40,28	-13,5	-7,16	-0,82
	2,4	211	40,28	-7,87	-4,62	-1,38
	3,4	211	40,28	-9,04	-4,61	-0,18
N-S	2,4	211	110,05	-10,99	-5,61	-0,24
T-F	1,3	211	101,33	-21,1	-10,64	-0,191

The results of the categorical data analysis are presented in table 6.6.

TABLE 6.6: Categorical data analysis results

Statistically significant Gamma and Kendall Tau-B results for differences between means of dependent variables for the four educational qualifications groupings

Variable	Educational groups that differ significantly	Gamma value	Gamma Confidence interval		Kendall's Tau-B value	Kendall's Tau-B confidence interval	
Analysis	1,2	0,57	0,12	1,02	0,15	0,02	0,28
	1,3	0,78	0,49	1,07	0,41	0,19	0,64
	1,4	0,76	0,43	1,08	0,37	0,13	,061
	2,3	0,383	0,07	0,70	0,17	0,02	,032
Decisiveness	2,4	0,48	0,20	0,77	0,23	0,07	0,38
Initiative	2,4	0,56	0,33	0,85	0,25	0,13	0,37
Judgement	2,4	0,65	0,36	0,93	0,24	0,13	0,35
Persuasiveness	2,3	0,50	0,21	0,79	0,22	0,07	0,38
	2,4	0,44	0,17	0,71	0,21	0,06	0,36
Probing and fact finding	1,3	0,44	0,17	0,71	0,21	0,06	0,36
	1,4	0,75	0,26	1,24	0,30	0,08	0,53
Monitor-evaluator	2,3	0,29	0,03	0,55	0,15	0,01	0,29
Team worker	1,2	-0,4	-0,77	-0,03	-0,14	-0,27	-0,01
	1,4	-0,43	-0,85	-0,02	-0,24	-0,47	0,00
Implementer	3,4	0,33	0,04	0,62	0,22	0,02	0,12
Completer-finisher	2,4	-0,32	-0,53	-0,12	-0,18	-0,30	-0,06

A number of significant differences between means are in evidence, in particular where the matriculants (12th grade) and graduates (or higher) are compared. The findings will be discussed fully in chapter 7.

2 Overall investigation of Test, Questionnaire and Assessment Centre scores for the sample

A descriptive analysis of the test, questionnaire and assessment centre results of the sample was done. The analysis dealt with both the distribution of the scores and the correlations between the various scores.

2.1 Score distributions

Tables 6.7, 6.8, 6.9, and 6.10 show the distribution statistics for the total sample for the dependent variable, cognitive tests, personality measures and their sub-components, and the personal competencies.

TABLE 6.7: Descriptive statistics: dependent variable

Dependent variable	Valid n	Mean	Min	Max	Sd.
Acceleration index score	213	1,96	1	5	1,05

TABLE 6.8: Descriptive statistics: cognitive variables

Independent variables – cognition	Valid n	Mean	Min	Max	SD
Mental Alertness (MA) raw score	213	20,12	2	42	7,57
MA number attempted	213	34,81	11	42	2,03
MA efficiency index	213	0,58	0,08	1	0,20
Conceptual Reasoning Test (CRT) raw score	213	18,24	3	33	6,52
CRT number attempted	213	30,5	11	35	5,39
CRT efficiency index	213	0,57	0,09	1	0,18

TABLE 6.9: Descriptive statistics: personality variables

Independent variables – personality variables	Valid <i>n</i>	Mean	Min	Max	SD
E-I	213	-0,47	-28	26	13,79
N-S	213	-11,79	-33	16	10,71
T-F	213	12,5	-16	33	10,21
J-P	213	11,27	-21	28	11,39
Plant	213	31,1	0	100	26,34
Resource investigator	213	34,09	0	100	26,95
Co-ordinator	213	44,02	0	100	28,74
Shaper	213	28,14	0	100	24,84
Monitor-evaluator	213	40,72	0	100	30,78
Team worker	213	54,09	0	100	30,41
Implementer	213	46,45	0	100	29,09
Completer-finisher	213	71,13	0	100	25,5
Specialist	213	66,58	0	100	26,55

TABLE 6.10: Descriptive statistics: personal competencies

Independent variables -- personal competencies	Valid <i>n</i>	Mean	Min	Max	SD
Analysis	212	2,76	2	5	0,69
Probing and fact finding	212	2,35	1	4	0,55
Judgement	212	2,7	2	5	0,52
Decisiveness	212	3,2	2	5	0,56
Initiative	212	2,66	1	4	0,56
Planning, organising and control	212	2,29	1	4	0,54
Delegation	212	2,22	1	4	0,48
Assertiveness	212	2,95	1	4	0,46
Interpersonal sensitivity	212	2,71	1	4	0,60

Visually, it would appear that there are no marked anomalies in the distributions of the scores. Some skewness has occurred in the distributions of the Belbin Team Roles, notably for the Completer-Finisher and Shaper roles. Further, not all five rating-scale points (behaviourally-anchored rating scale) were used when assessing subjects' behaviour on the various personal competencies.

2.2 Correlations

For multiple regression to produce the "best linear unbiased estimates", it must meet the bivariate regression assumptions, plus one additional assumption: the absence of perfect multicollinearity. That is, none of the independent variables is perfectly correlated with another independent variable, or linear combination of other independent variables. A correlation matrix for the full sample was derived for all the cognitive, personality and personal competency variables. The results of the Pearson product-moment correlations are shown in table 6.11.

TABLE 6.11: Pearson product moment correlations

Correlation matrix, $n=213$, decimal signs omitted, correlation coefficient (2 digits) shown above, and probability below (3 digits),

Variable	Acc Ind	Qual	Age	Ana	PFF	Jud	Dec	Ini	Poc	Del	Ass	Per	Ips	MA cor	MA att	MA eff
Acceleration Index (Acc Ind)																
Qualification (Qual)	26 000															
Age	-23 001	-42 060														
Analysis (Ana)	18 010	20 004	-23 001													
Probing and fact finding (PFF)	21 003	16 020	-03 643	19 007												
Judgement (Jud)	13 067	27 000	-27 000	29 000	28 000											
Decisiveness (Dec)	14 040	17 013	-22 001	34 006	19 006	27 000										
Initiative (Ini)	18 010	23 001	-24 001	40 000	21 002	50 000	30 003									
Planning, organising and control (Poc)	06 397	15 028	-13 057	27 000	04 557	19 005	19 007	22 001								
Delegation (Del)	08 246	00 100	-02 729	06 353	14 049	-02 782	-01 863	19 005	14 041							
Assertiveness (Ass)	12 095	03 624	-12 062	20 004	12 086	29 000	44 000	35 000	19 006	07 341						
Persuasiveness (Per)	24 001	16 025	-14 040	25 000	18 008	24 001	15 028	25 000	15 032	04 523	30 000					
Interpersonal Sensitivity (Ips)	05 465	11 114	-08 271	13 060	254 000	18 009	07 290	17 013	-00 967	07 335	25 000	38 000				
M A correct (MA cor)	17 015	28 000	-40 000	23 001	10 156	21 078	12 078	19 007	05 44	07 236	08 236	24 001	13 059			
M A attempted (MA att)	-01 835	04 580	-18 010	01 882	02 806	17 013	01 869	-00 951	-04 546	-09 214	02 807	-02 788	-02 740	41 000		
M A efficiency (MA eff)	22 001	29 000	-36 000	28 000	10 138	16 017	16 025	21 002	07 284	13 056	11 112	29 000	19 006	88 000	-03 712	
CRT correct (CRT cor)	14 041	24 000	-38 000	23 001	09 217	21 011	17 011	18 010	14 037	04 605	14 051	17 011	07 296	74 000	37 000	63 000
CRT attempted (CRT att)	02 755	12 084	-16 020	13 003	06 362	14 041	13 066	03 615	06 415	-08 246	06 355	11 099	12 095	38 000	52 000	18 008
CRT efficiency (CRT eff)	16 020	22 001	-37 000	20 003	08 245	18 010	14 045	20 004	14 047	12 112	13 066	16 022	04 537	66 000	15 030	64 000
E-I continuum (EI)	15 028	02 735	-12 082	-02 776	15 028	-07 289	01 919	-03 989	-00 989	07 324	03 663	08 221	04 556	-04 567	-03 641	-02 784
N-S continuum (NS)	05 437	21 003	-19 007	03 629	07 303	08 229	09 216	02 751	00 965	-05 475	00 977	06 426	14 041	13 023	12 078	08 278
T-F continuum (TF)	03 716	10 147	-07 281	05 491	01 913	09 181	-03 672	-00 950	05 459	-08 910	-00 942	03 700	03 646	16 023	01 873	15 029
J-P continuum (JP)	01 848	-07 282	10 142	-08 243	-13 053	01 871	-08 224	-03 658	-01 843	03 677	00 962	-05 443	-11 116	-12 089	-04 600	-12 094
Plant (PL)	-04 550	12 086	-11 115	02 820	07 331	01 868	11 478	0496 478	-11 099	-03 711	-08 251	03 613	06 399	11 124	08 227	07 303
Resource investigator (RI)	14 042	10 143	-22 002	13 064	21 002	08 235	14 050	0575 690	03 690	-01 919	07 343	01 928	15 029	16 025	04 595	15 029
Co-ordinator (CO)	13 054	-00 957	08 265	04 533	-02 764	-11 120	-05 447	-05 32	-68 332	10 131	-10 139	-08 245	-09 179	-14 042	-12 092	-09 191

Shaper (SH)	13	01	-20	15	05	12	12	12	19	-03	14	09	03	18	13	13
	068	989	005	030	446	080	080	095	006	651	047	192	646	010	069	052
Monitor-evaluator (ME)	-03	14	-05	03	00	-02	-02	03	-05	-03	-05	04	-08	06	-06	09
	710	044	487	708	979	719	719	668	443	695	475	591	230	393	394	208
Team worker (TW)	01	-01	12	-16	-09	-08	-01	-03	-03	05	-07	-05	-03	-11	-08	-20
	884	844	074	021	178	257	831	676	676	480	309	502	641	116	221	169
Implementer (IMP)	-02	01	-02	04	-11	-08	-15	02	02	03	-01	-05	-02	01	05	00
	764	843	757	552	111	230	035	803	798	682	851	512	805	854	468	948
Completer-finisher (CF)	-10	-18	14	-03	-01	-13	-04	-12	-04	-01	-03	-04	00	-02	09	-05
	158	008	043	662	887	052	552	090	524	909	649	549	998	790	201	468
Specialist (SP)	-01	-01	12	-01	-01	00	-06	06	10	15	05	-01	-00	-02	01	00
	906	931	071	924	835	949	425	371	140	033	460	827	948	806	920	992

Variable	CRT cor	CRT att	CRT eff	E-I	S-N	T-F	J-P	PL	Ri	Co	SH	ME	TW	IMP	CF
CRT attempted (CRT att)	52														
	000														
CRT efficiency (CRT eff)	37	06													
	000	401													
E-I continuum (EI)	-03	02	-03												
	664	822	614												
S-N continuum (SN)	11	06	12	09											
	106	374	092	171											
T-F continuum (TF)	10	03	12	-05	00										
	133	714	088	433	939										
J-P continuum (JP)	-16	-02	-16	-14	-41	06									
		756	019	049	000	399									
Plant (PL)	10	07	08	07	32	14	-17								
	163	320	230	294	000	045	014								
Resource Investigator (RI)	21	12	18	35	23	17	-27	22							
	002	095	008	000	001	013	000	002							
Co-ordinator (CO)	-05	-08	-02	12	05	-13	-04	-09	09						
	432	245	732	078	486	066	055	210	189						
Shaper (SH)	24	06	26	06	05	20	-02	-10	09	-11					
	001	349	000	364	493	005	781	140	171	106					
Monitor-evaluator (ME)	00	-07	04	-10	12	17	-10	02	-02	-06	-02				
	950	303	551	119	088	013	159	736	729	407	763				
Team worker (TW)	-08	-09	-06	-09	-13	-34	05	-07	-23	-01	-38	-23			
	224	193	357	204	059	000	495	291	001	839	000	001			
Implementer (IMP)	00	10	-05	00	-19	06	25	-20	-13	-05	-01	-29	-15		
	972	158	486	984	005	049	000	004	067	505	880	000	030		
Completer-finisher (CF)	-05	12	-12	-10	-12	-07	14	-28	-22	-08	-14	-17	-15	13	
	439	088	072	166	074	346	047	000	001	222	036	017	033	055	
Specialist (SP)	-03	00	-02	-40	-20	11	23	-17	-40	-24	-18	-13	13	02	12
	671	995	743	000	003	107	001	012	000	000	008	063	073	718	083

3 Testing the hypotheses

The forward stepwise regression analysis procedure was used to conduct the analysis on the data. The independent variables, excluding biographical variables, were regressed against the Acceleration Index score. The results are presented in tables 6.12, 6.13, 6.14 and 6.15.

TABLE 6.12: Stepwise regression on the dependent variable acceleration index for the total sample

Regression analysis for dependent variable: Acceleration Index Score					
R=0,461, R ² =0,21, Adjusted R ² = 0,172, F=5,87, p<0,00, Standard Error of estimate: 0,95					
Intercept 0,34.					
	n=213	BETA	Std Error of BETA	t	p-level
Decisiveness		0,241	0,067	3,53	0,00
Persuasiveness		0,143	0,067	2,14	0,033
Co-ordinator		0,124	0,065	1,93	0,054
E-I Index score		0,136	0,064	2,11	0,036
MA raw score		0,115	0,063	1,72	0,084
Plant		-0,097	0,066	-1,46	0,144
Completer-finisher		-0,102	0,065	-1,56	0,118
J-P Index score		-0,0810	0,064	-1,25	0,211
Analysis		0,077	0,69	1,11	0,265

TABLE 6.13: Stepwise regression on the dependent variable acceleration index for the male graduate sample

Regression analysis for dependent variable: Acceleration Index Score				
R=0,777, R ² =0,60, Adjusted R ² = 0,46, F=4,38, p<0,00, Standard Error of estimate: 0,81				
Intercept -2,74				
n=32	BETA	Std Error of BETA	t	p-level
Delegation	0,655	0,147	4,44	0,00
Implementing	-0,737	0,165	-4,46	0,00
Shaper	0,366	0,140	2,60	0,02
N/A raw score	0,547	0,164	3,32	0,00
Specialist	-0,304	0,157	-1,93	0,066
Analysis	0,350	0,163	2,13	0,043
Planning, organising and control	-0,198	0,160	-1,23	0,228
J-P Index score	-0,150	0,147	-1,019	0,318

TABLE 6.14: Stepwise regression on the dependent variable acceleration index for the male matriculant sample

Regression analysis for dependent variable: Acceleration Index Score				
R=0,606, R ² =0,367, Adjusted R ² = 0,31, F=5,90, p<0,00, Standard Error of estimate: 0,93				
Intercept 1,8				
n=60	BETA	Std Error of BETA	t	p-level
E-I Index score	-0,278	0,103	2,70	0,008
Monitor-valuator	-0,178	0,110	-1,611	0,11
Decisiveness	0,377	0,1099	3,42	0,00
Implementer	0,302	0,115	2,60	0,01
Delegation	-0,219	0,105	-2,07	0,41
Co-ordinator	0,165	0,105	1,57	0,11

TABLE 6.15: Stepwise regression on the dependent variable acceleration index for the female matriculant sample

Regression analysis for dependent variable: Acceleration Index Score

R=0,53, R²=028, Adjusted R²= 0,172, F=2,61, p<0,017, Standard Error of estimate: 0,70

Intercept -2,55

	n=53	BETA	Std Error of BETA	t	p-level
Judgement		0,315	0,12	2,57	0,013
Delegation		0,217	0,11	1,85	0,069
MA raw score		0,245	0,12	2,11	0,038
T-F Index: score		0,189	0,12	1,59	0,117
Co-ordinator		0,173	0,12	1,45	0,150
Persuasiveness		0,160	0,12	1,32	0,190
Shaper		-0,142	0,12	-1,16	0,250
Planning, organising and control		0,136	0,12	1,11	0,270

SUMMARY, DISCUSSION OF RESULTS AND CONCLUSION

1 Overview of the study

The financial services industry, and in particular banking, has become increasingly competitive since the mid-1980s. South Africa has, in this respect, lagged behind its European, Asian and North American counterparts, but in common with these areas, greater competition was stimulated in this country's financial services industry mainly through the entry of newcomers to what had been regarded as the exclusive province of the banks. A further factor was shrinking interest margins and their effect on the profitability of the banks.

Increased competition led to a greater demand for the scarce management and leadership skills needed to lead the banks through the turbulent times ahead. Accordingly, the ability to outpace one's competitors in identifying and developing high calibre first-line managers capable of performing well in a rapidly changing environment, and, in fact, of outdoing their counterparts in competitor banks, became prized as a strategic lever that would result in competitive advantage.

A review of the literature on management and leadership, followed by comprehensive in-house research, culminated in the development of a conceptual model consisting of factors which were associated with

managerial success in a changing environment. This "Successful Manager Profile", as it is called, contains three domains, each consisting of a number of factors. Subsequently, an assessment battery was devised to measure the three domains - cognitive abilities, personality variables and personal competencies - of the "Successful Manager Profile".

A sample of 287 employees was assessed during 1991 and 1992 using assessment centre technology, psychometric tests and questionnaires. Five years later (in 1996 and 1997), criterion data, which consisted of the final organisational level attained, were collected. The bank no longer employed 74 of the subjects from the original sample, and they were therefore excluded from the final sample data set.

The research question - whether the variables contained in the "Successful Manager Profile" and measured in the assessment battery were indicative of job success - was investigated using Stepwise Multiple Regression analysis.

2 Discussion of results

The aim of the study is to investigate the relationship between job success and cognitive ability, personality variables and personal competencies. The discussion of the results will be structured around each component and presented in terms of the testing of the hypothesis.

2.1 Job success

A null hypothesis that no relationship existed between cognitive ability, personality variables and personal competencies was formulated.

The results of the stepwise multiple regression analysis, however, rejected the null hypothesis in favour of the alternative hypothesis. It was found that a relationship does exist between job success and cognitive ability, personality variables and personal competencies ($R=0,46$; $R^2=0,212$).

Significant differences in means between gender cohorts and groups categorised by qualification (matriculants versus graduates) were observed.

2.1.1 Gender

The mean Acceleration Index score for males was 2,17 as opposed to 1,67 for females ($p<0,001$). This clearly indicates that men, on average, are promoted more quickly than women. Further, the mean age for the female cohort in the sample (34,21) differed significantly from the mean age (31,40) for the male cohort ($p>0,001$).

This appears to be the result of a variety of factors, such as discrimination in the workplace (cultural issues), or choices made by the female subjects. Hoyt (1989) reports that, although the number of women (in the USA) in professional and managerial positions nearly doubled between 1970 and 1980, full-time female employees still earned 34% less than their male counterparts. Seligman (1994, p.49) asserts that: "It is not surprising that women, like people from minority groups, often perceive a discrepancy between their aspirations and their expectations and see themselves as unlikely to realize their career goals."

Fitzgerald and Crites (1980) observe that many women delay the establishment and maintenance phases of their career in order to focus on a homemaking phase in their personal lives. Although this process has been moderated by increasing age at first marriage, the tendency to delay childbearing and the declining birth rate, most women continue to view marriage and childbearing as important aspects of their lives.

Although this tendency for women to move through the organisational hierarchy more slowly is not unique to the company in which the study was conducted, and may have various explanations, it may affect the effectiveness of the criterion, underestimating R and R^2 for the combined full sample.

2.1.2 Qualifications

Categorical data analysis and a one-way analysis of variance (followed by Scheffé's *post-hoc* tests) were done for four groups, based on the highest educational level attained. Employees were categorised as follows: 1: < matriculation certificate (12th grade), 2: matriculation (12th grade), 3: certificate/diploma level qualification, and 4: degree (or post-graduate qualification). Significant differences in means on the criterion score were found in the comparison between the matriculation and degree groups. The mean Acceleration Index score for matriculants was 1,30 as opposed to the mean score for the degreed group of 2,71 ($p=0.001$).

Barret and Depinet (1991) conducted a meta-analytic study of research in which academic achievement (grades) was used to predict occupational success. The results of this study show a relationship between academic performance and occupational success which may stem from underlying associations between academic performance and intellectual ability, motivation, and

attitudes toward work. Hunter (1986) supports this possibility by demonstrating through path analysis that higher ability leads to increased job knowledge, which in turn leads to better performance. This relationship has also been found at varying educational levels, such as medical school graduates, MBAs, college graduates, and high school graduates in the USA (Barret & Depinet, 1991).

A review of the correlation matrix (table 6.11) in chapter 6 revealed that, apart from the correlation between the Acceleration Index score and qualifications ($r=0,26$, $p<0,001$), there were statistically significant correlations between qualifications and both the Mental Alertness (MA) test (raw score, $r=0,28$, $p<0,001$; efficiency index: $r=0,29$, $p<0,001$) and the Conceptual Reasoning test (CRT) (raw score, $r=0,24$, $p<0,001$; efficiency index: $r=0,22$, $p<0,001$). In view of the above, it stands to reason that the difference in means observed between the matriculated and degreed groups on the Acceleration Index score can be explained by an underlying cognitive ability factor. Similar findings have been reported by Akkerman, 1988; Fleishman, 1972; Hunter, 1986; and Hunter, Schmidt and Judiesch, 1990.

2.2 The significance of cognition

My literature review and in-house role analysis indicate that cognitive ability, particularly general reasoning ability and inductive reasoning skills, are requisite abilities for managerial success. These were measured by administering the MA and the CRTs to employees in the sample. In addition, an Efficiency Index score was calculated for each subject on both tests by dividing the raw score achieved by the total number of items attempted. The Efficiency Index score is an indication of the subject's approach to solving problems having a right or wrong answer - a high score would indicate that the person makes few errors.

A review of the correlation matrix (table 6.11) revealed very high intercorrelation between MA raw score and Efficiency Index score, and the CRT raw score and Efficiency Index score (see Table 7.1). The high intercorrelations found between the MA and CRT variables support the findings of Colberg et al (1985), who demonstrated the congruence of the inductive and deductive models in the measurement of reasoning abilities:

The results of the deductive/inductive tests lend psychometric support to the logical convergence of induction and deduction ... Data from these runs support the psychometric feasibility of such a unitary approach. The factor loadings obtained for the experimental tests were essentially the same.

In addition, Gustafsson's (1989) analysis shows that "g", the higher order factor, has a significant loading of special abilities which contribute to providing the best estimate of it.

TABLE 7.1: Correlations between cognitive ability measure variables

Pearson's Product-Moment Correlations				
Marked correlations are significant at $p > 0.05$				
VARIABLE	MA raw score	CRT raw score	MA Efficiency Index score	CRT Efficiency Index score
MA raw score	1,00	0,74* $p=0,00^*$	0,89* $p=0,00^*$	0,66* $p=0,00^*$
CRT raw score	-	-	0,63* $p=0,00^*$	0,89* $p=0,00^*$
MA Efficiency Index score	-	-	1,00	0,64* $p=0,00^*$
CRT Efficiency Index score	-	-	-	1,00

As the intention was to conduct a multiple regression analysis using cognitive variables, the high intercorrelations between the variables presented a problem in terms of multicollinearity (Lewis-Beck, 1980).

In view of the above it was decided to use the MA scores as indicators of cognitive ability in the regression analysis. The decision was taken after consideration of the following issues:

- The MA measures general thinking ability, of which inductive reasoning is a sub-component. Lätti and Verster (1975, p.6) state: "The purpose of the test therefore is to discriminate within a group ... on intellectual ability, especially the reasoning kind required by a wider range of problems". In addition, the research of Colberg et al. (1985) indicates a convergence between the inductive-deductive models in the measurement of intelligence.
- The MA assesses reasoning ability through items based on both numerical and verbal problems, which closely resembles the type of presentation of problems in the junior managerial work cohort.
- Hesketh and Robertson (1993, p.4) argue that "practically, from an employer's perspective, the most sensible and generalisable predictors to use are tests of general ability".
- The correlation between MA and the criterion (Acceleration Index score) of $r=0,17$ ($p=0,02$) is slightly higher than the correlation of the CRT with the criterion ($r=0,14$, $p=0,04$).

2.3 The significance of mental alertness

2.3.1 Correlations

2.3.1.1 Job success

A correlation of 0,17 between MA scores, as a measure of cognitive ability, and the Accelerator Index score, as a measure of job success, was found. This is lower than the correlations of 0,31 between general cognitive ability and job performance found by Hunter (1986). This difference may be attributed to the nature of the criterion used in this study, which is a global measure and, according to Akkerman (1989), is contaminated by external variables other than job performance.

2.3.1.2 Personality variables

Statistically significant correlations (at the 0,05 level) were found between MA and the Thinking-Feeling Index ($r=0,16$, $p=0,023$) and the following Belbin Team-roles: Resource-Investigator ($r=0,16$, $p=0,025$), Co-ordinator ($r=-0,14$, $p=0,042$) and Shaper ($r=0,18$, $p=0,010$).

Myers and McCauly (1985, p.12) define the T preference on the T-F Index as follows:

Thinking is the function that links ideas together by making logical connections. Thinking relies on principles of cause and effect and tends to be impersonal. People who are primarily orientated toward thinking may develop characteristics associated with thinking: analytical ability, objectivity ...

It seems, therefore, that there ought to be a link between ability to think (as measured by the MA) and a preference for using thinking as a way of bringing life events into harmony (and thus displaying this as an enduring personality characteristic).

The Belbin Resource-Investigator team role requires a marked inquisitiveness and a capacity to see the possibilities for improvement or innovation (Belbin, 1996). This requirement has a strong underlying cognitive component, which may explain the correlation found between MA scores and the Resource-Investigator role.

Shapers are defined by Belbin (1996, p.9) as "highly motivated people with a lot of nervous energy and a great need for achievement". The positive correlation between MA and the SH team role may be explained by the need for achievement and the motivation this may have given subjects to perform well during the tests. Motivation to perform well on cognitive ability tests is reported

to have a positive influence on test results (Barret & Depinent, 1991; McClelland, 1971).

The Co-ordinator role, however, has a weaker cognitive component associated with it. Belbin (1996, p.8) states: "Co-ordinators are ... not necessarily the cleverest members of a team", which indicates that intellectual capability is not a prerequisite in the Co-ordinator (CO) role. This may explain the negative correlation found between the CO team role and the MA scores.

2.3.1.3 Personal competencies

Significant positive correlations were found between subjects' scores on the MA and those personal competencies that require reasoning capability.

The competencies are: Analysis ($r=0,23$, $p<0,001$), Judgement ($r=0,206$, $p<0,003$), Decisiveness ($r=0,129$, $p<0,025$), Initiative ($r=0,19$, $p<0,007$), and Persuasiveness ($r=0,24$, $p<0,001$). The relationship between the MA scores and these competencies demonstrates the underlying reasoning ability required in performing the composite problem-solving tasks inherent in junior managerial jobs (as defined by the personal competencies).

2.3.1.4 Multiple regression analysis

The MA raw score, although included in the regression equation for the total sample, was not significant ($p=0,084$). It was, however, significant in the regression equations for male graduates and female matriculants. A review of the correlation matrix indicated that a significant positive correlation exists between MA raw scores and educational level attained. Ackerman (1988) asserts that a general cognitive-intellectual ability underlies skill acquisition, which may

explain the correlation between ability and level of education achieved. This also applies to the learning of work related competencies, and it can be argued that employees who acquire more competencies, more quickly as well as to a greater depth, will make progress in an organisation.

No logical explanation can be offered for the fact that MA scores do not correlate with the indicator of job success for the male matriculant group, except that from reviewing the variables included in the regression equation, all have a strong operational focus (and not such a strong problem-solving focus). Therefore, it may be that matriculated managers achieve job success through performing well on tasks of a lower cognitive complexity. A further possible explanation for the exclusion of MA raw scores can be found in the choice of the criterion. Cascio (1991, p.309) questions the use of global measures, such as acceleration, as a criterion of managerial success:

Hence, such measures often serve to obscure more than they reveal about the behavioral bases for managerial success. We cannot know with certainty what portion of the global rating is based on actual job behaviors and what portion is due to other factors such as luck, education, "having a guardian angel at the top", political savvy ...

2.4 The significance of personality

The results of one-way analysis of variance procedure indicated that there are statistically significant differences between the N-S Index score means for the matriculated (12th grade) group and the graduated group ($F=2.65$). The Scheffè *post-hoc* test indicated that graduates appear to prefer a more "Intuitive" style as opposed to the matriculants, who favour a more "Sensing" style.

Two apparently opposing explanations can be offered. First, further education develops the perception of possibilities, meanings and

relationships, which becomes so ingrained as to form part of the individual's personality characteristics. Second, an individual's propensity for seeking meanings and relationships results in the achievement of academic qualifications. However, no significant correlation between the S-N Index and the criterion was found.

2.4.1 Criterion score

The E-I Index score ($r=0,15$, $p=0,028$) and the Resource- Investigator team role score ($r=0,141$, $p=0,04$) correlate positively with the criterion score.

A close relationship exists between the underlying constructs of the "extraversion" dimension of the MBTI and the Resource-Investigator team role. Myers and McCaully (1985, p.13) comment as follows on the preference for the extraverted attitude:

Persons habitually taking the extraverted attitude may develop some or all of the characteristics associated with extraversion: ... an action orientated, sometimes impulsive way of meeting life, ... frankness, ease of communication, or sociability.

The Resource-Investigator team role is defined by Belbin (1996, p.6) as "quick off the mark extraverts... good at communicating with people ... unless they remain stimulated by others, their enthusiasm rapidly fades". This sharing of underlying constructs may explain the correlation of $r=0,35$, $p<0,001$ between E-I Index scores and Resource-Investigator team role scores.

The correlation between E-I Index scores and the measure of job success is supported by previous studies quoted in the literature (Tett, et al., 1991). A meta-analysis conducted by Barrick and Mount (1991) revealed that extraversion is associated with managerial job success ($r=0,11$). Robertson and Kinder (1993) conducted a meta-analysis involving 20 validation studies using the Occupational

Personality Questionnaire, where the criterion-related validity of some personality variables was explored, and reported significant correlations between OPQ scales loading on an extroversion component and criterion areas.

2.4.2 Personal competencies

Significant correlations were found between the E-I Index score and Probing and Fact-Finding ($r=0,152$, $p=0,028$) and the N-S Index Score and Interpersonal Sensitivity ($r=0,143$, $p=0,041$).

The positive correlation between the E-I Index score (Extraversion) and Probing and Fact-Finding (PFF) may be explained by the fact that the PFF competency requires an external, interactive focus on making contacts and obtaining information. Apart from the skill component inherent in the competency, this correlation also indicates that its successful execution requires an underlying extraverted personality characteristic.

The Interpersonal Sensitivity (IPS) competency is defined as the ability to put oneself in the shoes of another person, and to display sensitivity in dealing with others. Myers and McCaully (1985, p.12) indicate that the N-S Index, and specifically the N or Intuitive preference, "permits perception beyond what is visible to the senses". The relationship between N (on the N-F Index) and the IPS competency might indicate an underlying intuitive personality characteristic requirement to perform well on the IPS competency

2.4.3 Other personality dimensions

A number of statistically significant correlations were found between the Belbin Team Roles and the MBTI Index scores. For ease of

discussion the definitions of the various roles and indexes are given in table 7.2.

People with a higher preference for extroversion on the MBTI would also display a stronger Resource-Investigator team role. This correlation is consistent with the requirement of building and exploiting networks of people to attain objectives (a characteristic of the Resource Investigator role), and being more extroverted.

The correlation between a preference for "N" on the MBTI and a "Plant" team role is noteworthy. Myers and McCaully (1987) describe the intuitive types (N) as people who enjoy solving new problems and who are patient with complicated situations. The "N" preference could, therefore, underpin the preference for the Plant team role, and to a lesser extent, that of the Resource-Investigator. The link between the "N" (intuition) preference and the Plant team role may also explain the negative correlation between a preference for "N" and the Implementer team role ($r=-0,19$, $p=0,005$). The Implementer role is primarily concerned with doing, whereas Myers and McCaully (1987, p.80) report that individuals with a preference for "N" tend to "Dislike taking time for precision... are impatient with routine details ... and ...work with bursts of energy, powered by enthusiasm, with slack periods in between".

The preference for thinking (T) correlates positively with the Plant, Resource-Investigator, Shaper and Monitor-Evaluator team roles, and negatively with the Team-Worker role.

Myers and McCaully (1987) describe people with a stronger "T" preference as being more analytical, responding better to thoughts, and having some difficulty responding to people's feelings. This provides an explanation for the negative correlation between the "T" preference and the Team-Worker team role, which is primarily concerned with creating harmony and valuing people's contributions.

A stronger preference for reaching closure – the “J” (judging) on the MBTI - indicates an orientation towards getting things done and settled, working to a plan and disliking interruptions. At the conceptual level, the “J” preference should correlate positively with the doing-type team roles (Implementer and Completer-Finisher). Statistically significant correlations were found between the “J” preference and the Implementer team role ($r=0,25$, $p=0,001$) and the Completer-Finisher team role ($r=0,14$, $p=0,047$).

Of note is the negative correlation between a preference for “J” and the Plant and Resource-Investigator team roles. By implication, this means that a preference for leaving things open for changes, adapting well to changing situations (a “Perception” [P] preference on the MBTI) could be associated with the Plant and Resource-Investigator team role.

TABLE 7.2: Pearson product-moment correlations between MBTI index scores and Belbin team roles

Correlation Matrix, correlations shown in bold are significant at $p \leq 0,05$; $n=213$, decimal signs omitted, correlation coefficient (2 digits) shown above, and probability below (3 digits),

	E-I Index E: Aware of and reliant on the environment for stimulation, action-orientated, frank, communicates easily, sociable I: Interested in clarity of concept, reliant on endurance, thoughtful, enjoys privacy	N-S Index N: Perception of possibilities, meanings, and relationships by means of insight S: Sensing what exists, realism, memory for details, practicality	T-F Index T: Links ideas and makes logical deductions, relies on principles of cause and effect, analytical, objective F: Uses personal values, need for affiliation, capacity for warmth, preservation of the past	J-P Index J: Making decisions, seeking closure, planning operations. P: Curious, open to new events and change, adaptable
Plant Plants are innovators, operate by themselves, tend to be introverted, are clever, original but may be weak communicators	0,07 $p=0,294$	0,32 $p<0,001$	0,14 $p=0,045$	-0,17 $p=0,0140$
Resource-Investigator Natural negotiators, adept at exploring new opportunities. Outgoing, relaxed with a strong inquisitive sense	0,35 $p=0,00$	0,233 $p<0,001$	0,17 $p=0,13$	-0,27 $p<0,001$
Monitor-Evaluator Serious minded, prudent individuals, slow in making decisions, critical and make shrewd judgements	-0,11 $p=0,119$	0,12 $p=0,086$	0,17 $p=0,013$	-0,09 $p=0,159$
Co-ordinators Mature, trusting and confident, delegate, may not be the cleverest member of the team	0,12 $p=0,078$	0,05 $p=0,486$	0,05 $p=0,486$	-0,04 $p=0,546$
Shaper Highly motivated with a lot of nervous energy, and a strong need for achievement, lack interpersonal understanding, like to lead and push for action	0,06 $p=0,364$	0,05 $p=0,493$	0,20 $p=0,05$	-0,02 $p=0,781$
Team worker Supportive, mild, sociable, flexible and adaptable, good listeners and are generally popular members of a group, may be indecisive	-0,09 $p=0,204$	-0,13 $p=0,059$	-0,34 $p<0,001$	0,05 $p=0,495$
Implementer Self-control and common sense, favour hard work and tackle problems in a systematic fashion	0,00 $p=0,984$	-0,19 $p=0,005$	0,06 $p=0,409$	0,26 $p<0,001$
Completer-Finisher Follow through, attention to detail, not keen on delegating	-0,09 $p=0,166$	-0,12 $p=0,074$	-0,06 $p=0,346$	0,14 $p=0,047$
Specialist Acquire technical skill, committed to the technical field, maintain standard	-0,4 $p<0,001$	-0,20 $p=0,003$	0,11 $p=0,107$	0,23 $p<0,001$

2.4.4 Regression analysis

In the regression analysis for the total sample, and for the male matriculants (12th grade) group, the E-I Index score was included as a significant predictor of managerial job success. This supports the findings of the meta-analytic studies of Barrick and Mount (1991), Robertson and Kandola (1982) and Tett et al. (1991) in which it was reported that a relationship exists between extraversion and managerial job success.

However, the E-I Index score was excluded in the regression equation for the male graduate and female matriculants. In the male graduate group, the J-P Index was entered, but found to be not significant. Similarly, in the female matriculant cohort, the T-F Index was entered but found to be not significant.

The predictor, Co-ordinator team role (CO), was significantly correlated with the criterion when introduced into the equation for the total sample.

2.5 *The significance of personal competencies*

2.5.1 Biographical variables

2.5.1.1 Qualifications

The categorical data analysis results revealed (refer to chapter 6, table 6.6) that the following personal competencies all have statistically significant variance in means when grouped according to educational level attained: Analysis, Decisiveness, Initiative, Judgement, Persuasiveness, and Probing and Fact-Finding.

It is noteworthy that all those personal competencies with a routine component (Delegation and Planning, Organising and Control) or those with a strong personality underpinning (Assertiveness and

Interpersonal Sensitivity) did not show any variance in means when categorised by educational level attained.

The significant variance in means when categorised by educational level attained may be explained by the fact that these competencies are learned behaviours, and exposure to further education either developed some of these competencies, or enabled the subject to develop the competencies.

The competencies of Delegation and Planning, Organising, and Control, relate to the daily routine component of managerial work. The fact that no variance in means was observed for different educational groups can, in part, be explained by the definition and rating scale used to measure these two personal competencies. Here, the ability to tell others what, how, and by when tasks should be completed is measured. Thus, it may be argued that this skill is a function of job-related training rather than of education. However, the fact that there is no correlation between these dimensions and the Co-ordinator team role, which measures essentially the same construct, questions whether the competencies measure what they purport to measure.

The statistically insignificant variance in means between the different educational cohorts on the Assertiveness and Interpersonal Sensitivity (IPS) competencies may be explained by the fact that, conceptually, these competencies are underpinned by personality variables rather than by cognition or education.

This reasoning is supported by the correlation between IPS and the N-S (N component) correlation of $r=0.123$, $p=0.041$. Further, the Assertiveness competency correlates with the Shaper team role which measures essentially the same characteristics.

2.5.2 Criterion

Significant correlations were found between all the personal competencies and the Acceleration Index Score, except for Planning, Organising, and Control (POC) ($r=0,11$, $p=0,088$), Delegation (Del) ($r=0,04$, $p=0,537$) and Interpersonal Sensitivity (IPS) ($r=0,05$, $p=0,015$).

The significant correlations were expected, as the competencies were developed from a thorough job analysis and factors associated with success in the workplace.

The lack of correlation between IPS and POC with the Acceleration Index Score cannot be explained.

2.5.3 Regression analysis

The role of personal competencies will be discussed fully in the next section.

2.6 *The predictive validity of the “Successful Manager Profile”*

In terms of the sub-hypotheses, the predicative validity of the “Successful Manager Profile” was investigated for three different sub-groups: male matriculant, female matriculant, and male graduate.¹

The regression equation for each group included different independent variables. Although, for each of the sub-groups, there is a relationship between cognition, personality variables and personal competencies and job success, the fact that each regression equation differed in the variables included casts light on what makes

¹ The female graduate group was excluded from the analysis because the number of female graduates in the sample was too small.

people successful at their jobs in the particular organisation examined.

2.6.1 Male matriculant group

The regression equation (chapter 6, table 6.14) included the following variables (the order in which the variables were included in the regression equation is given in brackets):

Personality variables:	E-I Index score (1)
	Monitor-evaluator (2)
	Implementer (4)
	Co-ordinator (6)
Personal Competencies	Decisiveness (3)

The cognitive variable was not included in the equation.

The coefficient of multiple determination achieved by the analysis for this cohort is $R^2 = 0,37$, which means that roughly 37% of the variance of job success is explained by the variables included in the regression formula. The results of the regression analysis for the male matriculant sample provide sufficient support for both the generic model of variables associated with high performing managers (figure 4.1) and the organisation-specific model of variables associated with high performing managers (figure 4.2) to reject the null hypothesis in favour of the alternative hypothesis: For male subjects with a matriculation certificate, a relationship exists between job success, on the one hand, and cognition, personality variables and personal competencies, on the other.

The profile that emerges for non-graduate managers is one of conscientious implementers of policy and procedure. The introverted personality (I) characteristic implies reliance on the environment for

stimulation and guidance. Myers and McCaully (1985) state that people with an "I" preference typically show a reliance on structure and rules and prefer stability and enduring concepts to change.

Belbin (1996, p.11) describes individuals who play the Implementer team role as follows:

... have practical common sense and a good deal of self-control and discipline. They favour hard work and tackle problems in a systematic fashion. On a wider front, the Implementer is typically a person whose loyalty and interest lie with the company and who is less concerned with the pursuit of self interest ... may lack spontaneity and show signs of rigidity.

The personal competency of Decisiveness refers to the speed with which decisions are made, and how rigidly those decisions are adhered to (rule-bound). The negative beta weight for delegation implies that managers in this group actually perform tasks and duties themselves, and that they do not act as true managers who empower others to act.

It is clear that male matriculated managers engage (successfully) in tasks requiring rule-bound decision making which does not require a high level of cognitive ability. Further, they require structure and act within defined parameters.

2.6.2 Female matriculant group

The regression equation (chapter 6, table 6.15) included the following variables (the order in which the variables were included in the regression equation is given in brackets):

Personality variables:	T-F Index score (4)
	Co-ordinator (5)
	Shaper (7)

Personal Competencies	Judgement (1)
	Delegation (2)
	Persuasiveness (6)
	Planning, Organising & Control (8)
Cognitive variable	Mental Alertness (3)

The coefficient of multiple determination achieved by the analysis for this cohort is $R^2 = 0,28$, which means that roughly 28% of the variance of job success is explained by the variables included in the regression formula. The results of the regression analysis for the female matriculant sample provide sufficient support for both the generic model of variables associated with high performing managers (figure 4.1) and the organisation-specific model of variables associated with high performing managers (figure 4.2) to reject the null hypothesis in favour of the alternative hypothesis: For female subjects with a matriculation certificate, a relationship exists between job success, on the one hand, and cognition, personality variables and personal competencies, on the other.

The profile which emerges for a “successful matriculated female manager” is different from that of male matriculated managers. Females engage in problem-solving tasks that require thinking capability (as measured by the MA raw scores). This supports the findings of Hunter (1986) where the meta-analysis indicated that general cognitive ability predicts job success.

The personal competency of Judgement is defined as the ability to weigh up facts and to take sound decisions. This ability to take sound decisions emerged as an important requirement in the literature review (Binedell & Nurick, 1994; Cullen, 1983; Jaques, 1976, 1989,

1990, 1991, 1994; Mumford, 1996; Spencer & Spencer, 1993). This was also supported by the findings of the organisation-specific role analysis. The personal competency of Delegating refers to the capability to get others to contribute to the unit's objectives in a meaningful way. The literature review revealed that this is a core competency for managers in a changing, dynamic environment (Cockerill, 1989, 1993; Fink, 1996; Jaques, 1990; Rosener, 1990; Spencer & Spencer, 1993). Female managers, in order to be successful, also have to be persuasive and not hard driving (as defined by the Shaper team role).

A comparison between the male matriculated and female matriculated category reveals that the two groups are displaying (and using) fundamentally different abilities and behaviours in order to achieve success.

Matriculated male managers are typically implementing the rules to keep the business going – and showing little concern for high level process improvement and problem solving. By contrast, in order to advance in the organisation female managers have to display a host of different behaviours, such as showing sound judgement, being democratic (they must delegate, persuade others to accept their views) and present clear plans for getting things done (Planning, Organising and Control). Also, female managers must show that they use logic and facts in decision making (a preference for Thinking “T” on the MBTI) and must refrain from appearing too assertive or emotional (not assuming the Shaper team role).

While a number of explanations may be advanced to explain the differing standards applied to men and women, such as the “glass ceiling” effect, organisation culture, stereotyping, and so on, further elaboration on this theme falls outside the scope of this study.

From the above it can be stated, however, that matriculated female managers, in contrast with their matriculated male colleagues, are

successful in their jobs because they display the new managerial role competencies suited to dynamic, changing organisations.

2.6.3 Male graduate group

The regression equation (chapter 6, table 6.13) included the following variables (the order in which the variables were included in the regression equation is given in brackets):

Personality variables:	Implementer (2)
	Shaper (3)
	Specialist (5)
	J-P Index score (8)
Personal Competencies	Delegation (1)
	Analysis (6)
	Planning, Organising & Control (7)
Cognitive variable	Mental Alertness (4)

The Implementer and Shaper Team roles are near opposites. As stated before the Implementer team-role profile signifies hard work and loyalty to the company. In contrast, individuals who play the Shaper team role are described by Belbin (1996, p.9) as follows:

Shapers are highly motivated people with a lot of nervous energy and a great need for achievement. Usually they are aggressive extraverts and possess strong drive ... Headstrong and assertive, they tend to show strong emotional response to any form of disappointment or frustration.

The above provides further support for the finding that extraversion is related to managerial success (Barrick & Mount, 1991).

The MA raw score predictor was significant when introduced into the regression equation for male graduates. This further supports the

findings of Barret and Depinet (1991) and Hunter (1986) in which meta-analyses indicated that cognitive ability predicts job performance.

The personal competency of Analysis refers to the ability to obtain data and to transform this into information. Analysis was found to be a crucial job-related competency during the organisation-specific role analysis.

Delegating refers to the ability to get others to contribute to the unit's objectives in a meaningful way and is a core competency for managers in a changing, dynamic environment. It also suggests that managers do not get involved in menial routine duties, but rather focus on activities that involve thinking, which add value.

The profile that emerges from analysing the variables included in this regression equation is the best fit of the conceptual model of a successful manager in a dynamic, changing environment as developed from the literature review and intra-organisational research: A person with high general cognitive ability who focuses his or her energy on conceptual work (transforming data into information), who is extraverted, and who uses others to achieve the objectives of the unit or section.

This profile clearly indicates that graduate employees are successful in their jobs because of their involvement in higher level, value adding activities (Jaques, 1989). The coefficient of multiple determination achieved by the analysis for this cohort is $R^2 = 0,60$.

2.6.4 The total sample

The regression equation (chapter 6, table 6.12) included the following variables (the order in which the variables were included in the regression equation is given in brackets):

Personality variables:	Co-ordinator (3)
	E-I Index score (4)
	Plant (6)
	Completer-Finisher (7)
	J-P Index score (8)
Personal Competencies	Decisiveness (1)
	Persuasiveness (2)
	Analysis (9)
Cognitive variable	Mental Alertness (5)

The coefficient of multiple determination is 0,21, which means that roughly 21% of the variance of job success is explained by the variables contained in the regression formula.

The results of the regression analysis for the overall sample provide sufficient support for both the generic model of variables associated with high performing managers (figure 4.1) and the organisation-specific model of variables associated with high performing managers (figure 4.2) to reject the null hypothesis in favour of the alternative hypothesis: A relationship exists between job success, on the one hand, and cognition, personality variables and personal competencies, on the other.

The discussions in the preceding sections, however, clearly show that the regression equations for separate groups have more heuristic value as they provide better explanations of the ideal profile of the incumbents, and which characteristics result in optimal success for that group.

2.7 Practical implications

There are two major categories of practical implications for the organisation that may be derived these findings. First, the selection of individuals for promotion can be improved, and second, the findings may have strategic implications for organisations regarding people management practices.

2.7.1 The selection of employees for promotion

The results of the study have the greatest practical application in the identification of individuals for promotion. Apart from the fact that the model is a valid predictor of job success (total sample: $R=0,46$, $R^2=0,21$, adjusted $R^2=0,17$), the different variables included in the regression analyses for the different gender and qualifications groups point to certain consequences of promotion decisions.

Male employees with no tertiary qualifications, if promoted, would not completely satisfy the role requirements for managers in a dynamic, changing environment. This group of employees would tend to revert to doing structured work at the operational level. However, managerial roles with these characteristics do exist and staff do have to be selected to fill the jobs. Before using the variables included in the regression analysis for selecting employees the risks of doing so must be considered:

- First, if the purpose of the job is operational (and therefore employing a matriculant for the role is appropriate) there are no guarantees that the content or role may not change in future. Should new technological developments dictate changes in job content, the organisation might not be able to respond because the type of manager employed is primarily suited to rule-driven, routine work.

- Second, assessment of the performance of graduate managers by non-graduate managers may underestimate their true performance, as the activities performed by graduate managers would not be valued by their (non-graduate) superiors.

Understanding the complexity and level of work (Jaques, 1991, 1994), calculating the value created for the organisation by a specific role, and understanding the different profiles for graduates and non-graduates will result in better selection and promotion decisions. It would appear that the organisation is responding to the change from a stable, predictable environment to a dynamic, changing one. The results from the regression analysis of the male graduate group data reveal that the organisation is actively advancing employees who have the cognitive ability, personality and personal competencies that mirror the generic theoretical "Successful Manager Profile".

The results from the regression analysis of the female matriculant group are paradoxical. On the one hand, the variables included in the regression equation mirror the theoretical "Successful Manager Profile", which may be construed as positive. On the other hand, it is also apparent that different rules apply to men and women in the organisation, and that, in addition to the variables contained in the "Successful Manager Profile", women have to display a further set of characteristics before career success becomes a reality. These characteristics were discussed in the section on the female matriculated group.

2.7.2 Strategic implications for the organisation

In the final sample, only 40 employees had degree level qualifications or higher. Given the different profiles of graduate and matriculated male managers built around the variables predicting job success and the role requirements for managers in a changing environment as

gleaned from the literature review and intra-organisational role analysis, the organisation does not have sufficient talent to staff the organisation optimally for the challenges that lie ahead

It would appear that the organisation needs to review its staffing strategy, particularly selecting and developing talent for promotion into managerial positions. The minimum qualification standard of a matriculation certificate may no longer be sufficient. This may fundamentally alter employees' psychological contract, and may require a significant culture change to accept that past performance may not be an adequate predictor of future job success.

3 Conclusion

The statistical data analysis results provide sufficient support for the proposed model to reject the null hypothesis in favour of the alternative hypothesis. However, the differences between the regression analysis results for the three sub-groups (male matriculant, female matriculant, and male graduate groups) and between the sub-groups and the overall sample, require further discussion.

Two models were proposed in chapter 4. The first was a generic model of variables associated with high performing managers (figure 4.1), and the second was an organisation-specific model of variables associated with high performing managers (figure 4.2) based on the in-depth job analysis. From the regression analysis results it is clear that the results for the overall sample support the generic model and confirm the relevance of the components included in the model. Further, it has emerged that a definite problem arises when an attempt is made to propose one organisation-specific model. In this study, limited to one managerial level (the junior managerial level), a number of sub-groups were identified (based on gender and

educational levels attained), and significant differences were observed in the variables included in the regression lines for each of these groups. I propose, therefore, that in order to minimise any possible adverse impact on any specific sub-group, the “generic model”, as modified below, be used as the core model for predicting future managerial success. This modified core model should then be expanded to include specific variables associated with managerial success for each sub-group. Including sub-group specific variables will make the prediction of future managerial success more accurate: for example, the coefficient of multiple determination for the overall sample is 0,21, which increases to 0,60 for the male graduate sample.

3.1 Generic model of variables associated with high performing, successful managers

The generic model initially proposed was based on the findings of a thorough literature study, and distinguished between innate characteristics and learned behaviours. The innate characteristics component was further separated into two sub-components – cognitive abilities and personality characteristics. The learned behaviour components were further differentiated into three sub-components: problem solving, implementing and interacting competencies.

The results of the multiple regression analysis, for the greater part, support the model and its various sub-components. A summary of the model's sub-components and the specific cognitive abilities, personality characteristics and personal competencies is given in table 7.3.

TABLE 7.3: A summary of the generic model for predicting managerial success and specific variables included in the regression formula

Model's sub-components	Specific Variable	BETA
Cognitive Abilities	Mental Alertness raw score	0,115
Personality Characteristics	Co-ordinator	0,124
	E-I Index Score	0,036
	Plant	-0,097
	Completer-Finisher	-0,102
	J-P Index Score	-0,081
Problem-solving Competencies	Analysis	0,077
	Decisiveness	0,241
Interacting Competencies	Persuasiveness	0,143

The results did not, however, support the inclusion of the "implementing competencies" sub-section in the model. In retrospect, the inclusion of the "implementing competencies" sub-section was not necessary. No employee would be considered for advancement if he or she did not deliver the minimum acceptable level of outputs, for example, putting plans into action, making sure goals are met. Accordingly, I propose modifying the generic model to omit personal competencies related to implementing. The modified model is presented in figure 7.1.

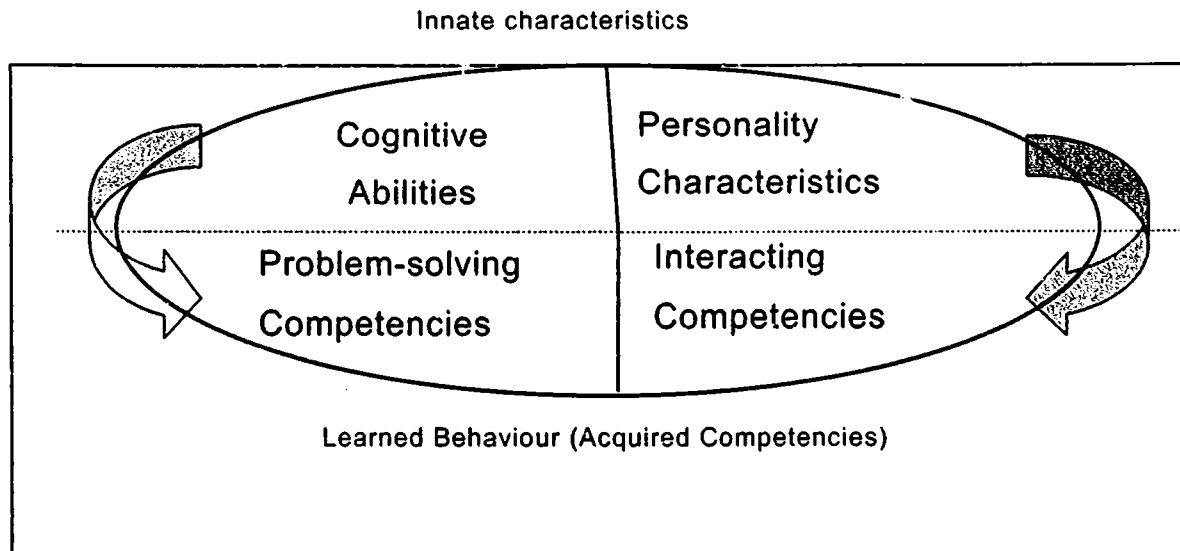


Figure 7.1: Modified generic model of variables associated with managerial success

The modified model presented above proposes that cognitive ability enables the person to acquire and/or develop problem-solving competencies, and the personality characteristics result in the development (or display) of interacting competencies. It is implied that the outcome of the activities performed would meet the business requirements in terms of performance.

3.2 Organisation specific model of variables associated with high performing, successful managers

As discussed previously, the review of the regression analysis results for the gender and qualifications sub-groups revealed that different variables are included in the regression line formulas for each of the sub-groups.

Closer inspection reveals that the regression line formula for the matriculated female sample contains many of the variables included

in the male graduate sample's line formula. Furthermore, the regression lines for these two groups are different from the regression line for matriculated managers. In sections 2.5.1 and 2.6.1 it was proposed that the variables included in the regression line formula for matriculated managers do not fit in with the new role requirements of managers in a dynamic and changing environment. The variables included are, rather, suited to exactly the opposite – a stable and predictable, rule-driven environment.

Further, some of the variables included in the regression line formula for the matriculated female group reflect the organisation's inability to manage diversity effectively. An example is the inclusion of the Shaper team role for the male graduate group, whereas for the female group the same variable was included, but with a negative BETA weight. It is inexplicable why female managers should not, for example, be "highly motivated people with a lot of nervous energy and a great need for achievement ... are aggressive extraverts and possess strong drive... Headstrong and assertive, they tend to show strong emotional response to any form of disappointment or frustration." (Belbin, 1996 p.9).

In view of the arguments presented above, I propose that the organisation-specific model be discarded, and that it be replaced with sub-group specific models. For the sub-groups in this study, I recommend that the regression equations presented in tables 6.13, 6.14, and 6.15 be used. A further investigation is necessary to develop similar regression equations for, in particular, the ABC sub-group in the organisation.

4 Limitations of the study and recommendations for future research

The study has a number of limitations. The major limitation is the fact that it was conducted in only one organisation. Jenks (1991) argues, however, that this should not be seen as a problem as the issue of job success is essentially organisationally bound, and the results of one study would therefore not necessarily be generalisable to other organisations.

A further limitation is the design of the study, which was influenced by organisational constraints. It was not possible to draw a random sample from the population of eligible senior supervisors, and the sample was constructed on the basis of nominations from managers. Second, it was not possible to control for biographical variables, such as language, age, length of service and the duration of supervisory experience.

A third, and major, limitation was the impact and influence subjects' immediate managers may have had on their job success. It was not possible to control for the amount of individual mentoring and coaching a subject may have received, and the impact that this could have had on his or her success over the five-year period.

The choice of Personality Questionnaires (Belbin Team-Role Profile and the MBTI) may evoke criticism. Belbin (1996, p.14) asserts that the Team-Role Profile (INTERPLACE System) is not a psychometric test:

Here it should be pointed out that INTERPLACE is a Human Resource Management System and not a psychometric test. Tests measure specific attributes of personality ... INTERPLACE on the other hand, aggregates miscellaneous information and with its larger than usual database is designed to deal with individual issues arising from individual situations ... Psychometric tests are primarily based on self reporting whereas INTERPLACE combines the assessments of both the self and others...

Further, the culture fairness of tests of general reasoning ability such as the Merital Alertness has also been questioned (Feltham & Smith, 1993; Hesketh & Robertson, 1993; McClelland, 1972).

Notwithstanding the caveats raised, the research reported in this dissertation is of considerable theoretical and heuristic value. It demonstrates clearly that the term "management" is multidimensional in the sense that the job content and context associated with the label are not consistent across levels of seniority. By the same token, the results do, to some extent, support the model I have posited and which guided the investigation. Although the model is unlikely to apply in its entirety to all managerial jobs in all organisations, it nevertheless serves the purpose of providing an integration of present day knowledge and insight, and it remains a suitable framework on which to base similar investigations in other organisations.

A number of different areas present themselves for further research. Each of these is discussed briefly.

4.1 The target population

The study was conducted with a sample of senior supervisors. It would be both interesting and useful to repeat the study at middle and senior managerial levels to determine whether the findings are the same. It interests any organisation to establish what the core set of abilities, personality traits and personal competencies is to make high potential entry-level selections.

4.2 Research in other organisations in the industry

The generalisability of the results is limited because the study was done in one organisation. It is important to establish the extent to which organisational culture may have influenced the results. A further study could compare findings between different organisations in the financial services industry.

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