An Investigation of Transformational, Transactional and *Laissez-faire* Leadership at Different Hierarchical Levels in UK Manufacturing Companies using Multiple Ratings.

Ph.D. Thesis

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This thesis is dedicated to the memory of Christopher Edwards - an inspirational father and friend.

Abstract

This thesis reports an empirical investigation into the use and effectiveness of transformational, transactional and *laissez-faire* leadership across the whole management hierarchy (five levels) and several different time spans. In addition to effectiveness, measures of extra effort and satisfaction were employed. A 360-degree version of the Multifactor Leadership Questionnaire based on Bass and Avolio's 'Full Range Leadership' model was completed by 432 managers, and multiple responses were obtained for 367 managers from 38 organizations in the UK manufacturing sector.

The results of the research suggest a distinct pattern in the use and effectiveness of transformational, transactional and *laissez-faire* leadership at different hierarchical levels and across different time spans. There is evidence to doubt the generalisability of the Full Range Leadership model and for differences in leadership behaviour across hierarchical levels in organizations. The thesis concludes that hierarchical level and the source of rating (self, peer, superior and subordinate) have strong moderating effects and that time span has a small moderating effect on transformational, transactional and *laissez-faire* leadership. Organizational size was found to have no moderating effect.

The findings also suggest a new model of leadership incorporating the elements of the Full Range Leadership model, comprising: active constructive leadership (attributed charisma, idealised influence, inspirational motivation, intellectual stimulation, individualised consideration, and contingent reward), active management-by-exception, and passive-avoidant leadership (passive management-by-exception and *laissez-faire* leadership).

Limitations of the research, such as the focus on only one sector (manufacturing) in one country and apparent self-rating bias, are discussed. Nevertheless, this research is believed to provide a more comprehensive model of leadership than previous research relating to the Full Range model by using five hierarchical levels and data from multiple responses, in most cases 360-degree assessment. The implications for leadership and management theory and for leadership development are discussed, and recommendations for further research are made.

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Key to Acronyms

FRL	Full-Range Leadership
FRLP	Full-Range Leadership Programme
LQ	Leadership Quotient
MLQ	Multifactor Leadership Questionnaire
NHS	National Health Service
OPQ	Occupational Personality Questionnaire
PLS	Partial Least-Squares
SPSS	Statistical Package for the Social Sciences
SST	Stratified Systems Theory
TLQ	Transformational Leadership Questionnaire
TMLQ	Team Multifactor Leadership Questionnaire
UK	United Kingdom
US	United States of America

'Management is not only leadership nor is leadership only management; however, those appointed to a position of responsibility need to appreciate what leadership is expected of them' (Bernard Bass, 1985: xiii).

'If we look back over the last 50 years, we find that in spite of extensive research, we still do not have a really clear and compelling view of what it takes to be an effective leader in an organization' (Malcolm Higgs, 2003).

Chapter 1

The Nature and Importance of this Research

1.1 Outline of the Chapter

This chapter briefly summarises the background of the research and provides a rationale for studying this area from both practitioner and academic perspectives. The chapter also provides a guide to the overall thesis by outlining the structure of subsequent chapters. Academics and practitioners interested in understanding the leadership requirements of managers throughout organizations should find the information in this thesis of value and interest.

1.2 Background to the Research

Organizations will always have hierarchies. For this reason Gill (forthcoming) suggests that organizational level is worthwhile considering in relation to leadership. However, some pundits, such as Tom Peters (1992), dispute the case for hierarchy within modern organizations:

> *'Reduce layers? Flatten the pyramid? No... Rip, shred, tear, mutilate, destroy that hierarchy'* (Peters, 1992: 131).

Elliott Jaques (1990) provides a counter argument:

> *'Hierarchy has not had its day. Hierarchy never did have its day. As an organizational system, managerial hierarchy has never been adequately described and has just as certainly never been adequately used. The problem is not to find an alternative to a system that once worked well but no longer does; the problem is to make it work efficiently for the first time in its 3,000-year history'* (Jaques, 1990).

Indeed, Leavitt (2003) points out that almost every large organization is still hierarchical. Leavitt says that, although networked, federalised and flatter organizations reflect important changes in the way business is done, the basic blueprint remains the same: subordinates continue to report to superiors. Similarly, Hilmer and Donaldson (1996) maintain that new forms of organization do not represent fundamental shifts in organizing but rather are ways in which traditional hierarchies are evolving (Palmer and Hardy, 2000). As Palmer and Hardy (2000) suggest:

> *'Hierarchy...is not something that is being replaced, as some would argue but rather is being modified to incorporate new structures'* (Palmer and Hardy, 2000: 235).

Researching leadership requirements by hierarchical level, therefore, is still relevant to modern management systems and organizations. As Parry (2004) suggests hierarchy and leadership is an important area of research and worthy of investigation. In addition, scholars have repeatedly highlighted the disconnected nature of leadership theory and research (Gill, 2003; McCall and Lombardo, 1978; Quinn, 1984; Whipp and Pettigrew, 1993; Zaccaro and Klimoski, 2001). Of late, it has been pointed out that a major cause of the disconnection is that many studies of leadership are context free: little consideration is given to organizational variables that influence the nature and impact of leadership. For example, studies have tried to develop generic leadership models, but they fail to account for possible differences throughout organizational levels (Zaccaro and Klimoski, 2001). The 'Full Range Leadership' model of transformational, transactional and *laissez-faire* leadership (Avolio and Bass, 1993), one of the best known and most researched current models of leadership, is no exception (Antonakis, 2001; Bryman, 1992).

There is a need to study the nature of contextual influences on the transformational leadership process (Pawar and Eastman, 1997; Antonakis *et al.*, 2003). It has been suggested that the Full Range Leadership model has ignored situational contingencies, as have other similar models under the umbrella of the 'New Leadership': they have returned to the 'one best way of leading' approach (Bryman, 1992; Gill, forthcoming). Attention to transformational leadership at the turn of the millennium, therefore, has been described as being at stage two of the evolution of new theories: evaluation and augmentation (Hunt, 1999). This stage is characterised

by critical review and a focus on identifying moderating and mediating variables (Antonakis *et al.*, 2003). An investigation of the potential moderating effect of hierarchical level on transformational leadership was therefore viewed as timely.

Very little leadership literature focuses on transformational leadership and hierarchical level (Alimo-Metcalfe and Alban-Metcalfe, 2003; Antonakis *et al.*, 2003; Bass, 1998; Bass *et al.*, 1987; Densten, 2003; Lowe *et al.*, 1996; Oshagbemi and Gill, 2004; Stordeur *et al.*, 2000; Yammarino and Bass, 1990; Yokochi, 1989). Moreover, variations in methodology and data analysis techniques across these studies, however, have led to difficulties in comparing findings. Furthermore, one piece of research (Densten, 2003) investigates 'time span of discretion' (discussed in detail in chapter 3) as a factor possibly linked with hierarchical level.

Furthermore, despite the foregoing concerns about moderating and mediating variables, especially hierarchical level and time span, in respect of transformational leadership, the 'Full Range Leadership' model (Avolio and Bass, 1993) has been hailed by Bass and Avolio as the leadership development solution for all managers, regardless of organizational and national boundaries (Avolio, 1999; Bass, 1997a). The research for this thesis, therefore, investigated the moderating effect of hierarchical level and time span on transformational, transactional and *laissez-faire* leadership - the dimensions associated with the 'Full Range Leadership' model.

1.3 The Importance of Understanding Leadership Behaviour throughout an Organization

Leadership has been identified in the literature as an extremely important factor for group effectiveness (Mott, 1972) and organizational success and effectiveness (Bennis and Nanus, 1985; Smith, 1997; Yukl, 1998). Furthermore, it has been suggested that leadership capabilities and the development of these capabilities is needed at all levels within organizations (Bolt, 1999; Charan *et al.*, 2001; Conger and Benjamin, 1999; Khaleelee and Woolf, 1996; Nicholls, 1994; Raelin, 2004; Tichy, 1997). A long-held assumption, however, is that hierarchical level moderates the effectiveness of leadership behaviour (Stogdill, 1974). Little has been found so far from research into specific leadership requirements by organizational level

(Conger and Toegel, 2002). All aspects of leadership, therefore, need to be studied across different levels (Locke, 1998).

Indeed, hierarchical-level research may provide outcomes of practical benefit. For example, Kraut *et al.* (1989) suggest that such outcomes may enable organizations to:

- Co-ordinate work more effectively
- Communicate performance expectations and provide feedback to managers more accurately and clearly
- Prepare managers for transition to higher organizational levels
- Forecast how different managers would perform if promoted
- Ensure that management and leadership development programmes are targeted to meet the needs of managers as they change position
- Diagnose and resolve confusion regarding managerial roles, responsibilities and practices

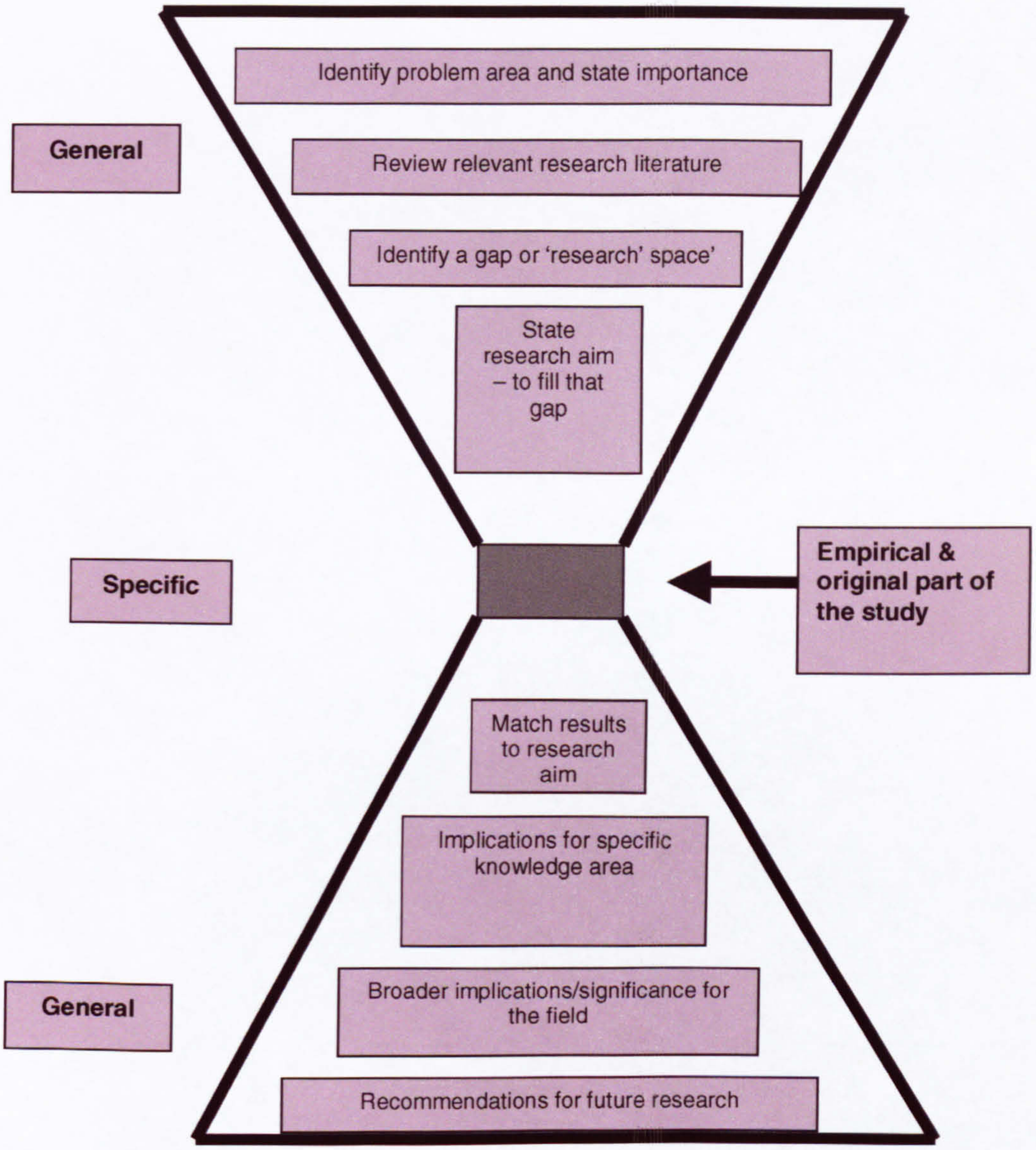
This thesis aims to contribute to achieving such benefits from the perspective of transformational, transactional and *laissez-faire* leadership.

1.4 Structure of the Thesis

The well-known 'hourglass model' of structuring academic research reports was used as a framework for the thesis (see Figure 1.1).

Chapter two gives an overview of leadership theory. Chapter three reviews the literature concerning management, leadership and hierarchical level, and chapter four reviews the literature and research concerning the 'Full Range Leadership' model and hierarchical level. Research aims and objectives and a methodological discussion are found in chapters five and six respectively. Chapter seven describes the pilot study that was conducted to evaluate the chosen methodology and clarify data collection methods. The data collection methods are described in chapter eight, with the data analysis and results reported in chapter nine. Chapter ten is the

Figure 1.1: The 'Hourglass' Model of Empirical Research



Source: http://ecdev.hku.hk/acadgrammar/general/organize/hourglass.htm

discussion chapter, which reflects the lower half of the 'hourglass'; that is, it discusses specific implications of the research and then broadens out to more general implications. Finally, conclusions, limitations of the research and implications for further research are discussed in chapter eleven.

The next chapter maps leadership theory and highlights how this thesis fits.

Chapter 2

Leadership Theory: Background to the Research

2.1 Outline of the Chapter

This chapter places the thesis in the context of current issues relating to leadership theory and research and in doing so gives an overview of leadership theory relevant to this research. Firstly, a review of leadership theory and research is provided. Secondly, an emerging approach to leadership, that of distributed or dispersed leadership, is discussed in relation to the thesis. Thirdly, problems of defining leadership are highlighted. Lastly, the chapter highlights the confusion concerning the concepts of leadership and management. This is a particularly important consideration given the aims and objectives of the thesis (discussed in chapter five).

2.2 The Development of Leadership Theory

During the twentieth century, five chief groups of theories of leadership have developed. These are trait theory, style theory, contingency theory, charisma theory, and the new leadership/neo-charismatic theory (including the 'Full Range Leadership' model) (Bryman, 1992, 1996; Dulewicz and Higgs, 2002; Higgs and Rowland, 2001; Palmer and Hardy, 2000) (see Table 2.1). In addition to these well-established approaches there are three emerging theories: dispersed leadership, strategic leadership, and change leadership. Other theories have also been put forward, such as emergent leadership, group dynamics theories (Gill, 2003), and the constitutive approach (Grint, 1997a, 2000). Although table 2.1 suggests a linear progression from one group of theories to another, this is not actually the case. For example, traits of leadership are still investigated in contemporary research (e.g. Goffee and Jones, 2000), albeit in an increasingly refined manner (Higgs and Rowland, 2001).

Table 2.1: Trends in Leadership Theory and Research

Period	Approach	Core theme
Up to late 1940s	Trait Approach	Leadership ability is innate
Late 1940s to late 1960s	Style Approach	Leadership effectiveness is to do with how the leader behaves
Late 1960s to early 1980s	Contingency Approach	Effective leadership is determined by the situation
Mid 1970s	Charismatic Approach	Leadership is concerned with the charismatic behaviours of leaders and their ability to transform organizations
Since early 1980s	New Leadership/Neo Charismatic Approach	Leaders require a transformational focus which encompasses a range of characteristics and behaviours (e.g. visionary, inspirational etc.) in addition to charisma
Since early 1990s	Emerging Approaches a) Dispersed Leadership b) Strategic Leadership c) Change Leadership	 a) Leadership is a widely dispersed activity throughout teams and organizations b) Leadership may be understood by examination of strategic decision-making by executives c) Leadership is inexorably linked to the management of change. Leaders behaviours may be understood in the context of the work of delivering change

Sources: Bryman (1992); Bryman (1996); Palmer and Hardy (2000); Higgs and Rowland (2001) and Dulewicz and Higgs (2002).

The theories alluded to above, however, have tended to provide a confusing picture of leadership. In agreement with this view, Whipp and Pettigrew (1993) describe leadership as one of the most appealing and yet intractable subjects within management. Furthermore, leadership theory has been described as fragmented, internally inconsistent, confusing (Gill, 2003) and disconnected and directionless (Zaccaro and Klimoski, 2001). It is suggested that a complete and coherent picture of leadership is missing and is needed (Gill, 2003). The problem has been evident for over twenty-five years since it was suggested that students and scholars, and perhaps leaders themselves, would have discovered three things in their studies of leadership (McCall and Lombardo, 1978):

- The number of different models, theories, prescriptions and conceptual schemes of leadership is mind-boggling
- Much of the leadership literature is fragmentary, trivial, unrealistic or dull
- Research results are often characterised by contradictions and by type III error – solving the wrong problems precisely

Gill (2003) has suggested that nothing had changed much since the early-1980s:

> *'Despite the immense investment in the enterprise (of leadership research), researchers have become increasingly disenchanted with the field. The seemingly endless display of unconnected empirical investigations is bewildering as well as frustrating'* (Quinn, 1984).

It has been suggested that a major cause of the disconnected nature of the leadership literature is that many studies are context-free: little consideration is given to organizational variables that influence the nature and impact of leadership. The limitation of generic leadership models is that they fail to account for differences throughout organizational levels (Zaccaro and Klimoski, 2001). The context in which leadership is observed constrains the types of behaviours that are effective (Lord *et al.*, 2001). Situations that are not similar require different leader behaviours to match the expectations of followers across a diverse set of contexts (Lord *et al.*, 1984). Examples of contexts that could alter expectations of leadership include national culture (Brodbeck *et al.*, 2000; Koopman *et al.*, 1999) and environmental characteristics such as whether the environment is dynamic or stable (Brown and

Lord, 2001; Keller, 1999; Lord *et al.*, 2001; Lowe *et al.*, 1996) as well as hierarchical level.

Investigating leadership across hierarchical levels is important with respect to providing a cohesive and coherent picture of leadership. There are, however, other factors accounting for the fragmented nature of leadership theories: firstly, the differing criteria and contexts for judging leadership effectiveness (discussed briefly in the next section), and secondly the differing approaches to the study of leadership (Gill, 2003).

Indeed, a widespread agreement among leadership scholars is that the future of leadership theory and research depends upon an integrative or general theory that draws on different disciplines (Burns, 2001). Current theories to date have failed to provide this integrative or general view (Gill, 2003). It has also been suggested, on the other hand, that no single theory should be expected to include all aspects of leadership behaviour (Yukl, 1999). Furthermore, there are other emerging approaches to studying and understanding leadership, such as 'dispersed leadership', 'strategic leadership' and 'change leadership' (highlighted in table 2.1). This thesis is located around the increasing level of discussion surrounding one of these approaches; dispersed or distributed leadership.

2.3 Dispersed and Distributed Leadership

> *"The argument that we are witnessing a shift from old to new forms of organizing parallels a similar shift in the leadership literature regarding the need to move away from authoritarian to 'dispersed' modes of leadership."* (Palmer and Hardy, 2000: 233)

It has been suggested that 'dispersed' or 'distributed' leadership is not new (Edwards *et al.*, 2004): notions around emergent leadership have been around for many decades (e.g. Whyte, 1943). Despite this suggestion, claims that leadership capabilities and the development of these capabilities are needed at all levels within organizations (Bolt, 1999; Charan *et al.*, 2001; Conger and Benjamin, 1999; Khaleelee and Woolf, 1996; Nicholls, 1994; Raelin, 2004; Tichy, 1997) epitomize the

now popular idea (Ray *et al.*, 2004) of dispersed or distributed leadership (Gronn, 2002).

The literature concerning this concept, however, remains vague: all that is suggested is that leadership should be displayed in all parts of an organization. Little is known about specific leadership requirements by organizational level (Conger and Toegel, 2002) and potentially other contextual and situational influences, such as expectations of followers (Lord *et al.*, 1984), national culture (Brodbeck *et al.*, 2000; Koopman *et al.*, 1999) and environmental characteristics (for example, whether the environment is dynamic or stable) (Brown and Lord, 2001; Keller, 1999; Lord *et al.*, 2001; Lowe *et al.*, 1996).

This thesis, therefore, aims to create an understanding of leadership *across* the organization, providing a detailed picture of dispersed or distributed leadership within organizations. A parallel discussion concerns the need to critically review transformational leadership theory with a particular focus on identifying moderating and mediating variables (Antonakis *et al.*, 2003). The thesis addresses both these areas by investigating transformational, transactional and *laissez-faire* leadership across hierarchical levels and time spans in an organization.

Hierarchical level and time span were identified as variables to investigate owing to the limited research conducted in these areas. Only nine research studies are known to have been published on transformational, transactional and *laissez-faire* leadership across hierarchical levels in organizations (Alimo-Metcalfe and Alban-Metcalfe, 2003; Antonakis *et al.*, 2003; Bass, 1998; Bass *et al.*, 1987; Lowe *et al.*, 1996; Oshagbemi and Gill, 2004; Stordeur *et al.*, 2000; Yammarino and Bass, 1990; Yokochi, 1989) and just one is known to have been published on transformational, transactional and *laissez-faire* leadership across time spans (Densten, 2003).

2.4 Defining Leadership

The subject of leadership has for many years excited interest (Higgs, 2002; Yukl, 2002), and the importance of leadership has long been recognised (Gill, 2002). Barker (1997), however, suggests that not providing a definition seems to be an

accepted practice among scholars who discuss leadership. He cites one investigation (Rost, 1991) that analysed 587 works that referred to leadership in their titles and found that 366 (62%) of them did not provide any definition of leadership.

Those researchers who have defined leadership usually do so according to their individual perspectives and the aspects of the phenomenon that most interest them (see Yukl, 2002, for a review). For example, Bass (1990) proposes that the search for one true definition of leadership is fruitless and that an appropriate choice of definition should depend on the methodological and substantive aspects of leadership in which a study is interested. This attitude, however, may exalt the popular notion that there are almost as many different definitions of leadership as there are persons who have attempted to define the concept (an analogy coined by Ralph Stogdill in 1974 but still reiterated in contemporary texts, e.g. Yukl, 2002).

Yukl (2002) indicates some commonality in definitions of leadership. Most definitions, he points out, make the assumption that leadership involves a process of influence by one person over other people. There is, however, still disagreement, for example on how influence is exerted and who exerts influence (Yukl, 2002). As this thesis is concerned with transformational, transactional and *laissez-faire* leadership, it uses the definitions of these concepts advocated by Bass (1990) (see chapter four). While the one 'true' definition of leadership is still elusive, not providing a definition is unacceptable in academic research.

2.5 Leadership and Management

A distinction has been made in the literature between management and leadership that relates to the 'Full Range Leadership' model. The transactional/transformational model of leadership has been criticised in light of the seemingly closer relationship that transactional leadership has with 'management' than with 'leadership' (Alimo-Metcalfe, 1998; Bryman, 1992; Gill, forthcoming; Sadler, 1997). A discussion concerning the conceptualisation of both 'management' and 'leadership' is therefore relevant to the thesis.

Confusing 'leadership' and 'management' and treating the terms as if they are synonymous has a long history in leadership research (Rost, 1991). Many scholars have serious conceptual problems with using 'leadership' and 'management' as synonymous terms. They have worked toward differentiating the two concepts (e.g. Bennis, 1989; Bennis & Nanus, 1985; Hickman, 1990; Kotter, 1988, 1990; Rost, 1991; Zaleznik, 1977), in some cases conceptualising them as mutually exclusive (Bennis & Nanus, 1985; Zaleznik, 1977). In other words, some people are viewed as managers and others are viewed as leaders (Yukl, 2002). Considering the two concepts as mutually exclusive, however, does little to advance the understanding of leadership (Rost, 1991; Yukl, 1994). As Yukl (1994) suggests:

> *'Whether leading and managing are overlapping processes and whether they can be performed better by different types of people are questions that should be determined by empirical research, not by arbitrary definition'* (Yukl, 1994: 4).

Furthermore, the view that leadership and management are mutually exclusive has not been supported by empirical research (see Yukl, 2002, for a review). People do not sort neatly into these two stereotypes that imply that managers are always less important and that denigrate them at the expense of the more fashionable 'leaders' (Hickman, 1990; Rost, 1991; Yukl, 2002).

A more balanced view is proposed by scholars such as Bass (1990), Hickman (1990), Kotter (1988), Mintzberg (1973, 1980) and Rost (1991), who conceive leading and managing as distinct processes, but do not assume that leaders and managers are different types of people. Yukl (2002) criticises this view because, he says, it can obscure more than it reveals, especially if it encourages simplistic theories of effective leadership. However, most scholars agree that success as a manager involves leading (Yukl, 2002). So a sensible suggestion is:

> *'Management is not only leadership nor is leadership only management; however, those appointed to a position of responsibility need to appreciate what leadership is expected of them'* (Bass, 1985: xiii).

If transactional leadership is closely related to 'management' and Bass's (1985) suggestion is indeed sensible, this would advocate managers throughout organizations being well versed in transactional leadership behaviours. The issue is their transformational leadership behaviours. This is exactly the concern of this thesis, which will provide data that will either support or challenge Bass's (1985) view. The thesis will also respond to Yukl's (1994) plea for distinctions of 'management' and 'leadership' based on empirical research.

This chapter has set the thesis in the context of current leadership theory. In summary, this chapter has located the view that this thesis adopts; distributed or dispersed leadership and understanding the contextual influences on the use and effectiveness of transformational leadership. The thesis holds that hierarchical level is an important contextual variable in relation to leadership behaviour and effectiveness, and the next chapter delves deeper by reviewing the literature relevant to the thesis: management, leadership and hierarchical level.

Chapter 3

Management, Leadership and Hierarchical Level

3.1 Outline of the Chapter

This chapter begins by reviewing a number of theoretical models and frameworks that focus on management and leadership processes across hierarchical levels in organizations. Chapter three also aims to provide an understanding of the differences in the use and effectiveness of leadership across hierarchical levels in organizations.

3.2 Management Theory and Hierarchical Level

Early management theory did not explicitly mention leadership as a necessary skill; nor did it provide an understanding of hierarchical differences (Fayol, 1916; Gulick and Urwick, 1937; Taylor, 1947). Models of management developed in the second half of the twentieth century, however, did explicitly relate leadership and hierarchy. Two relevant models are described below.

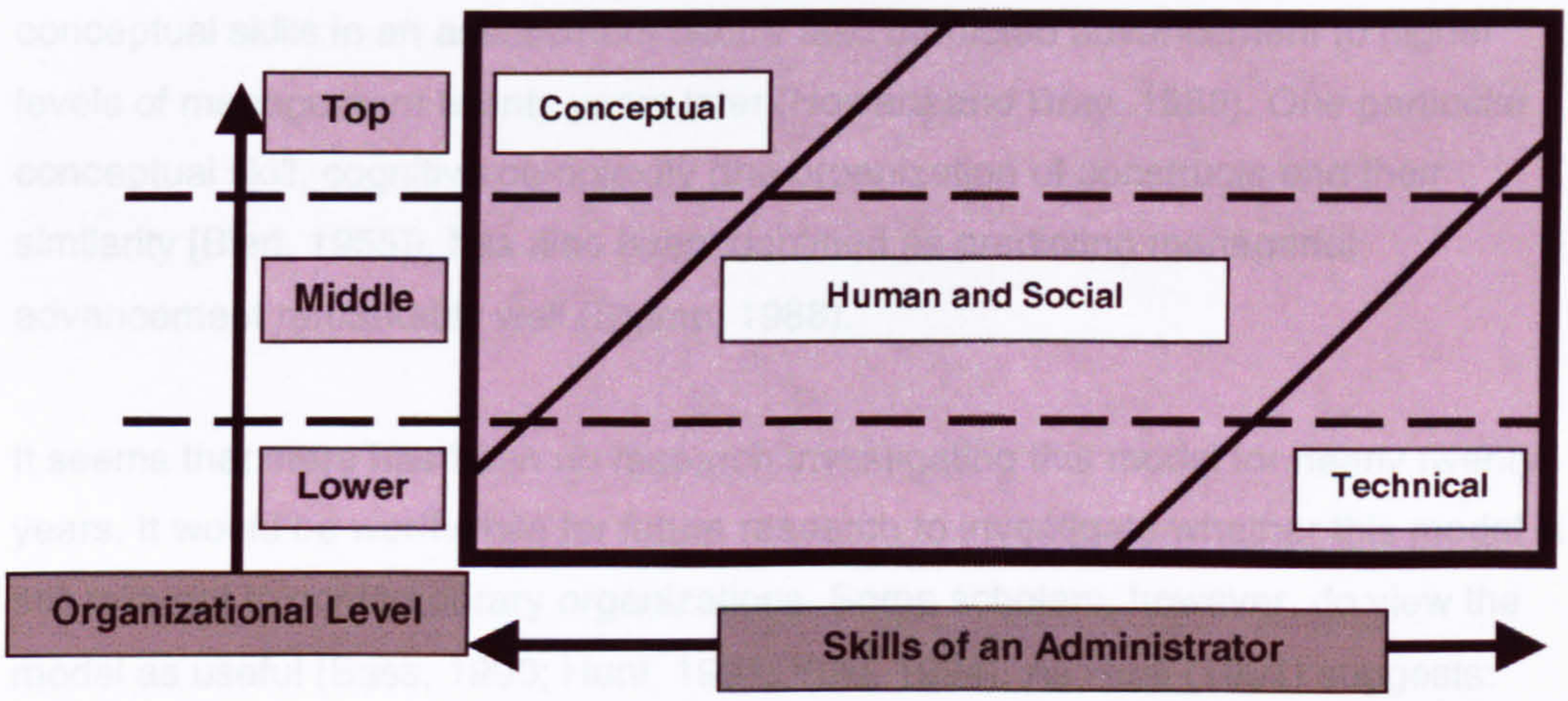
3.2.1 Katz's Model of Hierarchical Differences in Skills in Organizations

A popular model of hierarchical differences in organizations suggests three distinct skill sets: conceptual, human and technical (Argyris, 1964; Burns, 1957; Katz, 1955, 1974; Mackenzie, 1969, Mann, 1965; Shiba, 1998). Technical skill is described as an understanding of, and proficiency in, a specific kind of activity, particularly one involving methods, processes, procedures, or techniques (Katz, 1974). A later development of this model added that technical skill can be dichotomised into functional and problem-solving skills (Shiba, 1998). Human skill is portrayed as the ability to work effectively as a group member and to build co-operative effort within a team. Furthermore, the skill has been subdivided into (a) leadership ability within a manager's own unit and (b) skill in inter-group relationships (Katz, 1974). Finally,

conceptual skill involves the ability to see the enterprise as a whole. It includes recognising how the various functions of the organization depend on one another, and how changes in any one part affect all others. It also extends to visualising the relationship of the individual business with the industrial sector, the community, and the political, social and economic forces of the nation as a whole (Katz, 1974).

The value of this model is that it demonstrates a shift in the relevant importance of technical, human and conceptual skills throughout organizational levels. Human and social skills remain consistently important throughout all organizational levels, while conceptual skills increase in importance and technical skills decrease in importance as one ascends organizational levels (see Figure 3.1). (The word 'administrator' is equivalent here to the word 'manager' or 'leader'.)

Figure 3.1: The Skills of an Effective Administrator



Source: Katz, R.L. 1974. Skills of an effective administrator. ***Harvard Business Review***, 52(5): 90-102.

The results of research also provide some empirical support for this model (Guest 1955; Howard and Bray, 1988; Mahoney, 1961; Mahoney *et al.*, 1965; Pavett and Lau, 1983; Stamp, 1988; Thomason, 1966, 1967). For example, Guest (1955) conducted some 500 interviews with foremen from automobile industry plant. Each task highlighted in this study can be attributed to one of Katz's skill sets. Furthermore, Mahoney (1961) concluded from a review of several studies that the

higher the level of a manager the more time they spent on planning and organizing rather than the technical work of the organization. This was confirmed by Mahoney *et al.* (1965), who found that, while supervising was the main activity of 51% of lower-level managers, it was the main activity of only 36% of middle-level managers and 22% of top-level managers. Top-level managers, they suggested, were more likely to be generalists and planners than were lower-level managers. Around the same time, Thomason (1966, 1967) concluded:

> *'Relative time spent on activities relating to current production problems decreases as one moves up the hierarchy; that spent on general management policy increases as one moves upwards."*
> (Thomason, 1967: 28)

More recent research has also produced support for the importance of the need for increasing conceptual skills higher up an organizational hierarchy and the need for human and social skills to remain constant (Pavett and Lau, 1983). A study of conceptual skills in an assessment centre also predicted advancement to higher levels of management twenty years later (Howard and Bray, 1988). One particular conceptual skill, cognitive complexity (the organization of constructs and their similarity [Bieri, 1955]), has also been identified as predicting managerial advancement remarkably well (Stamp, 1988).

It seems that there has been no research investigating this model for nearly twenty years. It would be worthwhile for future research to investigate whether this model is still relevant to contemporary organizations. Some scholars, however, do view the model as useful (Bass, 1990; Hunt, 1991; Yukl, 1994). As Hunt (1991) suggests:

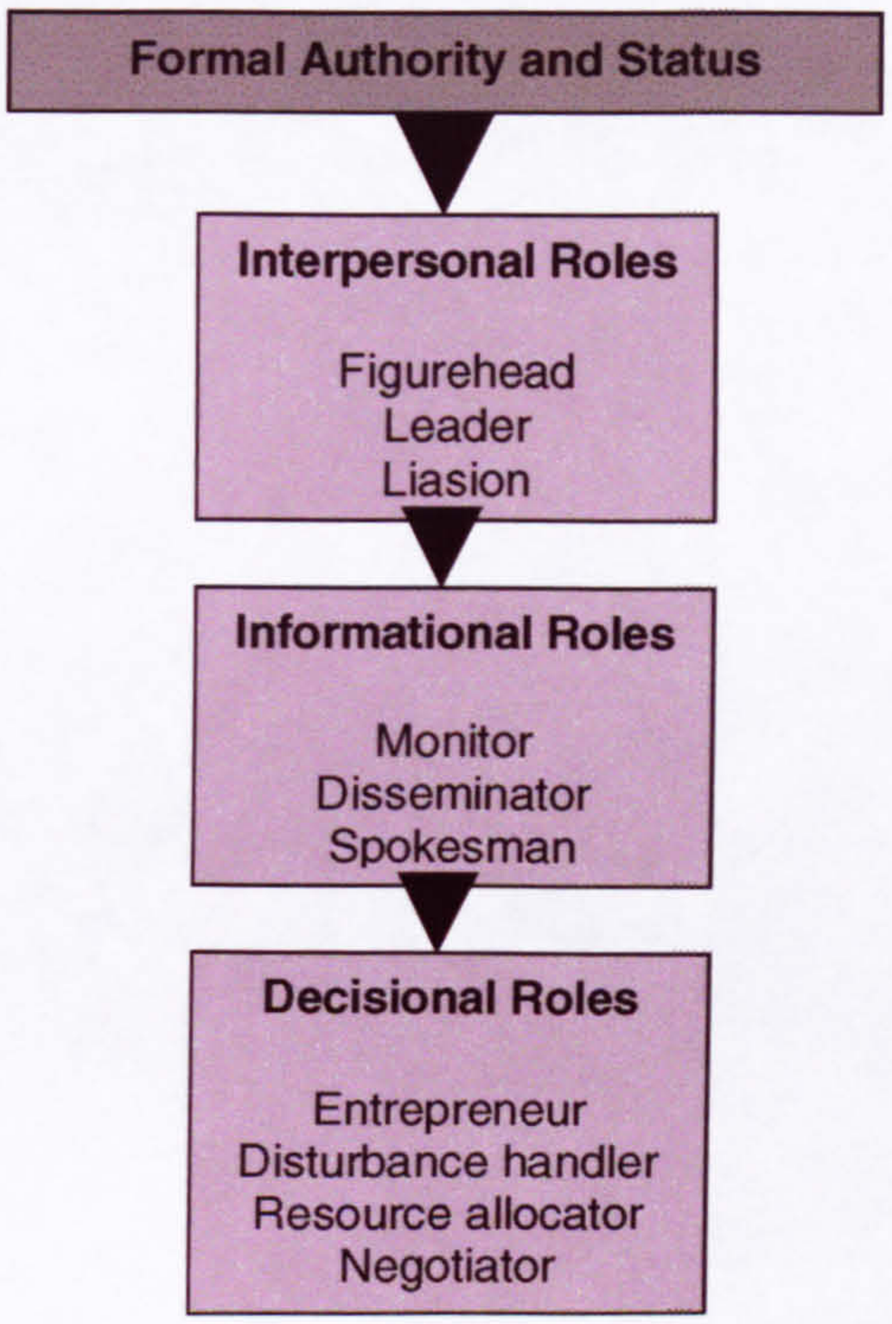
> *'Its [Katz's model's] wide usage and underlying face validity makes it a useful conceptual anchor point to discussing different leader skill mixes.'* (Hunt, 1991: 159)

3.2.2 Mintzberg's Model of the Nature of Managerial Work

A similar model to the one above was developed directly from observing five chief executive officers at work (Mintzberg, 1973, 1980). The model describes 10 roles

that managers carry out. The roles are categorised by Mintzberg as interpersonal, informational and decisional. The model also uses a three-category approach to understanding management but, differing from Katz's model (described above), it incorporates the roles for each category (see Figure 3.2).

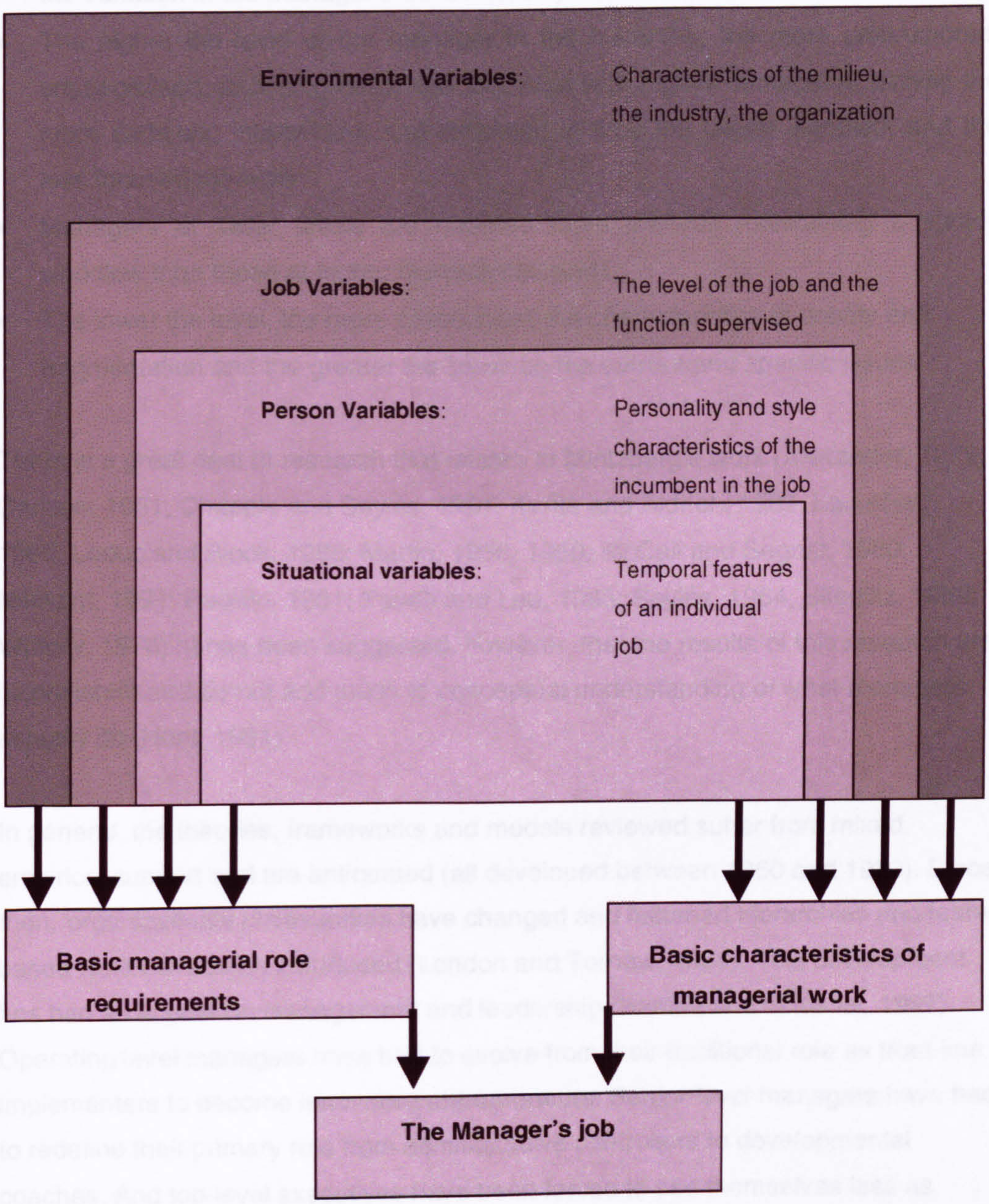
Figure 3.2: Mintzberg's Categories and Roles of a Manager



Source: Mintzberg, H. 1980. ***The nature of managerial work.*** Englewood Cliffs, NJ: Prentice – Hall. P59

A criticism of Mintzberg's model is that it has been generalised from interviews with five Chief Executive Officers. It is for this reason that this thesis is more directly concerned with Mintzberg's later developments of this work (see Figure 3.3, overleaf). This more theoretical model offers four propositions concerning managerial activity that relate directly to hierarchical level (alongside other variables) (Mintzberg, 1973). They are:

Figure 3.3: A Contingency View of Managerial Work



Source: Mintzberg, H. 1980. ***The Nature of Managerial Work.*** Englewood Cliffs, NJ: Prentice – Hall. p.103

- The level of the job and the function supervised appear to account for more of the variation in the manager's work than any other variable
- The higher the level of the manager in the hierarchy, the more unstructured, unspecialised, and long-range the job. Also with higher managerial activity the more complex, intertwined, and extended in time the issues handled, and the less focused the work
- Managers at lower levels are oriented more towards maintaining a steady workflow than those at higher hierarchical levels
- The lower the level, the more pronounced the characteristics of brevity and fragmentation and the greater the focus on the current and specific issues

There is a great deal of research that relates to Mintzberg's work (Alexander, 1979; Carlson, 1951; Chapple and Sayles, 1961; Kurke and Aldrich, 1983; Lau *et al.*, 1980; Leduc and Block, 1985; Martin, 1956, 1959; McCall and Segrist, 1980; Nilakant, 1991; Paolillo, 1981; Pavett and Lau, 1983; Sayles, 1964; Stieglitz, 1969; Whitely, 1978). It has been suggested, however, that the results of this research are inconsistent and do not add much to conceptual understanding of what managers actually do (Hunt, 1991).

In general, the theories, frameworks and models reviewed suffer from mixed empirical support and are antiquated (all developed between 1950 and 1980). Since then, organizational philosophies have changed and flattened hierarchies and team-based work have been introduced (London and Tornow, 1998). This development has had an impact on management and leadership (Bartlett and Ghoshal, 1997). Operating level managers have had to evolve from their traditional role as front-line implementers to become innovative entrepreneurs. Senior-level managers have had to redefine their primary role from administrative controllers to developmental coaches. And top-level executives have been forced to see themselves less as strategic architects and more as organizational leaders (Bartlett and Ghoshal, 1997). The research reported in this thesis provides the opportunity to reassess the relevance of these antiquated models by comparing them with modern systems of management and leadership.

3.3 General Leadership Theory and Hierarchical Level

A long-held theoretical assumption has been that the effectiveness of a leader varies with respect to (a) type of position, (b) level of position within an organization, and (c) type of organization (Stogdill, 1974). Indeed, a number of leadership scholars have hypothesised differences in leadership style, behaviour and processes across the levels of an organization's hierarchy (Antonakis, *et al.*, 2003; Den Hartog, *et al.*, 1999; Grint, 1997b; Hunt, 1991; Saskin, 1988; Waldman and Yammarino, 1999; Zaccaro, 2001). Little, however, has been found so far from research into specific leadership requirements at different organizational levels (Conger and Toegel, 2002). This views supports Zaccaro and Klimoski's (2001) suggestion that leadership studies have tried to develop generic leadership models, but they fail to account for differences throughout organizational levels. This thesis disagrees – there are models that have addressed differences in leadership at different hierarchical levels, and these are cited in the literature reviewed below.

*3.3.1 'Leadership **of** Organizations' versus 'Leadership **in** Organizations'*

A distinction has been drawn in the literature between 'leadership *of* organizations' and 'leadership *in* organizations' (Dubin, 1979; Storey, 2005). Leadership *of* organizations essentially focuses on leadership of the organization overall. It involves human actors in interaction with the organization in its entirety. This is similar to Katz's (1974) description of 'conceptual skills' considered earlier in the chapter. Leadership *in* organizations, on the other hand, involves team leadership and face-to-face interaction at various levels. An estimated 90% of current leadership literature focuses on the latter kind of leadership (Hunt, 1991; Hunt and Ropo, 1998; Phillips and Hunt, 1992). A similar estimation (Zaccaro and Horn, 2003) suggests only 5% of the leadership literature has focused on executive leadership or 'leadership *of* organizations' (Storey, 2005). This has led to a recent call by Storey (2005) for more research into organizational leadership. This thesis, by investigating leadership throughout an organization, provides data concerning both forms of leadership.

The dichotomy provided by Dubin (1979) and reiterated later by Storey (2005) has been criticised, however, for being too simplistic. Leadership at the top-level of an organization also involves face-to-face interaction, and leadership at lower levels of the organization sometimes involves strategic business units, which may operate as complex semi-autonomous 'mini-organizations'. Despite this fuzziness, the classification has been described as useful enabling a differentiation between types of leadership research (Hunt and Ropo, 1998). Hunt and Ropo (1998) also suggest that 'leadership of organizations' include a more comprehensive set of activities than does 'leadership in organizations'. Furthermore, there has been recent empirical evidence that suggest a differentiation in organization identity based on hierarchical level (Corley, 2004). Corley suggests that at the top-level of an organization identity is seen in light of the organization's strategy based around it's purpose and mission. On the other hand, at the bottom of the organization's hierarchy identity is seen in relation to culture based around shared values and beliefs. There are other models that can aid a more detailed understanding of hierarchical differences in leadership.

3.3.2 A Systems Model of Leadership across Organizations

Likely differences in leadership behaviour across hierarchical level were pointed out long ago (Selznick, 1957). In accordance with Selznick's work, Gill (forthcoming) proposes that top-level leaders are responsible for the vision and mission of the organization, the development of appropriate strategies, and the identification and promotion of supportive shared values throughout the organization. Lower-level leaders, on the other hand, Gill says, are responsible for implementing strategies, performing routine tasks, and encouraging individual involvement and team working. The systems model of leadership is helpful to elaborate this theory.

The so-called, systems model of leadership (Katz and Kahn, 1966, 1978) has been widely regarded as a conceptually elegant framework (Hunt, 1991). Katz and Kahn's model suggests that at lower levels little 'leadership' is required. This is because the focus is on the administration of effective operations. At middle levels administrative procedures are developed and implemented, and human relations skills are important. At the top levels of an organization, administrative procedures are initiated to reflect new policy (see Table 3.1).

Table 3.1: The Systems Model of Leadership

Level	Leadership Function	Cognitive Skills	Affective Skills
Top	Change, creation and elimination of organizational structure	System perspective	To create charisma
Middle	Supplementing, piecing and improvising for the structural inadequacies	Subsystem perspective	Human relations skills
Lower	Utilisation of existing structure	Technical knowledge	Concern for equity in the use of rewards and sanctions (i.e. being fair)

Adapted from: Sinha, J.B.P. 1995. ***The Cultural Context of Leadership and Power.*** New Delhi: Sage, pp39-40 (Originally published in Katz, D., & Kahn, R.L. 1966. ***The Social Psychology of Organizations.*** New York: John Wiley).

The model also suggests that the skills appropriate at one level of the organization are inappropriate or even dysfunctional at another (Katz and Kahn, 1966, 1978). However, Sinha (1995) argues that the leadership functions and skills proposed in Katz and Kahn's model are relevant to an extent at all levels. Gill (forthcoming) adds that the suggestion of there being little leadership at the lower-levels of an organization is contentious. For example, he suggests that leadership is needed wherever there are subordinates or followers. Furthermore, research has found charismatic leadership at all levels in organizations, though most frequently at the top level of the hierarchy (Bass, 1992). This has provided some, if equivocal, support for systems theory (Katz and Kahn, 1966, 1978).

3.3.3 Stratified Systems Theory and Time Span of Discretion

Stratified-systems theory (SST) (Brown and Jaques, 1965; Jacobs and Jaques, 1987; Jaques, 1976, 1989, 1990; Jaques and Clement, 1991) is a prescriptive model of organizational structure based on defining hierarchical level according to the task complexity involved at each level. SST suggests a general model of

organizational functioning such that tasks or requirements increase in complexity with ascending organizational levels. Increasing task complexity is a function of the uncertainties created by the necessity to deal with a more encompassing and a more turbulent environment as a manager moves up the organizational hierarchy (Hunt, 1991).

'Time span of discretion' is defined as the maximum time for completing critical tasks within organizations (Brown and Jaques, 1965; Jacobs and Jaques, 1987; Jaques, 1976, 1989, 1990; Jaques and Clement, 1991). The model shows seven levels of time span grouped into three domains. These domains are systems, organizational, and direct leadership. Time span is defined as the longest target completion time for critical tasks of the leader at each hierarchical level (Hunt, 1991; Jaques and Clement, 1991) (see Table 3.2).

Table 3.2: Domains and Levels in Stratified-Systems Theory

Time span	**Level**	**Domain**
20 years and over	VII - Corporation	Systems
10-20 years	VI - Group	Systems
5-10 years	V - Company	Organizational
2-5 years	IV - Division (General Management)	Organizational
1-2 years	III - Department	Direct
Over 3 months and under a year	II - Section	Direct
Up to 3 months	I – Shop Floor (Direct Employee)	Direct

Source: Hunt, J.G. 1991. ***Leadership: A New Synthesis.*** Newbury Park: Sage. P. 17.

As Waldman *et al.* (2004) stress, SST focuses on the cognitive aspects of leadership where effective and ineffective leaders can be distinguished in terms of their level of conceptual capacity (Jaques and Clement, 1991; Lewis and Jacobs, 1992). Conceptual capacity is defined as the ability to think abstractly and integrate complex information, providing an antecedent to leadership action (Waldman *et al.*, 2004). SST, however, has been criticised for being too rigid and mechanistic (Kleiner, 2001) and therefore it may not be attuned to contemporary organizations.

SST relates to previous leadership models reviewed. There appears to be a relationship between 'organizational leadership' and 'leadership *of* organizations'. Similarly there appears to be a relationship between 'direct leadership' and 'leadership *in* organizations'. SST goes further, conceptually, by suggesting 'systems leadership'. When compared to the systems model of leadership (Katz and Kahn, 1966, 1978) one might expect a difference between top-level leadership, which represents 'organizational leadership', and middle-level and lower-level leadership, which represents 'direct leadership'.

Similar distinctions have been suggested in the past (Barnard, 1950; Etzioni, 1961; Katz and Kahn, 1966, 1978; Niles, 1949, 1958; Pfiffner and Sherwood, 1960). Indeed, the relationship that SST has with systems theory (Katz and Kahn, 1966, 1978) has been highlighted by Hunt (1991). Both theories, he asserts, conceptualise different and increasingly complex leadership requirements as one moves higher in the organization and that both theories have break points where the requirements become qualitatively different. However, empirical support for SST is mixed. Some studies provide support for the theory (Derossi, 1974, 1978; Martin, 1956, 1959), while others have found little support (Goodman, 1967; Nilakant, 1991).

3.3.4 Leadership Styles Across Hierarchical Levels

There is mounting empirical evidence for differences in leadership styles across hierarchical levels. One study (Kabacoff, 1999), for example, found differences in the leadership styles and practices of individuals representing seven management levels and nine job functions within North American organizations (cited by Oshagbemi and Gill, 2004)

A recent study provides further evidence that the use of leadership styles (directive, consultative, participative and delegative) varies across hierarchical levels in organizations (Oshagbemi and Gill, 2004) (see Table 3.3 for definitions of these styles). The study found that leadership style appears to vary across three levels in organizations: senior-level, middle-level and lower-level management. Senior-level managers appear to use more delegative and participative styles and less directive

Table 3.3: Operational Definitions of Leadership Styles

Leadership Style	Definition
Directive	The leader tells followers what to do and how to do it, what is expected of them, specifying standards of performance and setting deadlines for completion of work, initiates action, and exercises firm rule to ensure followers follow prescribed ways of doing things. The leader also ensures followers are working to capacity, reassigning tasks to balance the workload
Consultative	The leader tells followers what to do, but only after discussing matters with them first and hearing their opinions, feelings, ideas and suggestions.
Participative	The leader discusses and analyses problems with followers to reach consensus on what to do and how to do it. The group makes decisions as a whole and followers have as much responsibility for decisions as the leader. They participate as equals in decision-making.
Delegative	The leader describes the problem or need and the conditions that have to be met, and makes suggestions, but the leader leaves it to followers to decide what to do and how to do it.

Adapted from: Gill, R.W.T. 1997. ***Cross-cultural Similarities and Differences in Leadership Styles and Behaviour: A Comparison between UK and Southeast Asian Managers.*** Working Paper No. LT-RG-97-8. Ross-on-Wye, Herefordshire, UK: The Leadership Trust Foundation. (Originally published in Bass, B.M. *et al.* 1975. Management styles associated with organizational, task, personal and interpersonal contingencies. ***Journal of Applied Psychology,*** 60(6): 720-729.)

styles than lower-level managers. In addition, middle-level managers appear to use a delegative style more than lower-level managers do and to use a delegative style less than senior-level managers do. It also appears that the use of a consultative style remains constant across the various hierarchical levels in organizations.

Oshagbemi and Gill (2004) suggest the reason why senior-level managers use delegative and participative styles more than managers lower in the organization do is hierarchical in nature. For example, they suggest that the opportunity to participate in policy formulation and decision-making and to delegate tasks is more prevalent at senior management levels than at lower management levels. This view

supports the models previously reviewed in this chapter (Brown and Jaques, 1965; Jacobs and Jaques, 1987; Jaques, 1976, 1989, 1990; Jaques and Clement, 1991; Katz and Kahn, 1966, 1978; Mintzberg, 1973, 1980).

An earlier study referring to Chinese and Japanese organizations, however, has reported no differences in the use of leadership styles across hierarchical levels (Ming-Wang and Satow, 1994). The results concerning leadership style across hierarchical levels, therefore, are mixed. National culture is a factor that differs between these two studies and, therefore, may account for the differences in findings. For example, differences in the use leadership styles between UK and Southeast Asian managers have been found in previous research (Gill, 1985, 1999a). Gill found that Southeast Asian managers see themselves as more directive and less delegative than Western managers do. This may also be the case between UK managers and their Chinese and Japanese counterparts. Further research, however, is needed to test this hypothesis, as Chinese and Japanese cultures may differ from Southeast Asian cultures, which are more heterogeneous.

3.4 Conclusions and Implications for the Thesis

The leadership and management literature suggests that the need for 'human' or interpersonal skills remains constant across an organizational hierarchy and that leadership ability is a part of this skill set (Katz, 1974). This may imply that the behaviours and skills required in leadership are expected to remain constant across hierarchical levels. Some scholars (e.g. Mintzberg, 1973, 1980), however, argue that leadership is needed to carry out other managerial roles, e.g. conceptual and technical tasks (Hunt, 1991) besides human and interpersonal tasks, and in doing this could reflect differences in leadership requirements across hierarchical levels in an organization. For example, the need for conceptual skills increases while the need for technical skills decreases at higher organizational levels (Katz, 1974). In addition, at higher levels of management, tasks and issues became more unstructured, unspecialised, long-range, and complex, while for lower-level managers tasks and issues are characterised by brevity and fragmentation and a greater focus on current and specific issues (Mintzberg, 1973, 1980).

These theoretical suggestions are also reflected in the general leadership literature. For example, the inference that the level of complexity and length of time increase at higher levels of an organization (Mintzberg, 1973, 1980) is also suggested by stratified-systems theory (Brown and Jaques, 1965; Jacobs and Jaques, 1987; Jaques, 1976, 1989, 1990; Jaques and Clement, 1991). In addition, the systems theory of leadership suggests little leadership is needed at lower levels of an organization because of the focus on administration (Katz and Kahn, 1966, 1978). There is, therefore, convergence between leadership and management theories concerning potential leadership differences across hierarchical levels. This convergence could, however, be due to the lack of clarity concerning the concepts of management and leadership and an example of the terms being used synonymously (see section 2.4 in the previous chapter).

At this point there are two possible conclusions concerning leadership and hierarchical level:

1. There are no differences in leadership requirements across hierarchical levels: this is supported by the first management model reviewed (Katz, 1974).

2. There are differences in leadership requirements across hierarchical levels: this is supported by other management and leadership models reviewed (Brown and Jaques, 1965; Jacobs and Jaques, 1987; Jaques, 1976, 1989, 1990; Jaques and Clement, 1991; Katz and Kahn, 1966, 1978; Mintzberg, 1973, 1980).

Differences in leadership behaviour based on differences between higher-level and lower-level managers in the nature of managerial work may be expected. For example, charisma is expected to be effective at all levels, but it is more evident at the top levels of an organization (Bass, 1992; Katz and Kahn, 1966, 1978). At lower organizational levels more equity in the use of rewards and sanctions may be expected to be evident (Katz and Kahn, 1966, 1978).

Furthermore, a wider variety of leadership skills exhibited at the higher levels of an organization are expected (Hunt and Ropo, 1998). Recent research, for example, has found that managers in more senior positions in organizations use a wider variety of leadership styles (directive, consultative, participative and delegative

styles) than managers at lower levels of the organizational hierarchy (Oshagbemi and Gill, 2004).

The thesis is that leadership behaviour of managers will differ in accordance with their hierarchical level within the organization, reflecting Dubin's (1979) theory of 'leadership *of* organizations' versus 'leadership *in* organizations'. Leadership *of* organizations involves higher-level managerial work that is characterised by greater complexity, longer time spans, change, the creation of new organizational structures and policies, and conceptual skills. Leadership *in* organizations involves lower-level management work, characterised by the greater need for administration, less complexity, shorter time spans and technical skills. Bass and Avolio's (1993) 'Full Range Leadership' model (reviewed in the next chapter) is used in this research to investigate this proposition. At present the 'Full Range Leadership' model does not take account of the distinction between 'leadership in organizations' and 'leadership of organizations'. New knowledge, therefore, can be gained by using the model as the basis for research concerning leadership and hierarchical level.

The following chapter provides a review of transformational leadership and the development of the 'Full Range Leadership' model. The chapter compares the conclusions highlighted in this chapter with theoretical hypotheses and previous research findings published in the transformational leadership literature.

Chapter 4

Transformational, Transactional and *Laissez-faire* Leadership and Hierarchical Level

4.1 Overview of the Chapter

This chapter reviews transformational, transactional and *laissez-faire* leadership, the development of the 'Full Range Leadership' model (Avolio, 1999; Avolio and Bass, 1993, 2002) and the impact of the Full Range Leadership model on managerial effectiveness, performance and development. The chapter shows that, while the theory of transformational leadership, and the Full Range Leadership model in particular, has had a large and valuable impact on research it does have limitations. The thesis targets one particular limitation: whether or not the model can be applied across all hierarchical levels of management within an organization. This chapter therefore includes a review of theory and research concerning the Full Range Leadership model across hierarchical levels in organizations. This review incorporates points raised in the general leadership literature and discussed in the previous chapter.

4.2 Transformational Leadership

Current attention to transformational leadership has been described as being at stage two of the evolution of new theories: evaluation and augmentation (Hunt, 1999). This entails a critical review with a particular focus on identifying moderating and mediating variables (Antonakis *et al.*, 2003). An investigation of the potential moderating effect of hierarchical level on transformational leadership is therefore viewed as timely.

The origin of the theory of transformational leadership is a study of rebel leadership and revolution (Downton, 1973). But it was in the late 1970s that 'transforming leadership' was contrasted with 'transactional leadership' (Burns, 1978). James MacGregor Burns defined transactional leadership as a transaction or exchange

between leader and followers, such as providing a material or psychological reward for followers' compliance with the leader's wishes. Transforming leadership, on the other hand, Burns suggested, moves people up the 'hierarchy of needs' (Maslow, 1954, 1968) and addresses people's higher-order 'needs' for achievement, self-esteem and self-actualisation – for self-fulfilment.

Empirical evidence shows transformational leadership is exhibited by people in many diverse roles in society, business and politics (Avolio, 1999; Bass, 1998). For example, there is evidence of transformational leadership being exhibited by:

- Housewives active in the community (Avolio and Bass, 1994)
- Chief executive officers (Yokochi, 1989)
- Army colonels (Bass, 1985)
- World class leaders of movements (Bass, 1985)
- Methodist ministers (Onmen, 1987)
- School administrators (Koh, 1990; Leithwood and Jantzi, 1990)
- Roman Catholic brothers and sisters (Druskat, 1994)
- Presidents of the United States (House *et al.*, 1991)

Theories of transformational leadership give us a clearer understanding of the reasons why some leaders fail, some survive and some transform the groups, organizations and societies they lead to new heights of achievement perhaps previously only imagined (Gill *et al.*, 1998). Furthermore, transformational leadership describes what leaders do when they raise motivation and achievement beyond previous expectations and when they develop and motivate people to their fullest potential and contribution (Gill *et al.*, 1998).

Indeed, research shows (Avolio, 1999) that transformational leadership increases:

- Commitment (Pitman, 1993)
- Motivation (Masi, 1994) and loyalty (Kelloway and Barling, 1993) of followers
- Project quality and innovation (Keller, 1992)
- Sales performance (Garcia, 1995)
- Group/team performance (Carless *et al.*, 1995; Sivasubramaniam *et al.*, 1997; Thite, 1997)

- Church attendance (Onmen, 1987)
- Organizational commitment and job satisfaction (Walumbwa *et al.*, 2004)

Transformational leadership has also been shown to increase the likelihood (Arnold *et al.*, 2001; Avolio, 1999; Kelloway and Barling, 2000) of:

- Managers championing projects (Howell and Higgins, 1990)
- Financial success of teams and departments (Avolio, *et al.*, 1988; Howell and Avolio, 1993)
- Managers gaining a better performance appraisal (Hater and Bass, 1988; Waldman *et al.*, 1987)
- Promotion (Waldman, *et al.*, 1990; Yammarino and Bass, 1990)
- Reaching long-term performance objectives in banks (Geyer and Steyrer, 1998).
- Creating collaborative cultures in schools (Leithwood and Jantzi, 1990)
- Commitment to the organization and related citizenship behaviour and job satisfaction in schools in Singapore (Koh, 1990)
- Commitment to the organization/group (Arnold *et al.*, 2001; Barling *et al.*, 1996; Bycio *et al.*, 1995; Koh *et al.*, 1995)
- A sense of fairness within the organization (Pillai *et al.*, 1995)
- Trust in the leader/group (Arnold *et al.*, 2001; Pillai *et al.*, 1995; Podsakoff *et al.*, 1996)
- Enhanced satisfaction with both the job (Hater and Bass, 1988) and the leader (Hater and Bass, 1988; Koh *et al.*, 1995)
- Lower levels of both job stress (Sosik and Godshalk, 2000) and role stress (Podaskoff *et al.*, 1996)
- Subordinates' self-efficacy beliefs (Kirkpatrick and Locke, 1996) and team efficacy (Arnold *et al.*, 2001)
- Group potency and performance (Sosik *et al.*, 1997)

Furthermore, there is research evidence that shows transformational leadership is positively related to work group reputation, co-operation and warmth (Weierter, 1994), friendliness (Krishnan, 2004; Weierter, 1994), reasoning (Krishnan, 2004), voting preferences and actual voting behaviour in U.S. presidential elections (Pillai and Williams, 1998; Pillai *et al.*, 2003), and higher levels of moral reasoning (Turner *et al.*, 2002). Another study, however, did not find a relationship between

transformational leadership and moral reasoning (Sivanathan and Fekken, 2002). Recent research also suggests that remote transformational leadership (e.g. using transformational leadership in e-mail messages) still has the same positive effects on performance and attitudes that occur within face-to-face interaction (Kelloway *et al.*, 2003).

Importantly, the association between transformational leadership and organizational outcomes have been substantiated in both laboratory studies (e.g. Howell and Frost, 1989; Kirkpatrick and Locke, 1996) and field studies (e.g. Barling *et al.*, 1996; Howell and Avolio, 1993) that go beyond traditional correlational findings (Kelloway and Barling, 2000).

Empirical studies, therefore, consistently show that the theory of transformational and transactional leadership is adequately descriptive of leadership behaviour in all facets of society (Atwater and Yammarino, 1992; Avolio *et al.*, 1988; Bass, 1985; Bass *et al.*, 1987; Hater and Bass, 1988; Sosik, 1997; Yammarino *et al.*, 1993).

4.3 The 'Full Range Leadership' Model

Several theorists (Alimo-Metcalfe and Alban-Metcalfe, 2001; Bass, 1985, 1998; Bennis and Nanus, 1985; Saskin, 1988; Tichy and Devanna, 1986, 1990) have proposed versions of transformational leadership that include and extend these ideas (Yukl, 1999). One of the most important versions that has generated the most research (Yukl, 1999) is the 'Full Range Leadership' model (Avolio, 1999; Avolio and Bass, 1993, 2002). This comprises the dimensions *laissez-faire*, transactional and transformational leadership. According to this model, transformational leadership encourages people to look beyond self-interest for the common good (Bass, 1985, 1990; Bass and Avolio, 1994).

Transformational leadership in the Full Range Leadership model comprises five dimensions: attributed charisma (AC), idealised influence (II), inspirational motivation (IM), individualised consideration (IC), and intellectual stimulation (IS). Transactional leadership, on the other hand, comprises three dimensions: contingent reward (CR) and active (MBEA) and passive (MBEP) management-by-

exception. A third dimension is *laissez-faire* (LF), which is described as 'non-leadership'. Definitions of the nine dimensions are given in Table 4.1.

The model suggests *laissez-faire* leadership is the most passive and ineffective dimension and that the five transformational leadership dimensions are the most active and effective (see Figure 4.1).

Despite the evidence highlighted above concerning the effectiveness of transformational leadership there is evidence that suggests *both* active transactional and transformational leadership can be effective. For example, recent research found that both active transactional and transformational leadership behaviours were positively correlated with potency, cohesion and performance in 72 U.S. Army platoons (Bass *et al.*, 2003). Previous research supports this finding, suggesting that the most effective leaders typically display both transformational and transactional leadership (Avolio and Bass, 1998; Avolio *et al.*, 1999a; Bass and Avolio, 1993; Curphy, 1992; Hater and Bass, 1988; Howell and Avolio, 1993; Kane and Tremble, 1998).

There is also evidence that transformational leadership augments transactional leadership, predicting levels of extra effort, job motivation, and moral commitment (Gill, *et al.*, 1998; Kane and Tremble, 1998). In addition, the magnitude of the augmentation effect has been shown to be greater at higher officer-levels, as opposed to lower officer-levels, in the US Army (Kane and Tremble, 1998).

The Full Range Leadership model (Avolio & Bass, 1993), therefore, has been hailed as the leadership development solution for all managers regardless of organizational and national boundaries (Avolio, 1999; Bass, 1997a). Indeed, research has shown that the 'Full Range Leadership Programme' (FRLP), which focuses on developing transformational leadership, has positive results in many applications (Avolio and Bass 1998; Barling *et al.*, 1996; Bass, 1998; Dvir 1998).

Table 4.1: Definitions of the Dimensions of the 'Full Range Leadership' Model

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Transformational leadership

- *Attributed charisma/ Idealised Influence* - Leaders behave or are attributed with characteristics that result in them being role models for their followers. The leaders are admired, respected, and trusted. Followers identify with the leaders and want to emulate them; leaders are endowed by their followers as having extraordinary capabilities, persistence, and determination. The leaders are willing to take risks and are consistent rather than arbitrary. They can be counted on to do the right thing, demonstrating high standards of ethical and moral conduct.
- *Inspirational Motivation* - Leaders behave in ways that motivate and inspire those around them by providing meaning and challenge to their followers' work. Team spirit is aroused. Enthusiasm and optimism are displayed. Leaders get followers involved in envisioning attractive future states; they create clearly communicated expectations that followers want to meet and also demonstrate commitment to goals and the shared vision.
- *Intellectual Stimulation* - Leaders stimulate their followers' efforts to be innovative and creative by questioning assumptions, re-framing problems, and approaching old situations in new ways. Creativity is encouraged. There is no public criticism of individual members' mistakes. New ideas and creative problem solutions are solicited from followers, who are included in the process of addressing problems and finding solutions. Followers are encouraged to try new approaches, and their ideas are not criticised because they differ from the leaders' ideas.
- *Individualised Consideration* - Leaders pay special attention to each followers' needs for achievement and growth by acting as coach or mentor. Followers and colleagues are developed to successively higher levels of potential. Individualised consideration is practised when new learning opportunities are created along with a supportive climate. Individual differences in terms of needs and desires are recognised. The leader's behaviour demonstrates acceptance of individual differences. A two-way exchange in communication is encouraged, and 'management by walking around' workspace is practised. Interactions with followers are personalised. The leader listens effectively and delegates tasks as a means of developing followers. Delegated tasks are monitored to see if followers need additional direction or support and to assess progress; ideally, followers do not feel they are being checked.

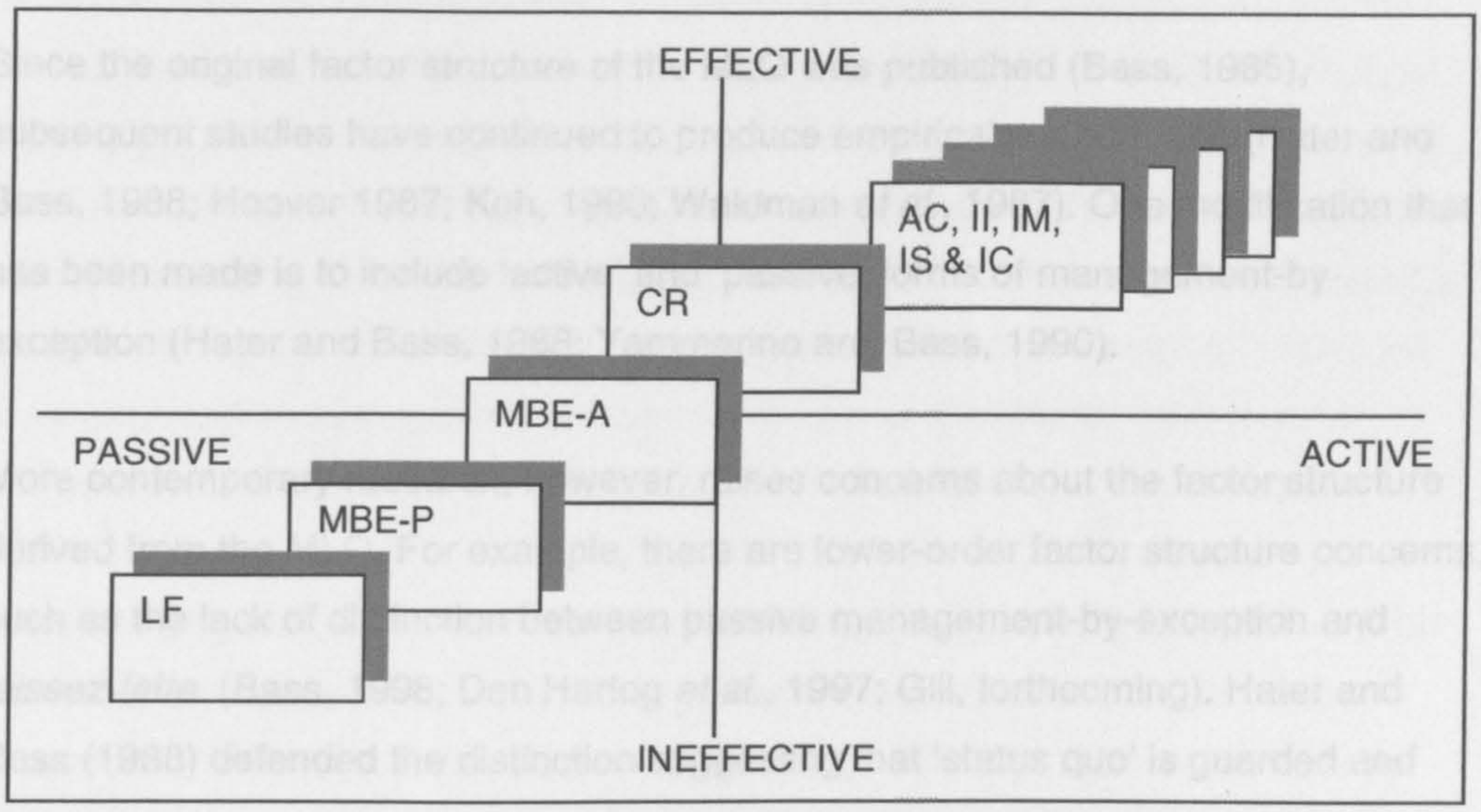
Transactional leadership

- *Contingent Reward* - The leader assigns or gets agreement on what needs to be done and promises rewards or actually rewards others in exchange for satisfactorily carrying out the assignment.
- *Management-by-Exception (active and passive)* - The leader actively monitors deviations from standards, mistakes, and errors in follower assignments and takes corrective action as necessary or waits passively for deviations, mistakes, and errors to occur and then takes corrective actions.

***Laissez-faire* leadership** - The leader avoids taking a stand, ignores problems, does not follow up, and refrains from intervening.

Source: Bass, B.M. (1998) ***Transformational leadership: Industry, military, and educational impact.*** Mahwah, NJ: Lawrence Erlbaum Associates, pp5-7.

Figure 4.1: The 'Full Range Leadership' Model



Adapted from Bass, B.M. and Avolio, B.J. (1994). 'Introduction'. In B.M. Bass and B.J. Avolio (Eds.), ***Improving Organizational Effectiveness through Transformational Leadership,*** pp. 5-6. Thousands Oaks, CA: Sage.

These improvements, however, tend to be accompanied by a reduction in the use of managing-by-exception (Bass, 1998; Bass and Avolio, 1990; 1994). Yet, as is discussed above, active transactional behaviours, especially contingent reward, but also active management-by-exception, have also been found to be effective alongside transformational leadership behaviours. A reduction in the use of active management-by-exception, therefore, is expected to be detrimental in some circumstances.

Before the thesis explores where this may be the case it is important to review other criticisms of the Full Range Leadership Model. A prominent contemporary discussion centres on the factor structure derived from the Multifactor Leadership Questionnaire (MLQ), probably the most commonly used tool for gathering data concerning the 'Full Range Leadership' model and indeed transformational and transactional leadership generally.

4.4 The 'Full Range Leadership' Factor Structure

Since the original factor structure of the MLQ was published (Bass, 1985), subsequent studies have continued to produce empirical support for it (Hater and Bass, 1988; Hoover 1987; Koh, 1990; Waldman *et al.*, 1987). One modification that has been made is to include 'active' and 'passive' forms of management-by-exception (Hater and Bass, 1988; Yammarino and Bass, 1990).

More contemporary research, however, raises concerns about the factor structure derived from the MLQ. For example, there are lower-order factor structure concerns, such as the lack of distinction between passive management-by-exception and *laissez-faire* (Bass, 1998; Den Hartog *et al.*, 1997; Gill, forthcoming). Hater and Bass (1988) defended the distinction suggesting that 'status quo' is guarded and respected in passive management-by-exception whereas it is ignored by the *laissez-faire* leader, who essentially avoids decision-making and supervisory responsibilities. Den Hartog *et al.* (1997) suggest, however, that this distinction is not clear when the empirical evidence is examined. They cite Bass's (1985) data as an example where management-by-exception (passive) and *laissez-faire* form a single higher-order factor. They also cite the findings of Yammarino and Bass (1990) where management-by-exception (passive) and *laissez-faire* correlate positively with each other and negatively with other leadership dimensions and 'passive' and 'active' forms of management-by-exception, supposedly related concepts, are slightly negatively correlated. From the results of their own research Den Hartog *et al.* (1997) also concluded that there is no reason to distinguish between the sub-dimensions *laissez-faire* leadership and passive management-by-exception.

Furthermore, studies (Den Hartog *et al.*, 1997; Lievens *et al.*, 1997; Yammarino and Bass, 1990) have suggested that passive management-by-exception forms a separate factor rather than loading on transactional leadership (Yukl, 1999). In addition, empirical evidence indicates that contingent reward is highly positively correlated with transformational leadership and displays a similar pattern of relationships to outcomes as do the transformational leadership sub-dimensions (Den Hartog *et al.*, 1997; Judge and Piccolo, 2004; Rafferty and Griffin, 2004; Tepper and Percy, 1994).

In addition, the factor 'idealised influence' has been found in a number of studies to be highly correlated with the factor 'inspirational motivation' (Bycio *et al.*, 1995; Carless, 1998; Hinkin and Tracy, 1999; Tepper and Percy, 1994; Yammarino and Dubinsky, 1994). In response, these two dimensions, Bass has suggested, can be combined into one charismatic-inspirational factor (Bass, 1988, 1998). Indeed, the lack of supporting evidence for the four-factor model of transformational leadership represented by the MLQ has led some researchers to retain a three-dimensional conceptualisation (Deluga and Souza, 1991; Howell and Avolio, 1993), which comprises charisma, intellectual stimulation and individualised consideration.

Another study (e.g. Carless, 1998) went further and suggested that the MLQ (Form 5X) does not measure separate transformational leader behaviours but, instead, measures a single hierarchical construct of transformational leadership. Yet this study is limited in its relevance owing to the exclusion of the factor 'inspirational motivation' from the factor structures tested. The study does, however, reflect the earlier concerns found in the literature (Den Hartog *et al.*, 1997; Koh, 1990; Tepper and Percy, 1994; Yammarino and Dubinski, 1994).

In contrast Rafferty and Griffin (2004) suggest a five-factor model of transformational leadership comprising:

- Vision
- Inspirational communication
- Intellectual stimulation
- Supportive leadership
- Personal recognition

Rafferty and Griffin (2004) define 'vision' as:

> *"The expression of an idealized picture of the future based around organizational values"* (p.332)

They focus on vision as opposed to the broader construct of charisma or idealised influence. Vision, as has been suggested by McClelland (1975), results in the internalisation of organizational values and goals. Rafferty and Griffin go on to

suggest that this encourages individuals to behave in particular ways because of the attractiveness of the behaviour itself as opposed to the attractiveness of a given leader. It is certainly worthwhile emphasising organizational values as this has been highlighted in the literature as being a missing concept from the 'Full Range Leadership' model (Gill, forthcoming). In addition, a shift away from charisma or the attractiveness of a leader has the potential to tackle issues relating to dysfunctional transformational or charismatic leadership, discussed in the next section. But, as Rafferty and Griffin themselves admit, charisma is regarded by some scholars (Bass, 1985; Lowe *et al.*, 1996) as the most important component of transformational leadership, and that downplaying personal charisma, as they do, may diminish the theoretical importance of transformational leadership.

Owing to what they suggest is a recurring element in definitions of inspirational leadership, Rafferty and Griffin focus on inspirational communication rather than inspirational motivation. They define inspirational communication as:

> *"The expression of positive and encouraging messages about the organization, and statements that build motivation and confidence."* (p.332)

Although Rafferty and Griffin highlight evidence that inspirational motivation has been defined in various ways (Barbuto, 1997), it is clearly defined within the 'Full Range Leadership' model (see table 4.1). Important perspectives on leadership, such as providing meaning and challenge in followers' work, are lost with their new definition, as is behaviour such as displaying enthusiasm and optimism.

Similarly, with another dimension, supportive leadership, Rafferty and Griffin seem to lose some of the substance of the broader dimension of individualised consideration. They define supportive leadership as:

> *"Expressing concern for followers and taking account of their individual needs."* (p.333)

The only dimension retained from the Full Range Leadership model is intellectual stimulation, and Rafferty and Griffin retain the definition originally given by Bass (1985):

> *"Enhancing employees' interest in, and awareness of, problems, and increasing their ability to think about problems in new ways."* (p.333)

Personal recognition is Rafferty and Griffin's fifth dimension of transformational leadership. Here they acknowledge the close relationship between contingent reward and transformational leadership. They discount the material element of contingent reward in developing the dimension 'personal recognition', and they provide the following definition:

> *"The provision of rewards such as praise and acknowledgement of effort for achievement of specified goals."* (p.334)

There are some useful suggestions made by Rafferty and Griffin, although their suggestions do raise concerns as to the reduction in the detail of behaviours of the Full Range Leadership model. They do, however, highlight the importance of examining individual sub-dimensions of the Full Range Leadership model as well as the higher-order constructs of transformational and transactional leadership. In support, Dvir (1998) has indicated that some of the transformational components in terms of MLQ ratings show significant improvements after training, while others do not, implying the need to research and report results on both higher and lower order dimensions connected with the Full Range Leadership model.

Furthermore, the suggestions above and conflicting factor structures derived from the Multifactor Leadership Questionnaire (MLQ) (discussed in section 6.5) have led some scholars to suggest different conceptualisations of the Full Range Leadership model. For example, Avolio *et al.* (1999a) summarise a number of alternative conceptualisations that have been suggested in the literature as well as some they suggest themselves. These are:

- *Null model* – there is no systematic variance associated with the MLQ and no consistent factor structure can be produced (Avolio *et al.*, 1999a)
- *One-factor model* – all items on the MLQ load onto a "general or global" leadership factor (Avolio *et al.*, 1999a)

- *Two-factor model* – active and passive leadership behaviours (Bycio *et al.*, 1995; Den Hartog *et al.*, 1997). This two-factor model, however, has been discounted by Den Hartog *et al.* (1997) owing to the theoretical importance of the three factors and the differential effects of the two active types of leadership (transformational and transactional) found in many studies (Den Hartog *et al.* 1997 suggest Bryman, 1992 as a good review source for these studies).
- *Alternative two factor model* - active constructive (transformational leadership and contingent reward) and passive corrective leadership (management-by-exception [active and passive] and *laissez-faire*) (Avolio *et al.*, 1999a)
- *Three-factor model* - transformational, transactional (contingent reward and management-by-exception [active]), and passive-avoidant leadership (management-by-exception [passive] and *laissez-faire*) (Avolio *et al.*, 1999a)
- *Alternative three-factor model* - transformational leadership (charismatic/inspirational and intellectual stimulation), developmental/transactional leadership (individualised consideration and contingent reward), passive corrective leadership (management-by-exception and *laissez-faire*) (Avolio *et al.*, 1999a)
- *Four-factor model* – transformational leadership, contingent reward, management-by-exception (active) and passive-avoidant leadership.
- *Five-factor model* – transformational leadership, contingent reward, management-by-exception (active), management-by-exception (passive), *laissez-faire* leadership (Howell and Avolio, 1993)
- *Six-Factor model* - charismatic/inspirational leadership, intellectual stimulation, individualised, contingent reward, management-by-exception (active), passive-avoidant leadership (Avolio *et al.*, 1999a)
- *Seven-factor model* - charismatic/inspirational leadership, intellectual stimulation, individualised consideration, contingent reward, management-by-exception (active), management-by-exception (passive), *laissez-faire* leadership (Avolio *et al.*, 1999a)

Avolio *et al.* (1999a) conclude, however, that the MLQ is best represented by ten lower-order factors and three higher-order factors. The model that Avolio *et al.* (1999a) suggest comprises: transformational leadership (attributed charisma, idealised influence, inspirational motivation and intellectual stimulation), developmental/transactional leadership (individualised consideration and contingent

reward), and corrective-avoidant leadership (management-by-exception [active and passive] and *laissez-faire*).

It has been pointed out, however, that the research discussed above has in some instances tested the 'Full Range Leadership' model across a variety of industrial and cultural settings and hierarchical levels and with non-homogenous groups, which may lead to different factor structures (Antonakis *et al.*, 2003). One example is a study (Bycio *et al.*, 1995) that found that leader gender and pooled ratings from people who reported to leaders at different hierarchical levels may have affected the patterns of factor correlations of the MLQ (Antonakis *et al.*, 2003). In addition, Avolio *et al.* (1999a) point out that Bycio *et al.* (1995) excluded from their data collection the *laissez-faire* scale, potentially affecting the pattern of results reported by them. Taking these considerations into account, a recent analysis of the MLQ (Antonakis *et al.*, 2003) concluded that:

- the nine-factor model best represents the factor structure underlying the MLQ (Form 5X) instrument
- the MLQ can be satisfactorily used to measure 'Full Range Leadership' in relation to its underlying theory
- the findings of this research indicate that it is premature to collapse factors in this model before exploring the context in which the survey ratings are collected

It is important that this thesis addresses these concerns surrounding the factor structure of the 'Full Range Leadership' model derived from the MLQ. It is necessary therefore to test which factor structure best fits the data before conducting in-depth statistical analysis. As is pointed out in section 8.6, however, the method of entering the data into the database makes it impossible to analyse lower-order factor structures. Only higher-order factor structures therefore were investigated. Some more general criticisms of the model have also been posited and are explored below.

4.5 Further Criticism of the 'Full Range Leadership' Model

There is no doubt that the concept of transformational leadership (including the 'Full Range Leadership' model) adds immensely to the understanding of leadership and to leadership development programmes. Transformational leadership, it seems, has rejuvenated leadership research in the past 25 years (Hunt, 1999). It adds visionary aspects of leadership and the emotional involvement of followers or employees to the previously well-established dimensions of leadership - consideration and initiation of structure (Koene *et al.*, 2002). A number of limitations in the research into transformational leadership and especially the 'Full Range Leadership' model, however, are cited in the literature (Bryman, 1992; Gill, forthcoming; Yukl, 1999).

The potential dysfunctionality of transformational leadership, for example, has been insufficiently examined. Transformational leadership has the potential to move organizations in destructive directions. For example, while John F. Kennedy can be described as a transformational leader, so can Adolf Hitler, Vladimir Lenin and other totalitarian leaders (Tourish and Pinnington, 2002). In addition, the 'Full Range Leadership' model does not explain dysfunctional charisma, for example, where a leader's values are highly questionable or where followers are led into disaster and perdition (Gill, forthcoming).

Furthermore, Wright (1996) has suggested that contingent reward may be effective if the promise of reward for achievement is fulfilled but will be ineffective the reward is not produced. Furthermore, he suggests that *laissez-faire* leadership, which is viewed in the model as ineffective, may actually be effective with groups such as highly competent and motivated researchers (Wright, 1996).

In addition, the use of the 'Full Range Leadership' label for the model invites critical evaluation of its completeness (Yukl, 1999). Gill (forthcoming), for example, suggests that the model does not explain the nature of effective visioning and organizational mission, or the place of values, culture and strategy in leadership.

There has been a call for the need to study the nature of contextual influences on the transformational leadership process (Pawar and Eastman, 1997; Antonakis *et al.*, 2003). It has been suggested that the Full Range Leadership model has ignored

situational contingencies, as have other similar models under the umbrella of the 'New Leadership': they have returned to the 'one best way of leading' approach (Bryman, 1992; Gill, forthcoming). For example, the model has been criticised by Gill (forthcoming) for common method variance (Podaskoff *et al.*, 2003; Podaskoff and Organ, 1986): its dependence upon research data that were collected from the same people, possibly inflating correlation scores. Antonakis (2001) has also found through his research that because of the homogenous samples used in the original research (Bass and Avolio, 1994) and non-homogenous samples used by confirmatory samples, moderators were at play. Such moderators that were hypothesised were the level of risk, stability and bureaucratic conditions, as well as gender and, of particular relevance to this thesis, hierarchical level of the leader.

4.6 Theoretical Perspectives Concerning the Use and Effectiveness of 'Full Range Leadership' Across Hierarchical Levels

Chapter three of the thesis concluded with two general possible outcomes for research concerning leadership across hierarchical levels of an organization. The first suggested no differences in leadership requirements across hierarchical levels, whereas the second proposition suggested differences in leadership requirements. Possible subsequent effects that hierarchical level and time span have on the use and effectiveness of transformational, transactional and *laissez-faire* leadership are, therefore, explored.

The literature so far provides a theoretical picture of transformational and transactional leadership across an organization's hierarchy. Transformational leadership is expected to be practised more and to be more relevant at upper levels than at lower levels in organizations, as the higher levels offer more opportunity to transform organizations through strategic decision-making (Antonakis *et al.*, 2003; Avolio and Bass, 1988; Sinha, 1995; Tichy and Ulrich, 1984). Transformational leadership, however, is not about transforming organizations *per se* but about achieving performance beyond normal expectations by changing how *people* feel about themselves and what is possible and raising their motivation to new heights (Bass, 1985). This hypothesis, therefore, may be unfounded owing to the reliance on an organizational perspective rather than an individual perspective.

In contrast, transactional leadership, and in particular active management-by-exception, is expected to be practised more and to be more relevant at middle-level and lower levels of an organization. This is because managers at middle-level and lower levels have neither sufficient authority nor the scope to make large-scale changes in the organization (Antonakis *et al.*, 2003; Avolio and Bass, 1988; Sinha, 1995; Tichy and Ulrich, 1984). No hypotheses have been put forward so far, however, concerning *laissez-faire* leadership across hierarchical levels in an organization.

These propositions accord with the more general models of leadership across hierarchical levels reviewed earlier. For example, lower-level managers are oriented towards a steady workflow and they focus on maintaining effective operations. Higher-level managers, by comparison, focus on change and the development and communication of new organizational policies (Brown and Jaques, 1965; Jacobs and Jaques, 1987; Jaques, 1976, 1989, 1990; Jaques and Clement, 1991; Katz and Kahn, 1966, 1978; Mintzberg, 1973, 1980; Selznick, 1957).

4.7 Research Perspectives Concerning the Use and Effectiveness of 'Full Range Leadership' Across Hierarchical Levels

Although there is a clear theoretical picture, the results of the research in this area are inconsistent and ambiguous (Bass, 1998; Oshagbemi and Gill, 2004; Stordeur *et al.*, 2000). A number of studies have investigated transformational, transactional and *laissez-faire* leadership across hierarchical levels in organizations (Alimo-Metcalfe and Alban-Metcalfe, 2003; Bass *et al.*, 1987; Lowe *et al.*, 1996; Oshagbemi and Gill, 2004; Stordeur *et al.*, 2000; Yammarino and Bass, 1990; Yokochi, 1989) (see Table 4.2). Results, however, have been varied and do not provide a consistent pattern.

Some studies provide evidence that support the hypothesis that transformational leadership is more prevalent (Bass *et al.*, 1987; Oshagbemi and Gill, 2004) and more effective (Stordeur *et al.*, 2000) at upper-levels of an organization. However, other studies report no differences in the use (Yokochi, 1989) and effectiveness (Lowe *et al.*, 1996) of transformational leadership across hierarchical levels.

Table 4.2: Previous Research on Transformational, Transactional and Laissez-Faire Leadership and Hierarchical Level

Author(s)	Research Description and Results
Bass et al. (1987)	The study produced data on 112 first-level (lower-level) and second-level (middle-level) managers in New Zealand. The results showed second level managers evidenced more transformational leadership (idealised influence, inspirational motivation, individualised consideration and intellectual stimulation) and contingent reward and slightly less management-by-exception.
Yokochi (1989)	The study produced data on Japanese Chief Executive Officers and lower-level managers. The results show no significant differences between CEOs and managers, except contingent reward was used significantly more by CEOs than by managers.
Yammarino and Bass (1990)	A third study of junior and senior naval officers in the US showed varied results For example, junior level officers rated higher on charisma, intellectual stimulation, individualised consideration, contingent reward and passive management-by-exception. Senior level officers, however, rated higher on inspirational leadership, active management-by-exception and laissez-faire.
Lowe et al. (1996)	The results of a meta-analysis showed that leaders at a lower level were judged by their followers as practising more intellectual stimulation, individualised consideration and management-by-exception than their upper level counterparts. This study also found no differences in the effectiveness of transformational leadership across hierarchical levels.
Stordeur et al. (2000)	A fifth study found that transformational leadership was more positively related to perceived unit effectiveness at upper levels that at lower-levels of nursing departments in Belgium. The study also found that active management-by-exception was more related to effectiveness and passive management-by-exception was less negatively associated with effectiveness when they were practised by upper-level leaders than by lower-level leaders in nursing departments
Alimo-Metcalfe and Alban-Metcalfe (2003)	The study conducted an analysis of the top three management levels in the NHS in the UK. The study found that the most transformational managers were senior managers. Chief executive officers and board-level directors were generally less transformational.
Oshagbemi and Gill (2004)	The most recent study to research the 'Full Range Leadership' model across hierarchical levels investigated 405 UK managers from all hierarchical levels. The study produced data on three levels - senior, middle and first-level management. The results showed that contingent reward was exhibited significantly more by senior and middle-level managers than by first-level managers and intellectual stimulation, inspirational motivation and transformational leadership overall were exhibited significantly more by senior-level managers than by both middle and first-level managers. There were no significant differences between hierarchical level in the use of idealised influence, individualised consideration, management-by-exception, laissez-faire or transactional leadership overall.

Furthermore, no evidence is provided to support the contention that transactional leadership is more prevalent and effective at middle-level and lower-levels of the organization. Transactional leadership appears to be used to the same extent by all managers (Oshagbemi and Gill, 2004). Likewise, there is no evidence so far regarding the comparative effectiveness of transactional leadership across hierarchical levels in an organization.

Indeed there is evidence to refute the suggestion in the literature that active management-by-exception is more prevalent and effective at lower-levels in organizations (Antonakis *et al.*, 2003). For example, one study found that senior naval officers in the US exhibited more active management-by-exception than junior naval officers (Yammarino and Bass, 1990). Another study found that active management-by-exception is more related to effectiveness and passive management-by-exception is less negatively associated with effectiveness when they are practised by upper-level leaders than by lower-level leaders in nursing departments (Stordeur *et al.*, 2000). A limitation in this area of research, however, is that some studies (e.g. Bass *et al.*, 1987; Lowe *et al.*, 1996; Oshagbemi and Gill, 2004) fail to distinguish between active and passive management-by-exception, instead using management-by-exception as a composite dimension.

With regard to the use and ineffectiveness of *laissez-faire* leadership across hierarchical levels in organizations, one study reports this behaviour as being used more by upper-level managers than by lower-level managers in organizations (Yammarino and Bass, 1990). Most studies, however, are vague about findings concerning this dimension (Bass *et al.*, 1987; Lowe *et al.*, 1996; Stordeur *et al.*, 2000). A recent study found no differences in the use of *laissez-faire* leadership across hierarchical levels (Oshagbemi and Gill, 2004). No research findings are known for the effectiveness or ineffectiveness of *laissez-faire* across hierarchical levels in organizations.

There are a number of limitations in the research conducted in this area. Firstly, two of the earliest studies used only two hierarchical levels and then generalised the findings across the whole of an organization's hierarchy (Bass *et al.*, 1987; Yammarino and Bass, 1990). Other studies have attempted to gain information across a number of hierarchical levels, but they too have grouped them into only two

categories (Lowe *et al.*, 1996; Stordeur *et al.*, 2000; Yokochi, 1989). Conclusions from these studies, therefore, are too general, and they do not give an indication of specific leadership behaviour across organizational levels.

One study, however, did provide information for three levels – senior-level, middle-level and lower-level managers (Oshagbemi and Gill, 2004), though in this study there may have been differences in leadership behaviour between chief executive officers, directors and other senior-level managers within the 'senior' category. Indeed, another recent study, of the top three management levels in the NHS in the UK, found that the most transformational managers are senior managers (Alimo-Metcalfe and Alban-Metcalfe, 2003). Chief executive officers and board-level directors, on the other hand, were found generally to be less transformational. This situation is viewed by the authors as causing concern owing to the profound impact that top-level managers have upon organizational culture. Yet no explanation is provided for these findings. The research reported in this thesis may provide further evidence to support these differences and possible reasons for their occurrence.

Neither of these studies used the Multifactor Leadership Questionnaire (MLQ), based on Bass and Avolio's 'Full Range Leadership' model. One study opted for an opinion survey developed from the literature, with no information on the reliability and validity of the survey (Oshagbemi and Gill, 2004). The other study used a new instrument (Alimo-Metcalfe and Alban-Metcalfe, 2003), the Transformational Leadership Questionnaire (TLQ) (Alimo-Metcalfe and Alban-Metcalfe, 2001), which makes comparison with other studies in this area difficult.

The meta-analysis by Lowe *et al.* (1996) marked a turning point in research into the Full Range Leadership model as it covered a number of hierarchical levels in organizations and obtained information on perceptions from subordinates as well as from managers themselves. Moreover, it was the first study to investigate the effectiveness of transformational leadership across hierarchical levels of an organization. There are, however, a number of limitations associated with this meta-analysis. One limitation is that not all studies measuring the level of a leader and transformational and transactional leadership were included (Lowe *et al.*, 1996). Different results could have been gained if all studies that had been conducted were included in the analysis. There were also problems with sampling error and

aggregated means bias (Lowe *et al.*, 1996). Furthermore, the categorisation of hierarchical level (e.g. senior, middle and lower) may not match that in other organizations (Hunt, 1991).

To summarise, research in this area is difficult to compare owing to the use of different questionnaires and ratings from differing sources. The use of different perceptions of leader behaviours by using self-ratings and subordinate ratings is useful. It provides a more inclusive view of leadership (Borman, 1991; Mount and Scullen, 2001; Tornow, 1993). It does, however, contribute to the complexity of this area of research. Unclear statistical significance levels (e.g. Bass *et al.*, 1987; Yammarino and Bass, 1990) also contribute to the general mêlée of results.

Furthermore, there are differences between studies in how hierarchical level is defined. For example, some studies define hierarchical level by job title or rank (e.g. Bass *et al.*, 1987; Densten, 2003; Stordeur *et al.*, 2000; Yammarino and Bass, 1990; Yokochi, 1989). Others define hierarchical level according to self-perception: what level managers completing the questionnaire perceived themselves to be (e.g. Oshagbemi and Gill, 2004). One study was not explicit about how hierarchical level was defined (Alimo-Metcalfe and Alban-Metcalfe, 2003). Using rank to define hierarchical level is adequate for structured organizations such as the military, but hierarchical level becomes much more ambiguous below director-level in other organizations such as service industries or manufacturing. This adds further to confusion in this area of research.

There are also differences in sample demographics such as nationality and organizational sector and size. Bass (1998) says that hierarchical level, rank or status and the 'Full Range Leadership' model show a complex pattern of association, depending on branch of service, method of data collection, civilian-military status and nationality.

Hierarchical level may not be the only contextual variable to influence leadership behaviour and leadership effectiveness. Other confounding variables may include national culture (Boehnke *et al.*, 2003; Brodbeck *et al.*, 2000; Gill, 1985, 1997, 1999; Koopman *et al.*, 1999), environmental characteristics, such as whether the environment is dynamic or stable (Brown and Lord, 2001; Keller, 1999; Lord *et al.*, 2001; Lowe *et al.*, 1996), and perception, such as differing rating sources (e.g. self,

subordinate etc.) (Alimo-Metcalfe, 1996; Borman, 1974; Bradley, 1978; Colvin, 2001; Ilgen and Feldman, 1983; Salam *et al.*, 1997). These potential confounding variables may have been having an impact on the varied results found from previous research concerning transformational, transactional and *laissez-faire* leadership and hierarchical level.

Research in this area has been carried out on participants from differing countries: the US (Yammarino and Bass, 1990), the UK (Alimo-Metcalfe and Alban-Metcalfe, 2003; Oshagbemi and Gill, 2004), New Zealand (Bass *et al.*, 1987), Belgium (Stordeur *et al.*, 2000) and Japan (Yokochi, 1989). National cultural differences therefore could be impacting on the results of these studies. In fact a new transformational leadership questionnaire (Alban-Metcalfe and Alimo-Metcalfe, 2000; Alimo-Metcalfe and Alban-Metcalfe, 2001) has been developed in response to concerns about cross-cultural differences in leadership between the US and the UK.

Recent research evidence, however, suggests it is unlikely that there is a significant difference in leadership behaviour between the US, the UK, New Zealand and Belgium. For example, research suggests a more likely distinction is between western and eastern cultures (Boehnke *et al.*, 2003; Gill, 1985, 1997, 1999), and between western cultures and Latin American cultures (Boehnke *et al.*, 2003). National culture differences may therefore be evident between research conducted in Japan and research conducted in more westernised countries. Furthermore, research specifically considering European countries also suggest that differences between the UK and Belgium in terms of leadership is unlikely. These research studies suggest a North Western/South Eastern spilt (Brodbeck *et al.*, 2000; Koopman *et al.*, 1999).

There may also be cultural links to perceptions of hierarchy. For example, Hofstede's (1980, 1991) cultural concept of 'power distance' relates to hierarchy, as it concerns how people handle the fact that people are 'unequal'. Countries with a low power-distance score have a low dependence on superiors. Hofstede's findings suggest little difference between the US, the UK and New Zealand, all scoring low on power distance. Belgium and Japan, however, score much higher than these three countries on power distance. Differences based on cultural perceptions of hierarchy may be present between research with Belgian and Japanese participants

and the research conducted with US/UK and New Zealand participants. This may be a reason why active management-by-exception was found to be related to effectiveness more when practised by upper-level leaders than when practised by lower-level leaders in nursing departments in Belgium (Stordeur *et al.*, 2000), which has not been found by other research and is inconsistent with the theory highlighted earlier.

Furthermore, organizational factors, such as sector, size, technology and culture may also be linked to conceptions of hierarchy. For example, one study has suggested that production departments tend to be more structured compared with other departments in organizations such as sales and research (Lawrence and Lorsch, 1969). Variations in degree of structure may also occur between sectors or industries. With regard to the research described above, the research conducted in the NHS (Alimo-Metcalfe and Alban-Metcalfe, 2003) may have produced findings that are different from other research owing to the more structured hierarchy found in the NHS compared to other organizations. This might explain less transformational leadership being found at the top-level management compared with senior-level management in the NHS, again contradicting theoretical suggestions made earlier.

Lastly, previous research in this area has used perceptions from differing sources. One study used self-reports (Oshagbemi and Gill, 2004), four studies used subordinate ratings of leadership (Alimo-Metcalfe and Alban-Metcalfe, 2003; Bass *et al.*, 1987; Stordeur *et al.*, 2000; Yammarino and Bass, 1990; Yokochi, 1989) and a meta-analysis analysed both peer and subordinate-ratings (Lowe *et al.*, 1996). As has been highlighted previously in this thesis, different rating sources (e.g. self, subordinate etc.) may have differing views on leadership and leadership effectiveness (Alimo-Metcalfe, 1996; Borman, 1974; Bradley, 1978; Colvin, 2001; Ilgen and Feldman, 1983; Salam *et al.*, 1997).

Further research concerning the 'Full Range Leadership' model across hierarchical levels must address these issues regarding potential confounding variables.

4.8 Research Perspectives Concerning the Use and Effectiveness of 'Full Range Leadership' Across Time Spans

SST has been highlighted in the literature review in this thesis as an important model when considering leadership across hierarchical levels in an organization. Research concerning SST and transformational, transactional and *laissez-faire* leadership was also reviewed. A recent study by Densten (2003) used SST as the framework for recording the frequency of leadership behaviours (in the 'Full Range Leadership' model) of 480 senior police officers in Australia. The study categorised the police officers into four ranks that represented equivalent strata in SST (Strata VII-V, Stratum IV, Stratum III, Stratum II). The study found that each rank had a unique set of leadership behaviours that influence the perception of leader effectiveness and extra effort (see Table 4.3).

Table 4.3: Predictors of Leadership Effectiveness and Extra Effort by Time Span Stratum

Stratum	Effectiveness	Extra Effort
VII-V	*Laissez-faire* (-)* Inspirational Motivation (+)	*Laissez-faire* (+) Inspirational Motivation (+)
IV	Contingent Reward (-) Inspirational Motivation (+) Idealised Influence (+)	Contingent Reward (+) Intellectual Stimulation (+)
III	Idealised Influence (+)	Contingent Reward (+) Intellectual Stimulation (+)
II	*Laissez-faire* (-) Management-by-Exception (+) Individualised Consideration (+) Inspiration Motivation (+) Idealised Influence (+)	Intellectual Stimulation (+) Inspirational Motivation (+) Idealised Influence (+)

* The symbols in parentheses denote a positive (+) or negative (-) prediction

Source: Densten, I.L. 2003. Senior Police Leadership: Does Rank Matter? ***Policing: An International Journal of Police Strategies and Management,*** 26(3): 400-418.

Densten's study provides important findings concerning the predictors of leadership effectiveness at different ranks in the police force in Australia. The study differs from the research in this thesis, however, in that it does not measure time span. It is therefore more akin to the hierarchical-level studies mentioned previously. For example, Denston (2003) identified the rank of a police officer and then assumed a relevant time span for that rank. The research in this thesis aims to go further than this by obtaining a measure of time span from managers and then comparing the findings from this research with those of hierarchical-level research.

This thesis so far has reviewed the literature concerning leadership across hierarchical levels in organizations. Taking into consideration the main points of this literature review, the next chapter describes the specific aims and objectives of the research and proposes some experimental hypotheses for testing.

Chapter 5

Research Aims and Objectives

5.1 Outline of the Chapter

The chapter outlines the aims and objectives of the research and states six hypotheses to be tested. It also discusses the concept of 'symmetry of potential outcomes' (Gill and Johnson, 1997), concluding that, whatever the outcome of the research, the results will add to knowledge about leadership.

5.2 Aims and Objectives of the Research: An Overview

Results from previous research are inconsistent. Some inconsistencies are methodological in nature. For example, ratings of a manager's leadership behaviour come from different sources (e.g. self-ratings and subordinate ratings), different questionnaires have been used, and sample demographics are also diverse in respect of nationality of respondents and organizational sector and size. Furthermore, there are differences between studies in how hierarchical level is defined. Any further research in the area needs to address these methodological issues.

The objective of the research was to investigate the consistency of the use and effectiveness of transformational, transactional and *laissez-faire* leadership across hierarchical levels in organizations and to develop a working model based on the findings of the research. Such a model would hopefully provide a clearer picture of 'Full Range Leadership' across hierarchical levels and thereby contribute to more focused leadership development practice. The research will control for nationality and organizational sector. In addition, data from a number of different sources, i.e. self-ratings, subordinates' ratings, superiors' ratings and peer ratings (enabling a 360-degree assessment), will be obtained together with data for more than four hierarchical levels in organizations.

5.3 Research Hypotheses

Research hypotheses were developed from the current theory and past research that has been reviewed above. Two category variables are considered for the research: hierarchical level and time span (taken from Stratified Systems Theory) Time span is seen as an implicit part of hierarchical level. The effects of time span on the use and effectiveness of 'Full Range Leadership', therefore, is not explicitly hypothesised. This was to keep the hypotheses unequivocal. Time span is related to these hypotheses in the discussion held in chapter ten.

Current theory suggests that the use of transformational leadership increases at higher hierarchical levels of organizations. Although the results of research are mixed, there is some support for this proposition. The first research hypothesis, therefore, was:

H1 = Transformational leadership behaviour is exhibited more by managers at higher hierarchical levels organizations than by managers at lower hierarchical levels.

Secondly, current theory suggests that the use of transactional leadership is constant at lower and middle-levels of organizations and decreases at higher-levels. There is, however, no current research support for this proposition. The second hypothesis, therefore, was:

H2 = Transactional leadership is exhibited to the same extent by managers at all hierarchical levels in organizations.

Current theory makes no suggestions concerning *laissez-faire* leadership. Previous research, however, suggests that the use of *laissez-faire* leadership is constant across hierarchical levels. The third hypothesis, therefore, was:

H3 = Laissez-faire leadership is exhibited to the same extent by managers at all hierarchical levels in organizations.

Current theory suggests that the effectiveness of transformational leadership is constant across all hierarchical levels. There is also some research support for this proposition. The fourth hypothesis, therefore, was:

H4 = Transformational leadership is effective to the same extent when exhibited by managers at all hierarchical levels in organizations.

Current theory suggests that the effectiveness of transactional leadership is constant at lower and middle-levels of an organization and decreases at higher levels. There is, however, no current research support for the effectiveness of transactional leadership across hierarchical levels in an organization. The fifth hypothesis, therefore, was:

H5 = Transactional leadership is effective to the same extent when exhibited by lower and middle-level managers in organizations but decreases in effectiveness when exhibited by managers at more senior levels.

Current theory and research do not address the effectiveness of *laissez-faire* leadership. The sixth hypothesis therefore was:

H6 = Laissez-faire leadership is ineffective to the same extent when exhibited by managers at all hierarchical levels in organizations.

5.4 Symmetry of Potential Outcomes of the Research

Symmetry of potential outcomes refers to research that leads to results that are valuable whatever the outcome (Gill and Johnson, 1997). The research reported in this thesis ensured symmetry of potential outcomes. For example, if the results of the research show no difference in the use and effectiveness of transformational, transactional and *laissez-faire* leadership across hierarchical levels, then this would constitute new evidence that leadership is a 'human skill' that does not vary across organizational hierarchies (Katz 1974). These results would also support the suggestion that the 'Full Range Leadership' model is 'the development solution for all managers regardless of hierarchical level' (Avolio, 1999; Bass, 1997a).

Conversely, if the results discover significant differences in the use and effectiveness of transformational, transactional and *laissez-faire* leadership, then this evidence would challenge the applicability of the model across all hierarchical levels of management within an organization in addition to providing useful knowledge about how the model should be applied (Antonakis, 2001; Bryman, 1992). This outcome would also obviate the ambiguity of previous research findings (Bass, 1998; Oshagbemi and Gill, 2004; Stordeur *et al.*, 2000). Either way this research was expected to advance knowledge in the area.

The next chapter discusses issues relating to research methodology, sets out the chosen research methodology, and decides the research instrument and sample.

Chapter 6

Research Methodology

6.1 Outline of the Chapter

This chapter begins with a discussion about qualitative and quantitative research methods in leadership studies and advances that may be made in leadership research methodology through the use of organization-wide and 360-degree data-collection. There is also a review of the Multifactor Leadership Questionnaire (MLQ), probably the most commonly used tool for gathering data concerning the 'Full Range Leadership' model and indeed transformational and transactional leadership generally. Finally, the chapter discusses sample size for the study and the problem of defining hierarchical levels within organizations.

6.2 Qualitative Versus Quantitative Research Methods in Leadership Research

There is a concern among some researchers about the lack of studies that have adopted a qualitative approach to the study of leadership (Alimo-Metcalfe & Alban-Metcalfe, 2001; Conger and Toegel, 2002; Hunt, 1999; Yukl, 1999). Although the use of qualitative approaches has increased (e.g. Bryman *et al.*, 1996; Parry, 1998a), the preponderance of new leadership research continues to be mostly quantitative in its approach. Despite the fact that early research concerning transformational and transactional leadership used a multitude of different research methods of both a qualitative and quantitative nature (House, 1992) it has been posited that the preoccupation with the methodological intricacies and positivism of quantitative empirical research has held leadership research back in the quest for a universal, clearer and more useful theory of leadership (Hunt, 1999).

It was reasoned that the use of a quantitative methodology was beneficial. Firstly, it would enable comparison with previous research. Secondly, it would enable replication in future research initiatives. Indeed, a recent discussion highlights the importance of replication studies (Hubbard and Ryan, 2000): most researchers see

replication studies as providing genuine scientific knowledge. It is also suggested that 'replication with extension', which modifies aspects of the original research design, is a highly suitable means for knowledge creation (Hubbard and Ryan, 2000; Rosenthal and Rosnow, 1984).

Further research in this area therefore should aim to replicate and extend previous research. Two methods of extension are evident. Firstly, data can be gathered across the whole of an organization's hierarchy but categorised by more than the maximum of four categories used in previous research. Secondly, a 360-degree method of data collection can be used extending the 180-degree (self-rating and subordinate rating) nature of previous research. The use of these extended data-collection methods should results in a more comprehensive understanding of the 'Full Range Leadership' model across hierarchical levels in an organization.

6.3 Organization-wide Leadership Research

Leadership has been theorised as a process that occurs throughout an organization (Bass, 1990; Yammarino, 1994). There is a suggestion, therefore, that the process should be researched both quantitatively and qualitatively from an organization-wide perspective (Parry, 1998b). Leadership research using the quantitative approach has neglected the whole-organization perspective in favour of research concerning middle-level and lower levels (Saskin & Fulmer, 1988; Sinha, 1995) and small groups (Hollander, 1985) as distinct research categories. Furthermore, the lack of leadership research at senior and top levels of organizations, other than through qualitative methods such as interviews, is still cited in contemporary literature (Hunt 1991; Lord and Maher 1993; Storey, 2005; Zaccaro and Horn, 2003; Zaccaro and Klimoski 2001).

Earlier approaches to leadership theory and research have focused on upper-level leaders (Bryman, 1996; Hunt, 1991, 1999). Debate about the issue only increases the need for organization-wide leadership research methodologies, and only by using this type of methodology can the issue be resolved.

Research concerning the 'Full Range Leadership' model and hierarchical level suffers from a lack of organization-wide data. Data have been collected concerning most management levels (lower levels up to executive level) within this area of research but only one study has gathered data from an organization-wide perspective (e.g. Stordeur, *et al.*, 2000).

There are limitations in the use of organization-wide data-collection. Firstly, the amount of effort and time needed by people in large organizations to take part in organization-wide research may lead to difficulties in gaining participants (Edwards and Gill, 2002). Secondly, organizations with numerous sites, for example, may find it difficult to track paper-and-pencil questionnaire responses (Chappelow, 1998), while smaller organizations may find the process and the benefits of limited value (Edwards and Gill, 2002). This type of data collection, therefore, may be suitable only for research in medium-sized organizations (Edwards and Gill, 2002, 2003). The thesis also provides an opportunity to investigate this proposition.

6.4 Using 360-degree Feedback in Leadership Research

Distinct advantages of using a 360-degree research methodology are cited in the literature. For example, there is general agreement among academic researchers that there is greater congruence between other-ratings (e.g. superior and subordinate ratings, peer and superior ratings, etc.) than between self-ratings and other-ratings (e.g. self-ratings and superior ratings, self-ratings and peer ratings, etc.) (Furnham and Stringfield, 1994, 1998; Harris and Schaubroeck, 1988; Holzbach, 1978). Surprisingly good correlations of self-ratings with peer and boss ratings, however, have been found with the Multifactor Leadership Questionnaire (MLQ) for platoon leaders in the light infantry in the USA (Bass, 1997b, cited in Gill, forthcoming).

There is also general agreement among empirical research findings that self-ratings are consistently higher than other-ratings. These significant differences are attributed to leniency or halo effects (Furnham and Stringfield, 1998; Harris and Schaubroeck, 1988; Kruger and Dunning, 1999). Gill (forthcoming) asserts that self-reports are open to criticism but goes on to suggest that they can be valid and useful

in some circumstances, when the pressure for 'socially desirable' responses is absent or minimal. He cites, as an example, when respondents receive development feedback on their leadership profiles. Deliberate bias would serve no self-protective purpose and would be against their interest (Gill, forthcoming). Indeed, some researchers suggest the risk of bias from self-ratings is over-estimated (Crampton and Wagner, 1994; Saville *et al.*, 1996; Schwarz, 1999; Spector, 1994). Saville *et al.* (1996) have demonstrated how self-report personality scales show predictable, significant, and substantial correlations with criteria of management job success.

Hough *et al.* (1990) suggest that response distortion due to social desirability does not appear significantly to affect validity coefficients. Other research results, however, consistently show other-ratings to have greater validity than self-ratings (Bass and Avolio, 1997; Conway and Huffcutt, 1997; Harris and Schaubroeck, 1988; Scullen *et al.*, 1996). Atwater *et al.* (1998) recognise that both self-ratings and other-ratings are related to performance outcomes. They suggest, however, that self-other (rating) agreement may be important to outcomes that involve human perceptions (e.g. supervisors' perceptions of subordinates' effectiveness) and less relevant to more objective measure such as sales volume or meeting productivity goals. As this research aims to investigate the effectiveness of transformational, transactional and *laissez-faire* leadership across hierarchical level and time spans, gaining perceptions other than merely self-ratings therefore is relevant and important.

Furthermore, because contemporary organizations are characterised by flattened hierarchies and team-based work (London and Tornow, 1998), it is especially important to obtain assessments of an organizational member from multiple sources (Mount and Scullen, 2001). A multiple-response method generates a more complete picture of the behaviour of a person than any single perspective can provide (Borman, 1991; Mount and Scullen, 2001; Tornow, 1993).

The use of 360-degree methods in research in general, however, is rare in the literature (Furnham and Stringfield, 1998). In response to the need for multiple responses most academic research has focused only on 180-degree (self and subordinate) assessment (Bryman, 1992; Furnham and Stringfield, 1998; Schriesheim and Kerr, 1977). This is certainly the case for research concerning transformational and transactional leadership and hierarchical level (Alimo-Metcalfe

and Alban-Metcalfe, 2003; Bass *et al.*, 1987; Lowe *et al.*, 1996; Oshagbemi and Gill, 2004; Stordeur *et al.*, 2000; Yammarino and Bass, 1990; Yokochi, 1989).

There is a distinct advantage to shifting from 180-degree research to 360-degree research methodology, especially when concerned with leadership research (Waldman and Yammarino, 1999): ratings of leadership may systematically differ, depending on who provides the rating (Antonakis, *et al.*, 2003). Aspects of behaviour deemed to be important by one member of an organization may be different from those regarded as important by others (Alimo-Metcalfe, 1996; Borman, 1974; Bradley, 1978; Colvin, 2001; Ilgen and Feldman, 1983; Salam *et al.*, 1997). Alimo-Metcalfe (1996) suggests superiors, for example, tend to focus on technical managerial skills, such as decision making and problem solving, whereas subordinates are more concerned with interpersonal skills, sensitivity, empowerment and visionary leadership. There is empirical evidence to support this 'eye of the beholder' view of leadership effectiveness. Salam and colleagues (1997) found that challenging the *status quo* (an integral part of intellectual stimulation) and encouraging independent action are viewed by bosses as negatively related to performance while subordinates viewed them as positively related.

Gill (1998) welcomes the inclusive view provided by 360-degree assessment, and Parry (1998c) argues that, because leadership involves followership (Hollander, 1992), it is necessary that leadership outcome data should be gained from others as well as from leaders themselves. This refers not only to subordinates, as leadership may be exercised in all relationships, including with superiors and peers (Gill, 2001; Stewart, 1982). In light of these considerations the research project used a 360-degree methodology.

6.5 The Multifactor Leadership Questionnaire (MLQ): Reliability and Validity

The Multifactor Leadership Questionnaire for Research (MLQ-Form 5X-Short) (Bass & Avolio, 1995) was used. The MLQ is a 45-item questionnaire with a five-point Likert-type scale for rating the frequency of use of leadership behaviours. The rating scale has the following designations: 0 = 'not at all'; 1 = 'once in a while'; 2 = 'sometimes'; 3 = 'fairly often'; and 4 = 'frequently, if not always'. The first 36 items

measure leadership behaviour and the remaining nine items measure leader effectiveness, satisfaction with the leader and his or her methods, and the extra effort provided by followers using a similar Likert-type rating scale.

The 'effectiveness' measure includes items concerning meeting others' job-related needs, representing others to higher authority, meeting organizational requirements, and the effectiveness of the manager's group/team. The 'satisfaction' measure includes items concerning the manager's ability to work with others and lead in a satisfactory way. The 'extra effort' measure includes items concerning the manager's ability to get others to do more than they expected to do, heighten others' desire to succeed, and increase others' willingness to try harder.

The reliability coefficients for the MLQ (see Table 6.1) are adequate. All reliability coefficients exceed the conventional level (0.70) for satisfactory internal consistency (Hair *et al.*, 1998; Kline, 1976, 1993; Nunnally, 1978). Some scholars even suggest that 0.60 is satisfactory as the 'criterion-in-use' (Peterson, 1994; Slater, 1995), which would mean that coefficients for the MLQ are more than adequate. Subsequent research has supported these findings (Antonakis, 2001).

As was discussed earlier in this thesis, since the original factor structure of the MLQ was published (Bass, 1985) subsequent studies have continued to produce further empirical support for it (Hater and Bass, 1988; Hoover 1987; Koh, 1990; Waldman *et al.*, 1987). A modification made as a result of research has been to include 'active' and 'passive' forms of management-by-exception (Hater and Bass, 1988; Yammarino and Bass, 1990).

More contemporary research (highlighted in detail in section 4.4 of the thesis), however, raises concerns about the MLQ. For example, the factor 'idealised influence' is found in a number of studies to be highly correlated with the factor 'inspirational motivation' (Bycio *et al.*, 1995; Carless, 1998; Hinkin and Tracy, 1999; Tepper and Percy, 1994; Yammarino and Dubinsky, 1994). Bass suggested in response to this that these two dimensions can be combined into one charismatic-inspirational factor (Bass, 1988, 1998).

Table 6.1: Reliability Coefficients for the MLQ-FORM 5X

Scale	Reliability Score
Attributed Charisma (AC)	.86
Idealised Influence (II)	.87
Inspirational Motivation (IM)	.91
Intellectual Stimulation (IS)	.90
Individualised Consideration (IC)	.90
Contingent Reward (CR)	.87
Management-by-Exception (active) (MBEA)	.74
Management-by-Exception (passive) (MBEP)	.82
Laissez-faire (LF)	.83
Extra Effort (EE)	.91
Effectiveness (EFF)	.91
Satisfaction (SAT)	.94

N.B. Sample = 2080 subjects.

Source: Avolio, B.J., Bass, B.M., & Jung, D.I. 1995. ***Construct validation and norms for the Multifactor Leadership Questionnaire (MLQ-FORM 5X).*** CLS Report 95-4, September. New York, Binghamton: Center for Leadership Studies, Binghamton University, p27.

The validity report for the MLQ indicates similar problems (Avolio *et al.*, 1995). The report shows the convergent and discriminant validity for the MLQ (Form 5X-short) using Partial Least Squares (PLS) analysis. It is recommended, when using this analysis, that the diagonal elements (average variances extracted by constructs and correlations between constructs) should be greater than entries in corresponding rows and columns for convergent and discriminant validity to be adequate. All measures were found to meet this criterion except one – idealised influence (see Table 6.2). Similar findings emerged in a series of LISREL (a software package for structural equation modelling) analyses (Avolio *et al.*, 1995).

Table 6.2: Convergent and Discriminant Validity of MLQ-FORM 5X Using Partial Least Squares (PLS) Analysis

	AC	II	IM	IS	IC	CR	MBE (A)	MBE (P)	LF	EFF
AC	.61*									
II	.53	.59*								
IM	.59	.59	.65*							
IS	.50	.62	.60	.66*						
IC	.57	.54	.58	.55	.61*					
CR	.52	.49	.54	.54	.59	.59*				
MBE (A)	.04	.02	.04	.01	.06	.02	.46*			
MBE (P)	.24	.27	.24	.26	.24	.18	.06	.60*		
LF	.22	.21	.20	.19	.18	.12	.04	.47	.53*	
EFF	.27	.17	.20	.17	.18	.17	.03	.14	.14	.68*

* Average variance extracted by constructs

N.B. Average Variance Extracted by Constructs (Diagonal Elements) and Correlations between Constructs (Off Diagonal Elements)

Source: Avolio, B.J., Bass, B.M., & Jung, D.I. 1995. ***Construct validation and norms for the Multifactor Leadership Questionnaire (MLQ-FORM 5X).*** CLS Report 95-4, September. Binghamton, New York: Center for Leadership Studies, Binghamton University, p42.

Hinkin and Tracey (1999) specify two possible explanations for the inadequate convergent and discriminant validity for idealised influence. Firstly, charismatic leaders may not exist or may not be needed in the typical business organization. Secondly, charisma has been theorised as a process of attribution (Conger and Kanungo, 1987) and, therefore, the extent to which it can be operationalised in terms of specific behaviours may be limited. Furthermore, after a re-examination of the items included in the MLQ representing idealised influence, it was concluded that this dimension may be multi-dimensional in nature: it may contain items that assess multiple constructs including behaviours, attributions and outcomes (Hinkin and Tracy, 1999).

After a review of the charismatic leadership literature (Bryman, 1992; Conger and Kanungo, 1987), and in light of the criticisms above, behavioural and attribution items for charisma were included in the MLQ. The inclusion traded off the behavioural purity of the survey to obtain a more comprehensive evaluation of the central component of transformational leadership: charisma (Avolio, *et al.*, 1999a).

In addition, it is unclear whether the MLQ measures attributes of the person being evaluated or merely reflects the evaluators' schema for effective leadership. Implicit theories of leadership (personal views determining the meaning of effective leadership) (Lord *et al.*, 1984; Meindl, 1990) may be at play. Using the MLQ may, as a consequence, have exaggerated the importance of a leader's behaviour to the detriment of important interpersonal and situational factors (Pittenger, 2001).

Furthermore, there may be implicit notions of hierarchy embedded in the MLQ. For example, someone rating a managing director or chief executive officer is more likely to give a higher rating on items relating to dimensions such as 'contingent reward' than if they were rating a lower-level manager, simply owing to the MD or CEO having the final decision regarding any material rewards. As has also been highlighted previously in this thesis, it has been suggested (Selznick, 1957; Gill, forthcoming) that top-level leaders are responsible for the vision and mission of the organization. Items relating to vision in the MLQ, such as *'articulates a compelling vision of the future'*, are therefore in danger of being rated higher for top-level leaders as the perception by other organizational members is that vision and mission is their responsibility.

Although there are identifiable problems with the MLQ, this does not detract from the theory of transformational and transactional leadership (Avolio and Bass, 1993; Hinkin and Tracy, 1999). And independent meta-analyses (Gasper, 1992; Lowe *et al.*, 1996; Patterson *et al.*, 1995) have confirmed that the MLQ can be regarded as providing a satisfactory instrument for assessing transformational leadership, though a more rigorous analysis of the theory is still needed (Hinkin and Tracy, 1999). Furthermore, as Higgs (2002) has highlighted, despite the criticisms of the MLQ, it has been influential in building understanding of leadership in a changing

environment. Therefore, as the study was a replication-with-extension, the MLQ was used for the research.

6.6 The Research Sample

There are some 'rules of thumb' cited in the literature for determining sample size (Roscoe, 1975). Firstly, sample sizes of 30 to 500 are deemed appropriate for quantitative empirical research. Secondly, where samples are to be divided into sub-samples, a minimum sub-sample size of 30 for each category is deemed necessary (Sekaran, 2003).

6.7 Defining Hierarchical Level

The meaning of 'organizational level' and how it should be measured have been cited as important considerations concerning multiple-level leadership research (Nealey and Fiedler, 1968). Cognitive theories of organization (Weick and Bougon, 2001) need to be considered. Perceptions of the hierarchical level of a manager using 360-degree ratings arguably the most rigorous method. This is because management, hierarchy and even organization have been theorised as being construed through cognitive maps (Weick and Bougon, 2001). It seems, therefore, that the true nature of a hierarchy is what people perceive it to be.

This thesis considers three methods of defining hierarchical level:

1. In response to the argument above, unanimous opinion of a manager's level in the organization's hierarchy (cases are used only if all multiple ratings agree on the hierarchical level of the subject)

2. The time span of discretion in the manager's function (Brown and Jaques, 1965; Jacobs and Jaques, 1987; Jaques, 1976, 1989, 1990; Jaques and Clement, 1991)

3. The manager's job or vocation title or rank.

Unanimous opinion of ratings was chosen as the preferred method of defining hierarchical level as it was deemed the most rigorous. Previous research on transformational, transactional and *laissez-faire* leadership has used two methods to define hierarchical level: job or vocation title or rank and the manager's own perception. Using job title or rank as a method of defining hierarchical level seems adequate for structured organizations such as the military. An alternative method, however, is needed for organizations where positions or ranks are more ambiguous or unclear and, therefore, less comparable between organizations. The use of a manager's own opinion is adequate, but the discussion above concerning cognitive maps implies that a consensus opinion would be more accurate.

Using a 360-degree methodology provides other options, such as defining hierarchical level by majority opinion of ratings (cases included if the majority of multiple ratings agreed on the level of a manager). This method would have been less rigorous but yielded a larger sample size. As the sample size for the research was already adequate, majority opinion therefore was not needed as a method of defining hierarchical level. The thesis therefore limits the defining of hierarchical level to two forms: hierarchical level by unanimous opinion of ratings and time span of the manager's function.

Before conducting the main research, a pilot study was conducted to ascertain whether the materials and methodology had the capacity to produce the required data. This study is reported in the next chapter.

Chapter 7

Pilot Study

7.1 Outline of the Chapter

This chapter reviews the pilot study conducted prior to the main research project. Firstly, the chapter reiterates the research hypotheses and summarises the data collection methods and then reports the results. Finally, the chapter discusses the results in relation to the research hypotheses and provides some conclusions.

7.2 Objectives of the Pilot Study

A pilot study was conducted to ascertain whether the materials and methodology for the main study had the capacity to produce the required data. In addition, the results of the pilot study were used as an indication of the results that might be expected from the main study and were, therefore, compared to the research hypotheses stated in chapter five and restated below:

H1 = Transformational leadership behaviour is exhibited more by managers at higher hierarchical levels in organizations than by managers at lower hierarchical levels.

H2 = Transactional leadership is exhibited to the same extent by managers at all hierarchical levels in organizations.

H3 = Laissez-faire leadership is exhibited to the same extent by managers at all hierarchical levels in organizations.

H4 = Transformational leadership is effective to the same extent when exhibited by managers at all hierarchical levels in organizations.

H5 = Transactional leadership is effective to the same extent when exhibited by lower and middle-level managers in organizations but decreases in effectiveness when exhibited by managers at more senior levels in organizations.

H6 = Laissez-faire leadership is ineffective to the same extent when exhibited by managers at all hierarchical levels in organizations.

The methods used for the pilot study are described below.

7.3 Pilot Study Design

The pilot study used a between-groups design with 11 independent variables. They were:

- Attributed charisma (AC)
- Idealised influence (II)
- Inspirational motivation (IM)
- Intellectual stimulation (IS)
- Individualised consideration (IC)
- Transformational leadership (TFL) (a composite of the preceding five variables)
- Contingent reward (CR)
- Management-by-exception (active) (MBEA)
- Management-by-exception (passive) (MBEP)
- Transactional leadership (TAL) (a composite of the preceding three variables)
- *Laissez-faire* leadership (LF)

The three dependent variables were:

- Follower satisfaction
- Leadership effectiveness
- Level of extra effort exerted by followers

A 360-degree format was used, with four categories of rating – self-rating, peer rating, superior rating and subordinate rating. There were two category variables: hierarchical level as judged by unanimous opinion (cases were used only if all ratings agreed on the hierarchical level of the subject) and time span of the role. Owing to the low number of respondents providing a unanimous opinion, however, an alternative category variable, level by manager's own opinion, was used. Three categories of hierarchical level were identified – senior-level management (e.g. managing director and other directors, general manager, site manager), middle-level management (e.g. production manager, sales manager), and lower-level management (e.g. supervisor, team leader). Owing to participant confusion regarding the nature of time span of the role, no information was gained regarding this variable and it was discounted from the analysis. This confusion was noted and the item regarding time span was subsequently reworded to be more explicit.

7.4 Subjects

The pilot sample consisted of 41 managers (5 female and 36 male) (13 senior-level managers, 13 middle-level managers and 15 lower-level managers) who rated themselves and also were rated by 35 superiors, 40 peers and 30 subordinates in a 360-degree rating process. The sample consisted of 97.6% of the management population of a medium-sized organization with 350 employees manufacturing plastics in Glasgow, Scotland.

7.5 Research Instruments

The research instruments consisted of a 360-degree version (both self and other–ratings forms) of the Multi-factor Leadership Questionnaire, Form 5X-short (Bass & Avolio, 1997) (see Appendices 1 and 2) and demographic sheets (both self and other-ratings). A representative from the organization also completed an 'Organization Information Sheet' (see Appendix 3).

7.6 Procedure

Organizations were approached via electronic mail to seek agreement for participation of managers within their organizations (see Appendices 4 and 5). The benefit to their organization (a comprehensive 360-degree appraisal of leadership in their organization) was explained. Agreement of one company to take part in the research was obtained, and a company representative (to receive and distribute the questionnaires) was chosen by the contact person in the company. The questionnaires were posted in sealed envelopes to the company representative, who then distributed the sealed envelopes to the participants in the study. The completed questionnaires were returned to the company representative in sealed envelopes and forwarded to the researcher in a pre-paid envelope. The researcher calculated the ratings for each dimension of the 'Full Range Leadership' model (each independent and dependent variable). These ratings were then collated and analysed using SPSS version 10.

7.7 Data Analysis

The study used mean ratings of the multiple responses (self, peer, superior and subordinate) for analysis purposes. Previous research that has used multiple responses used the average rating for all individuals who responded to the questionnaire as the measure for each scale (Atwater and Yammarino, 1992; Hegarty, 1974; Shipper and Davy, 2002). Such aggregation is deemed appropriate, especially when studying managers, because it reduces random error and perceptual differences (and other unwanted effects mentioned above) among observations by others (Campion, 1988; Shipper and Davy, 2002). Analysis of variance was performed to test for differences in the use of each independent variable. R-to-z transformations and z-tests were performed to test for differences between the correlation coefficients (Pearson's r - independent variable ratings against dependent variable ratings) for each category variable level. A chi-squared 'goodness of fit' test was conducted to determine the likelihood that the independent variable data came from a normal distribution. If this was the case, parametric tests were used; if not non-parametric tests were used (Mann Whitney U test and Spearman's ρ).

7.8 Results of the Pilot Study

All independent variables failed the 'goodness of fit' test. This was not surprising owing to the small sample size, making a normal distribution difficult to attain. The results of non-parametric test alternatives (Mann-Whitney U test and Spearman's ρ) were therefore reported, and z-tests were not performed.

The results of Mann Whitney U-tests showed that senior-level managers exhibited significantly more individualised consideration and management-by-exception (passive) and less management-by-exception (active) than middle-level and lower-level managers. No other significant differences were found.

The results of Spearman ρ correlation analyses (summarised in Tables 7.1 and 7.2) showed that attributed charisma, contingent reward and transformational leadership (overall) appeared conducive to extra effort, effective and satisfying when exhibited by managers at all hierarchical levels. Idealised influence and inspirational motivation appeared conducive to extra effort when exhibited by senior-level and lower-level managers. Individualised consideration appeared conducive to extra effort, effective and satisfying when exhibited by middle-level and lower-level managers. Intellectual stimulation appeared conducive to extra effort when exhibited by lower-level managers, and transactional leadership appeared conducive to extra effort when exhibited by middle-level managers. Management-by-exception (passive) and *laissez-faire* appeared inhibitory to extra effort when exhibited by middle-level and senior-level managers respectively.

Idealised influence appeared effective when exhibited by senior-level managers only and satisfying when exhibited by senior-level and lower-level managers.
Inspirational motivation appeared effective when exhibited by senior-level and middle-level managers and satisfying when exhibited by managers at all hierarchical levels. Intellectual stimulation appeared effective when exhibited by senior-level and lower-level managers and satisfying when exhibited by only lower-level managers.

Table 7.1: Behaviours Found in the Pilot Study to be Conducive to Extra Effort, Effective and Satisfying by Hierarchical Level

	Senior-level	Middle-level	Lower-level
Conducive to extra effort	AC, II, IM, CR, TFL	AC, IC, CR, TFL, TAL	AC, II, IM, IC, IS, CR, TFL
Effective	AC, II, IM, IS CR, TFL	AC, IM, IC, CR, TFL	AC, IS, IC, CR, TFL
Satisfying	AC, II, IM, CR, TFL	AC, IM, IC, CR, TFL	AC, II, IM, IS, IC, CR, TFL

Table 7.2: Behaviours Found in the Pilot Study to be Inhibitory to Extra Effort, Ineffective and Unsatisfying by Hierarchical Level

	Senior-level	Middle-level	Lower-level
Inhibitory to extra effort	MBEP, LF	MBEP, LF	
Ineffective	LF	MBEP, LF	MBEP, LF
Unsatisfying	MBEP, LF	MBEP, LF	MBEP, LF

Management-by-exception (passive) appeared ineffective when exhibited by middle-level and lower-level managers and unsatisfying when exhibited by managers at all hierarchical levels. *Laissez-faire* leadership appeared ineffective and unsatisfying when exhibited by managers at all hierarchical levels. Management-by-exception (active) appeared neither conducive nor inhibitory to extra effort, effectiveness or satisfaction when exhibited by managers at all hierarchical levels. Transactional leadership appeared neither effective nor ineffective and neither satisfying nor unsatisfying when exhibited by managers at all hierarchical levels.

7.9 Discussion

Owing to the small sample sizes in the pilot study the results were regarded as only an indication of expected results in the main research. The results of the pilot study showed no support for the first research hypothesis: no significant differences were found for the use of transformational leadership across hierarchical levels in the organization. Furthermore, the use of all other transformational leadership behaviours did not differ across hierarchical levels, except individualised consideration, which appeared to be exhibited more by senior-level than middle-level and lower-level managers. However, there was support for the second research hypothesis: the use of transactional leadership overall did not differ across hierarchical levels in organizations. The use of management-by-exception (active) specifically, however, appeared constant at lower-levels and middle-levels of the organizations and appeared to be used less by senior-level managers. The third hypothesis was also supported: the use of *laissez-faire* leadership appeared constant across hierarchical levels in the organization.

The results of the pilot study also provided good support for hypotheses four and six: the effectiveness of transformational leadership and the ineffectiveness of *laissez-faire* leadership generally appeared constant across hierarchical levels. There was, however, no support for hypothesis five: the effectiveness of transactional leadership also appeared constant across hierarchical levels in organizations.

7.10 Conclusions of the Pilot Study and Amendments to the Main Research Project

The primary objective of the pilot study was to test the methodology prior to the main study. The data collection methods were successful, with a 94.5% response rate for the 360-degree questionnaires. Some misprints were highlighted, one in the demographics sheet and the other in the self-report questionnaire. These were amended before the main study. The question on the demographics sheet regarding time span of the manager's role was also modified. The item regarding time span

was unclear, which caused all respondents not to respond. Furthermore, the pilot study raised concerns about the ability to gain a large enough sample size using the category variable hierarchical level by unanimous opinion alongside multiple response data. The pilot study highlighted the need to gain a large enough sample size to accommodate the need to discount data if multiple responses and unanimous opinion were not received from participants. In addition, the research hypotheses for the main research all gained some level of support from the results of the pilot study with the exception of hypothesis five. It was therefore decided that the hypotheses should be used in the main research project.

The data collection methods for the main research, after consideration of the points raised above and the methodological discussion in chapter six, are now described in the next chapter.

Chapter 8

Data Collection and Analysis

8.1 Outline of the Chapter

This chapter describes the data collection methods used for the main research project, highlighting the design, details of the subjects, materials, procedure and data analysis.

8.2 Design

The study used a between-groups design with 11 independent variables. These variables were:

- Attributed charisma (AC)
- Idealised influence (II)
- Inspirational motivation (IM)
- Intellectual stimulation (IS)
- Individualised consideration (IC)
- Transformational leadership (TFL) (a composite of the preceding five variables)
- Contingent reward (CR)
- Management-by-exception (active) (MBEA)
- Management-by-exception (passive) (MBEP)
- Transactional leadership (TAL) (a composite of the preceding three variables)
- *Laissez-faire* leadership (LF)

The three dependent variables were:

- Follower satisfaction (SAT)
- Leadership effectiveness (EFF)
- Level of extra effort exerted by followers (EE)

All of these variables are scales constituting the Multifactor Leadership Questionnaire (MLQ).

A 360-degree rating method was used, with four categories of rating – self-rating, peer rating, superior rating and subordinate rating. There were two category variables. The first was hierarchical level as determined by unanimous opinion (cases were used only if all ratings agreed on the hierarchical level of the subject) coded as LEVELU. Using this form of data collection provides a more precise and explicit definition of the hierarchical level of a manager than either self-perception or job title (see section 6.7 in chapter six for further discussion). Five categories of hierarchical level were identified:

- Top-level management (e.g. chairman, chief executive officer, managing director)
- Director-level management (e.g. finance director, operations director and other directors)
- Senior-level management (e.g. general manager, site manager)
- Middle-level management (e.g. production manager, sales manager)
- Lower-level management (e.g. supervisor, team leader).

The second category variable was time span of discretion of the manager's role coded as TIMECAT. Six categories were identified in line with stratified-systems theory (Brown and Jaques, 1965; Jacobs and Jaques, 1987; Jaques, 1976, 1989, 1990; Jaques and Clement, 1991). These were:

- Up to three months (Stratum I)
- Over three months and under one year (Stratum II)
- Over one year and under two years (Stratum III)
- Over two years and under five years (Stratum IV)
- Over five years and under ten years (Stratum V)
- Over ten years and under twenty years (Stratum VI)

8.3 Sample

The original sample consisted of 432 managers. Of this number multiple ratings were gained for 367 managers (55 [15%] were female and 308 [84%] were male; 4[1%] did not give their gender), aged between 21 and 62 years (mean = 42 years) (see Figure 8.1). The multiple ratings consisted of 332 (27%) self-ratings, 308 (25%) superior-ratings, 244 (20%) peer-ratings and 320 (26%) subordinate ratings (see Figure 8.2). Nine ratings could not be identified.

Figure 8.1: Gender of Participants by Age

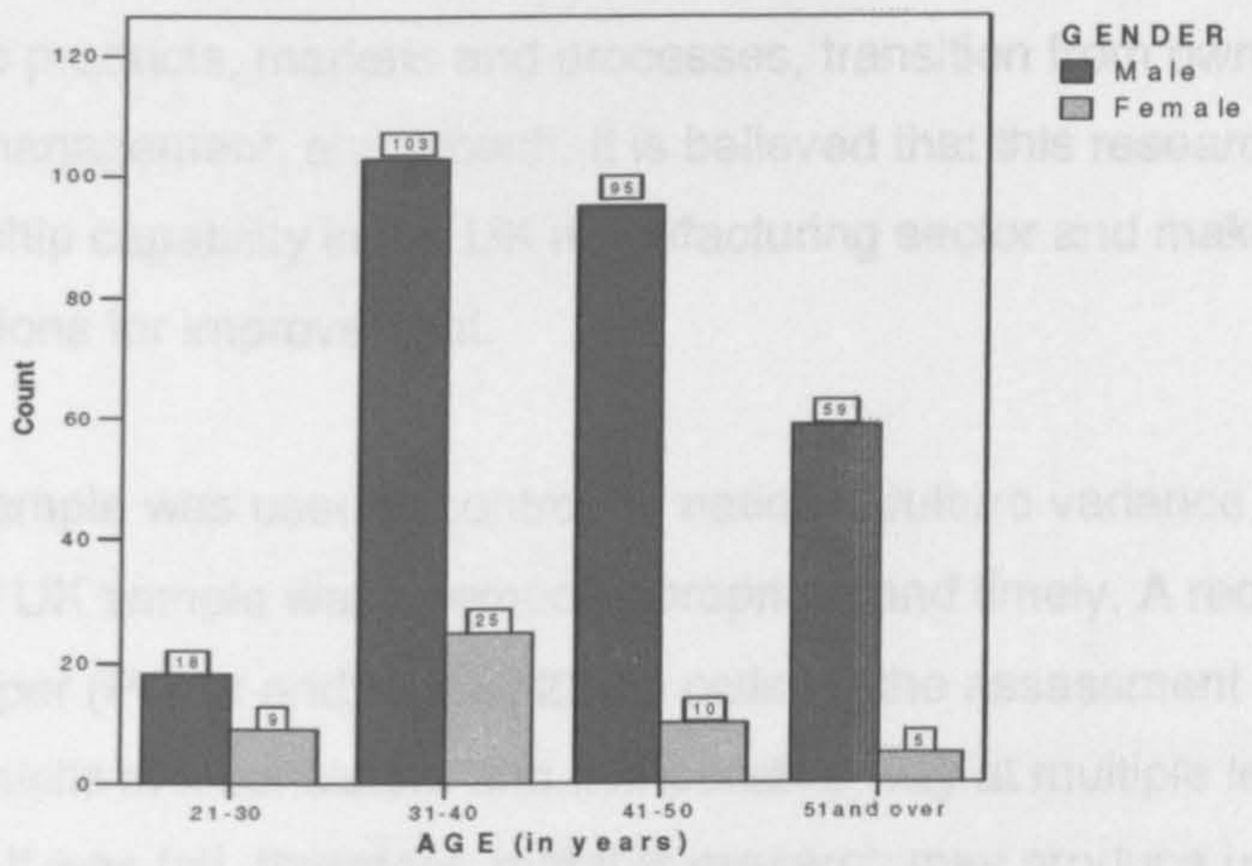
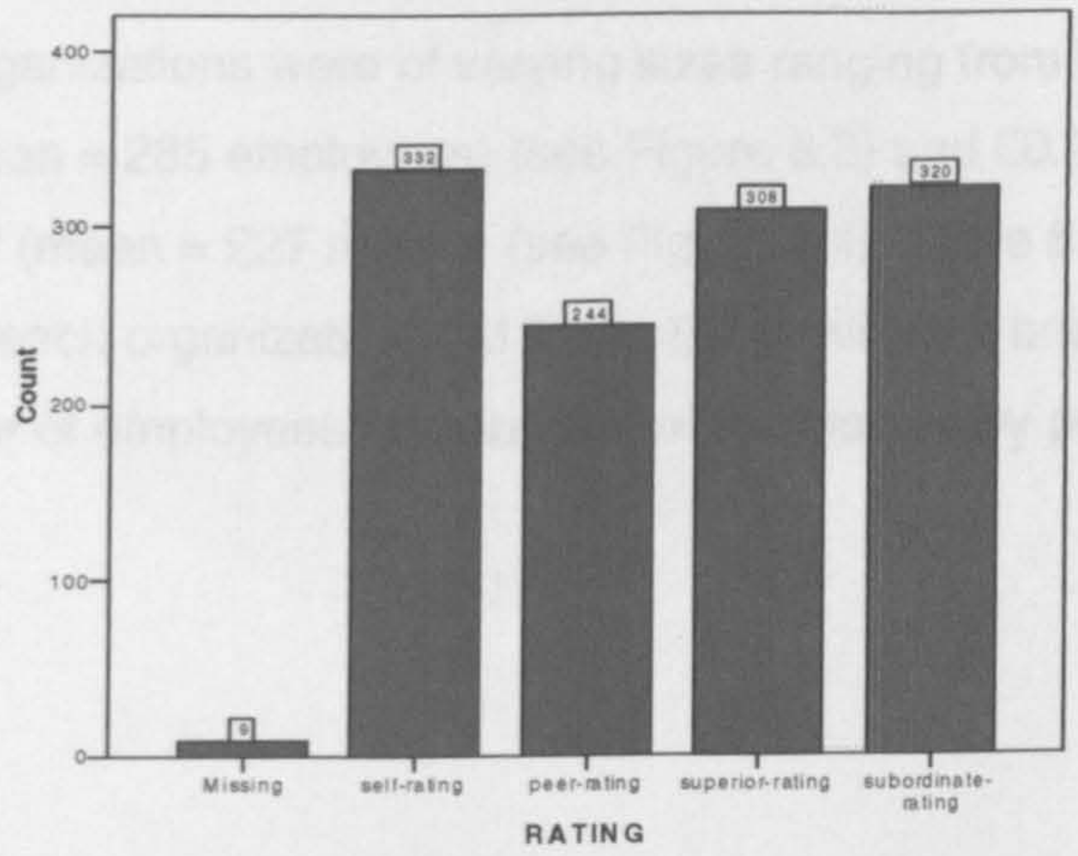


Figure 8.2: Ratings by Category (Self, Superior, Peer and Subordinate)



All participants were drawn from 38 organizations in the UK manufacturing sector. Manufacturing organizations were chosen because of their generally well-defined hierarchical structures. As one study has suggested, production departments tend to be more structured compared to other departments in organizations such as sales and research (Lawrence and Lorsch, 1969), though more up-to-date research is needed to confirm this assumption. Another reason for choosing the manufacturing sector was in response to a recent case study (Manufacturing Foundation, 2002) of thirty small and medium-sized (turnover up to £56million, employees up to 600) manufacturing organizations in the UK. The findings of this study suggest leadership is *the* key factor for the improvement of business performance, pro-active transition management, maintaining the business in the face of severe competition, new approaches to products, markets and processes, transition from owner-managed to shareholder/management, and growth. It is believed that this research may help to define leadership capability in the UK manufacturing sector and make recommendations for improvement.

A solely UK sample was used to control for national culture variance (Bass, 1998). Using a solely UK sample was deemed appropriate and timely. A recent DTI economics paper (Porter and Ketels, 2003) calls for the assessment of UK management skills in a consistent and comparative way at multiple levels of management. It was felt, therefore, that this research may produce useful information on the leadership capacity of UK-based managers.

A reasonable spread across the UK was gained: 56% of participants were based in England, 25% based in Scotland, 17% based in Northern Ireland and 2% based in Wales. The organizations were of varying sizes ranging from five to 3000 employees (mean = 285 employees) (see Figure 8.3) and £0.2 million to £220 million turnover (mean = £27 million) (see Figure 8.4). Table 8.1 provides summary information for each organization and Table 8.2 provides a breakdown of the sample, number of employees and number of companies by product manufactured.

Figure 8.3: Organization Size by Number of Employees

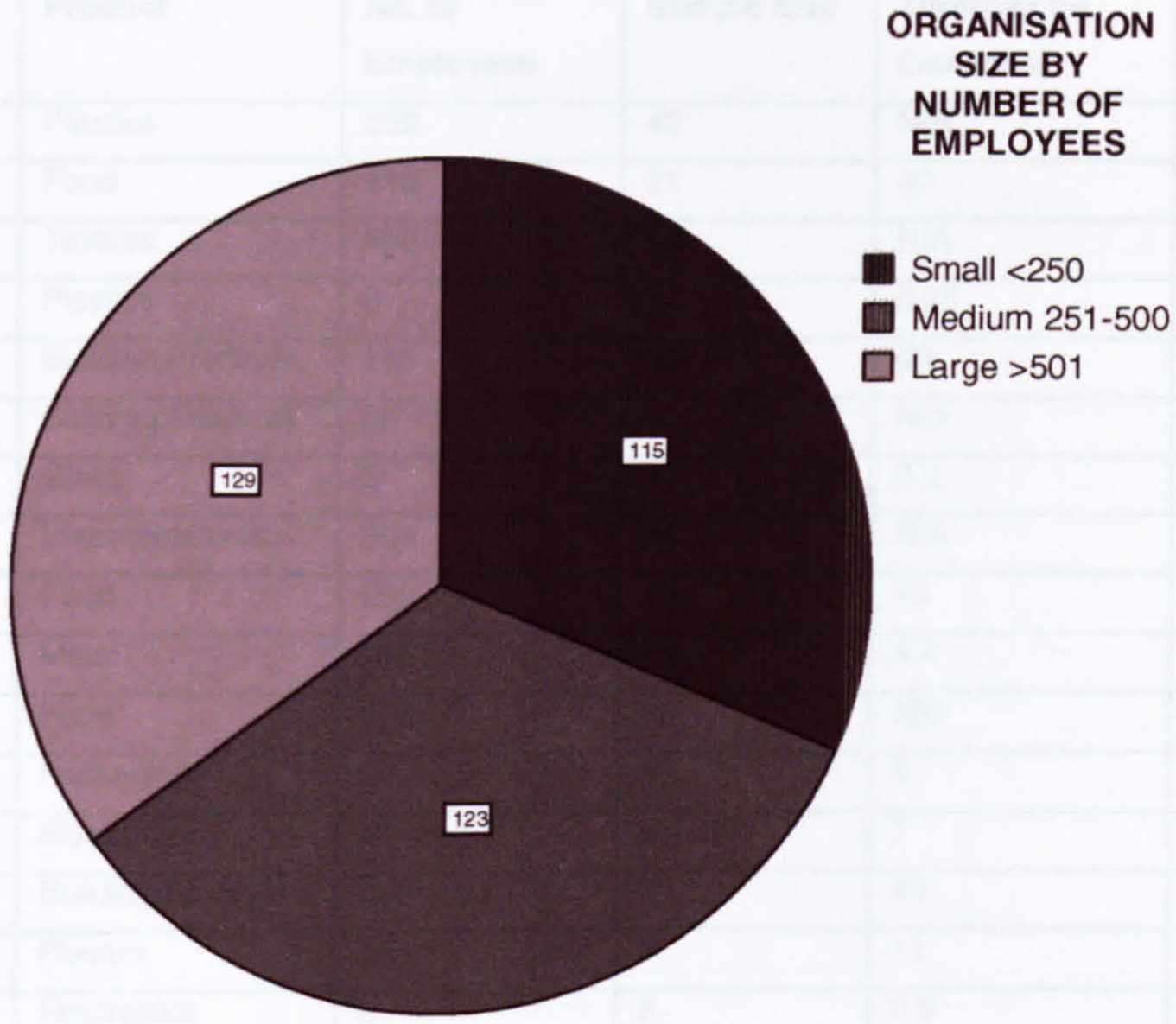


Figure 8.4: Organization Size by Turnover

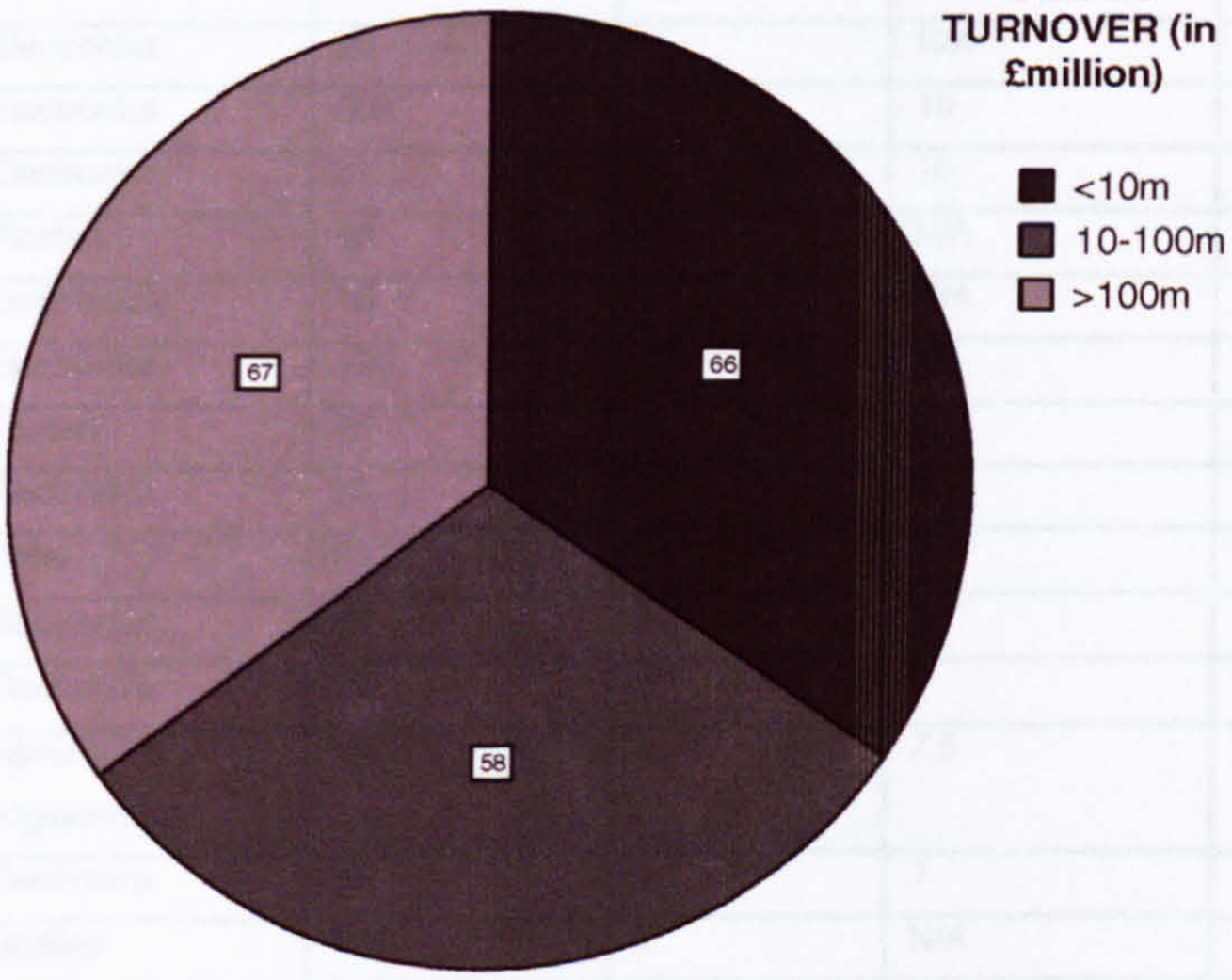


Table 8.1: Summary Information for Participating Organizations

Company	Product	No. of Employees	Sample Size	Turnover (in £millions)	Organization Span*
1	Plastics	350	42	N/A	Global
2	Food	113	21	40	Regional
3	Textiles	400	26	N/A	Global
4	Plastics	8	1	0.25	National
5	Building Products	165	13	60	National
6	Building Products	35	6	N/A	National
7	Glass	5	1	0.2	Global
8	Pharmaceuticals	364	34	N/A	Multinational
9	Food	500	12	45	Regional
10	Metal	110	7	4.4	National
11	Food	570	62	200	National
12	Packaging	60	18	6	Global
13	Electronics	45	6	7	Global
14	Building Products	320	7	40	Multinational
15	Plastics	180	1	11	National
16	Electronics	8	5	0.5	Multinational
17	Electronics	2800	62	N/A	Global
18	General Engineering	62	8	9	Multinational
19	General Engineering	3000	5	220	Global
20	Textiles	60	10	6	National
21	Electronics	17	2	N/A	Global
22	Electronics	20	1	N/A	Multinational
23	Electronics	300	1	10	National
24	Electronics	87	1	10	Multinational
25	Plastics	52	1	N/A	N/A
26	Electronics	18	1	N/A	Multinational
27	Electronics	350	1	30	National
28	Textiles	85	1	4	Multinational
29	Electronics	60	2	5	Multinational
30	Metal	20	1	1	Multinational
31	Electronics	47	1	3	Multinational
32	Electronics	90	1	7	National
33	General Engineering	88	1	7.5	National
34	Electronics	30	1	1	National
35	Textiles	190	1	N/A	Regional
36	Metal	86	1	7	Global
37	Building Products	116	1	26	Regional
38	Electronics	27	1	2	Regional

* Organization span was how the company representative viewed the organization. Perceptions may differ.

Table 8.2: Number of Companies, Number of Employees and Sample Size by Product Manufactured

Product	Number of Companies	Number of Employees	Sample Size
Plastics	4	590	45
Food	3	1183	95
Textiles	4	735	38
Building Products	4	636	27
Glass	1	5	1
Pharmaceuticals	1	364	34
Metal	3	216	9
Packaging	1	60	18
Electronics	14	3899	86
General Engineering	3	3150	14

360-degree ratings were gained for 176 managers (48%), 270-degree ratings (from three different sources) were gained for 127 managers (35%) and 180-degree ratings were gained for 64 managers (17%) (see Figure 8.5).

Of the 367 subjects unanimous opinions on hierarchical level were gained for 215 (58%). Of these:

- 30 were top-level managers
- 33 were director-level managers
- 54 were senior-level managers
- 43 were middle-level managers
- 55 were lower-level managers (see Figure 8.6)

Of the 367 subjects, ratings concerning time span were gained for 253 (69%). Of these:

- 56 reported a time span of up to and including three months
- 53 reported a time span of over three months and up to a year
- 79 reported a time span of one year and over and under two years
- 49 reported a time span of two years and over and under five years
- 12 reported a time span of five years and over and under ten years
- 4 reported a time span of ten years and over and under twenty years.

No data were received for a time span of over twenty years (Stratum VII) (see Figure 8.7).

Figure 8.5: Type of Feedback Provided (360-degree, 270-degree or 180-degree)

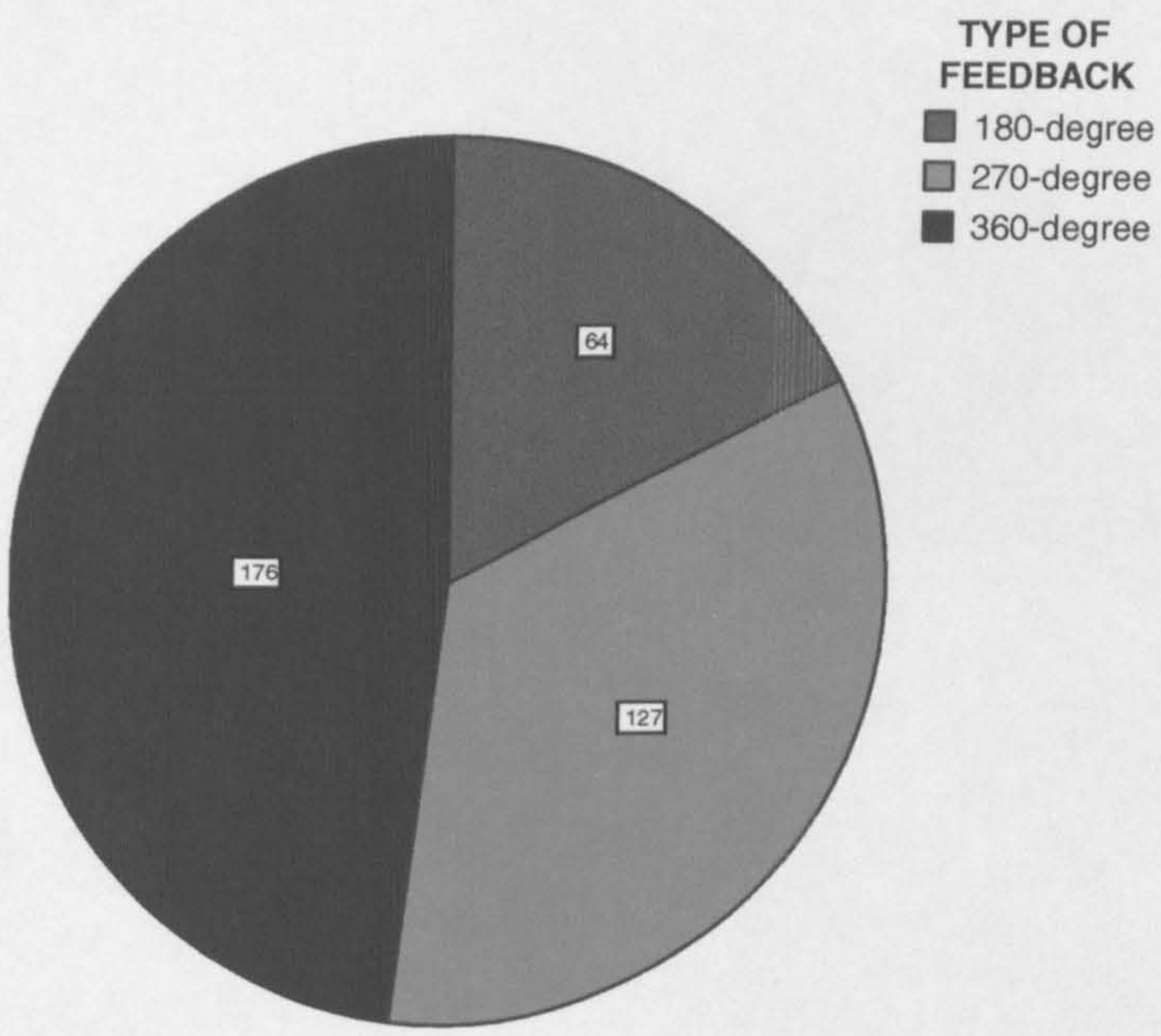


Figure 8.6: Distribution of Hierarchical Level in the Research

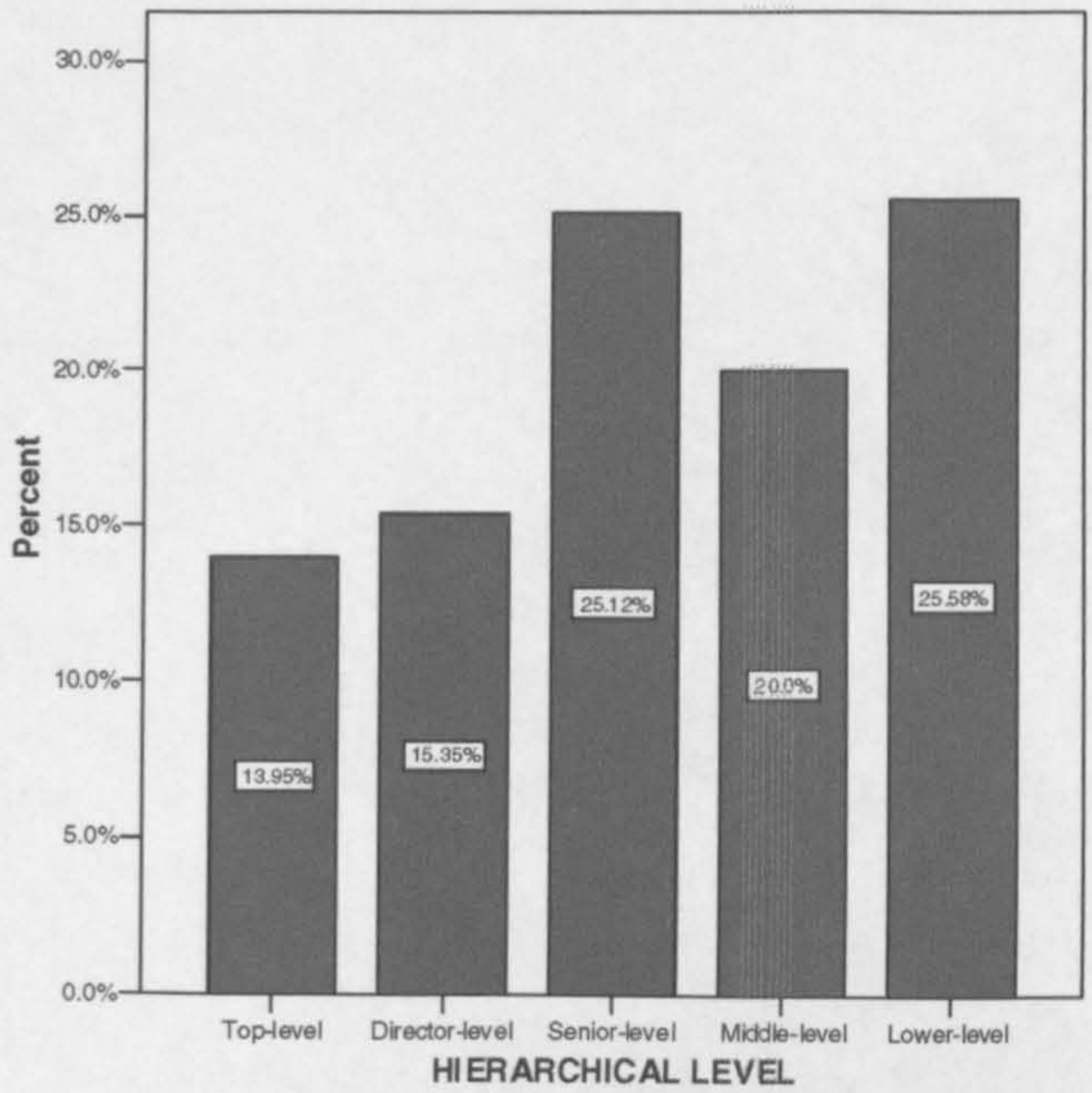
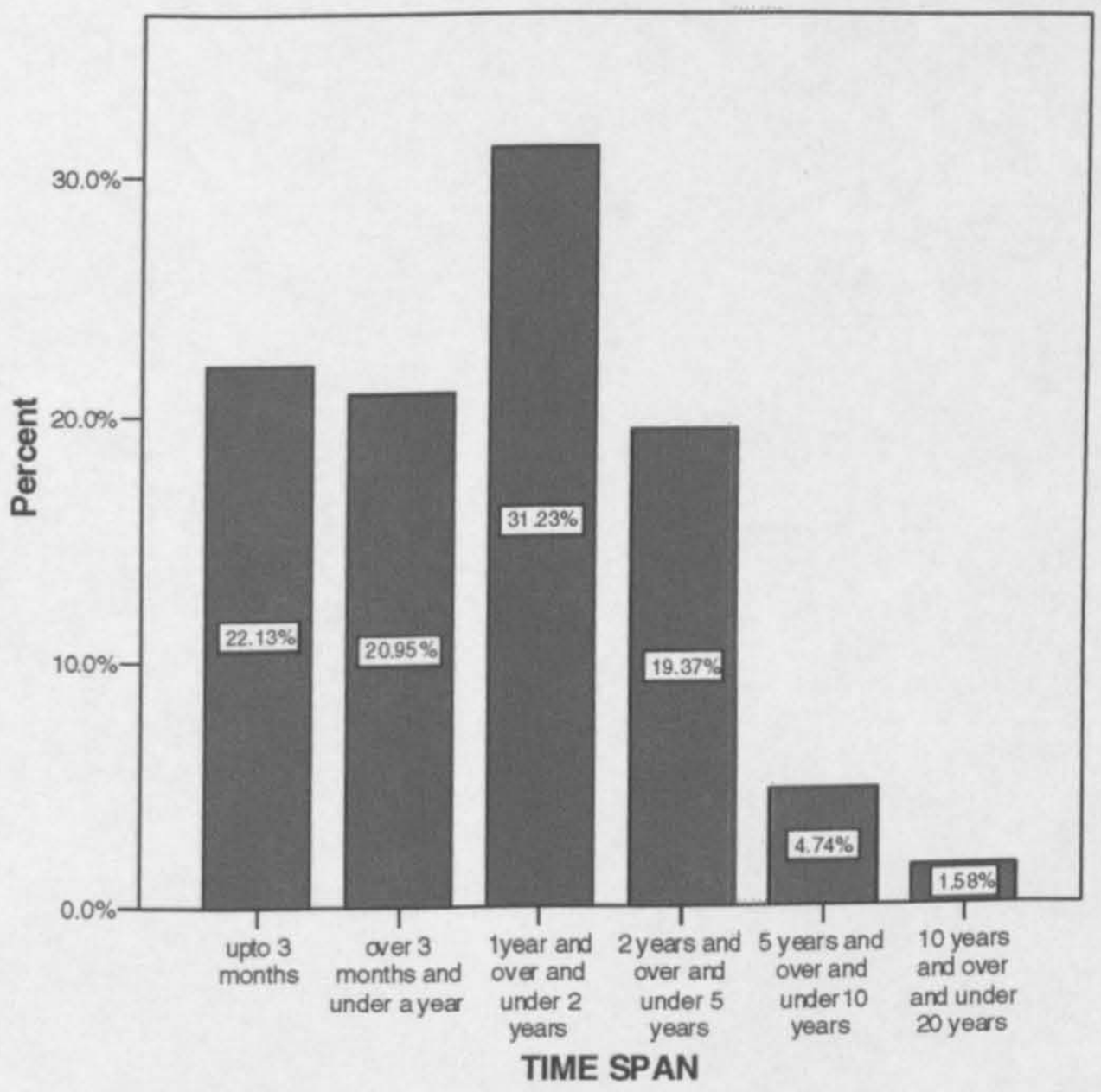


Figure 8.7: Distribution of Time Span in the Research



8.4 Research Instruments

The materials consisted of a 360-degree version (both self-rating and other–rating forms) of the MLQ, Form 5X-short (Bass & Avolio, 1997) and demographic sheets (both self and other-ratings) (see Appendices 1 and 2). A representative from each company also completed an organization information sheet (see Appendix 3).

8.5 Procedure

Organizations were approached via electronic mail to seek agreement for participation of managers within their organizations (see Appendices 4 and 5). The benefit to their organization (a comprehensive 360-degree appraisal of leadership in their organization) was explained. Agreement to take part in the research was obtained, and a company representative (to receive and distribute the questionnaires) was chosen by the contact person in the company.

Target managers were asked to volunteer to take part by the contact person in the company. These managers then selected one superior, one peer and one subordinate respondent. Although the target managers were encouraged to select respondents who would give honest and true responses, there was no way of ensuring this was the case. This may have led to target managers opting for respondents who would give favourable responses (France, 1997).

Furthermore, the data collection process involved only one superior, one peer and one subordinate response for each target manager. This may reduce the completeness of the picture gained for each manager's leadership behaviour. This is because some managers may have a number of peers and a number of subordinates and the research only gained one perception from each of these sources. Perception may vary between individuals in larger groups of team members. This may also encourage further favourable responses as the subordinate or peer has been singled out of a larger group (France, 1997).

The questionnaires were mailed in sealed envelopes to company representatives who then distributed the sealed envelopes to the participants in the study. The completed questionnaires were returned to the company representative in sealed envelopes and forwarded to the researcher in pre-paid envelopes. All envelopes were marked 'private and confidential'. The researcher calculated the ratings for each dimension of the 'Full Range Leadership' model (each independent and dependent variable). These ratings were then collated and analyzed using SPSS version 10.

8.6 Data Analysis

The study used mean values of the multiple ratings (ratings by self, peer, superior and subordinate) for analysis purposes. Previous research using multiple ratings also used the average ratings for all individuals who responded to the questionnaire as the measure for each scale (Atwater and Yammarino, 1992; Hegarty, 1974; Shipper and Davy, 2002). Such aggregation was deemed appropriate, especially when studying managers, because it reduces random error and perceptual differences (and other unwanted effects) among observations by others (Campion, 1988; Shipper and Davy, 2002).

However, there are concerns regarding using aggregated data. For example, using aggregated data may diminish the usefulness of the information gained from differing ratings. Differences in perception between rating sources may be lost in the analysis. As was highlighted in section 6.4, aspects of behaviour deemed to be important by one member of an organization may be different from those regarded as important by others (Alimo-Metcalfe, 1996; Borman, 1974; Bradley, 1978; Colvin, 2001; Ilgen and Feldman, 1983; Salam *et al.*, 1997). These important differences in perception will be lost in an aggregation process. At worst the aggregation process may provide data that is meaningless. For example, a superior may rate a questionnaire item as zero whereas a subordinate may rate the same questionnaire item as four. When these ratings are aggregated they produce a mean rating of two, which is meaningless in representing the constituent ratings. In response to these concerns the data were also analysed on a single-source basis as well as an aggregated basis to enable comparison between rating perceptions.

Owing to the concerns surrounding the conceptualisation of the 'Full Range Leadership' model highlighted previously in the thesis (see sections 4.4 and 6.5), an exploratory factor analysis was conducted to identify an appropriate set of factors for this research.

Chi-squared 'goodness of fit' and homogeneity of variance tests were carried out on all independent and dependent variables. This was to ascertain whether these variables met underlying assumptions for the use of parametric tests. These assumptions include the following:

- The level of measurement must be at least interval
- The sample data are drawn from a normally distributed population. Chi-squared 'goodness of fit' tests for the likelihood that the sample data came from a normal distribution. If chi-square is found to be significant then one can assume the sample data came from a normal distribution.
- The variances between samples are not significantly different. This is known as the principle of homogeneity of variance. If a homogeneity of variance test produces a non-significant result then one can assume the sample data are not significantly different (Coolican, 1994)

If these tests were failed, alternative non-parametric tests (Mann Whitney U-test or Spearman's ρ) were used for analysis purposes.

Analysis of variance with post-hoc multiple comparisons using the Tukey HSD (Honestly Significant Difference) test was performed to test for differences in the mean values for the independent variables. The Tukey HSD test is generally considered to be the safest post-hoc comparison method. The test, however, is conservative and may miss real differences between mean averages (Coolican, 1994).

R-to-z transformations and z-tests were performed to test for differences between the correlation coefficients (Pearson's r for independent variable ratings and dependent variable ratings) for each category variable level. The results of this analysis are described in the next chapter. Multiple comparisons and z-tests,

however, were not conducted for time span categories 'ten years and under twenty years' and 'five years and under ten years' owing to low sample sizes. Only descriptive statistics are reported in the next chapter for these two time span categories.

Multiple regression analysis was also performed for both category variables (hierarchical level and time span) to investigate dependent variables (extra effort, effectiveness and satisfaction) for each grouping of each category variable. This enabled comparison with Densten's (2003) findings regarding transformational, transactional and *laissez-faire* leadership across time span strata in the Australian police force.

Lastly, hierarchical regression analyses were also conducted to assess the relative potential moderating effect of the two category variables (hierarchical level and time span) in relation to each other and to rating source. Another variable understood to have a potential moderating effect in the analysis was organizational size (number of employees). The wide range of organizations involved in the research (see table 8.1) justified including a measure of organization size in the hierarchical regression analyses.

The results of the data analysis are reported in the next section of the thesis. The full analysis output is not presented in this thesis but is available for examination.

Chapter 9

Results

9.1 Outline of the Chapter

This chapter reports the results of the research. Firstly, the chapter reports the findings of an exploratory factor analysis to address issues surrounding the representation of the 'Full Range Leadership' model discussed in sections 4.4 and 6.5 of this thesis. Secondly, the results of analyses that check for potential bias from single ratings are reported. Thirdly, the chapter reports the results, using the original representation of the Full Range Leadership model (Avolio, 1999; Avolio and Bass, 1993, 2002) and alternative representations highlighted in the exploratory factor analysis, for each independent and dependent variable classified by the two category variables – hierarchical level and time span. These analyses were conducted using an aggregated data set. Fourthly, the results of analyses that check for potential bias from self-ratings are reported.

Owing to the unique results of this analysis for self-ratings that emerged, alternative results are reported for a data set that omits self-ratings, together with a re-analysis of the data for each individual rating (self, peer, superior and subordinate). In addition, the results of a hierarchical multiple regression analysis are reported. Four category variables were included, hierarchical level by unanimous opinion, time span of the manager's role, rating (self, peer, superior, subordinate) and organization size (number of employees). Finally, the chapter provides a summary of the results for discussion alongside a summary comparison of the results for the two category variables. Table 9.1 shows the key for the labels that represent all independent and dependent variables in all the tables shown in this chapter.

Table 9.1: Key for Labels used for Independent and Dependent Variables

Abbreviation	Dimension
AC	Attributed charisma
II	Idealised influence
IM	Inspirational motivation
IS	Intellectual stimulation
IC	Individualised consideration
TFL	Transformational leadership (overall)
CR	Contingent reward
MBEA	Management-by-exception (active)
MBEP	Management-by-exception (passive)
TAL	Transactional leadership (overall)
LF	Laissez-faire
EE	Extra effort
EFF	Leadership Effectiveness
SAT	Follower Satisfaction

9.2 Exploratory Factor Analysis

Owing to the concerns surrounding the conceptualisation of the 'Full Range Leadership' model highlighted previously in the thesis (see sections 4.4 and 6.5), an exploratory factor analysis was conducted to identify an appropriate set of factors for this research. Unfortunately the method of entering the data into the database made it impossible to analyse lower-order factor structures. Only higher-order factor structures were therefore investigated.

As can be seen from table 9.2, all assumptions in factor analysis are met. Firstly, there is a substantial number of correlations above .30, and the measure of sampling adequacy (.89) is meritorious (Hair *et al.*, 1998).

Table 9.2: Factor Analysis: Correlations and Measures of Sampling Adequacy

Variable	M	SD	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9
X_1 AC	2.63	.80	1.00								
X_2 II	2.55	.83	.67***	1.00							
X_3 IM	2.68	.84	.68***	.73***	1.00						
X_4 IS	2.60	.76	.62***	.58***	.61***	1.00					
X_5 IC	2.71	.83	.62***	.55***	.56***	.65***	1.00				
X_6 CR	2.67	.80	.64***	.65***	.66***	.60***	.63***	1.00			
X_7 MBEA	2.31	.87	.23***	.26***	.18***	.19***	.13***	.29***	1.00		
X_8 MBEP	1.25	.79	-.37***	-.25***	-.32***	-.33***	-.32***	-.30***	-.05*	1.00	
X_9 LF	.81	.75	-.46***	-.35***	-.41***	-.38***	-.39***	-.40***	-.08**	.64***	1.00

N.B. * = P<0.05, ** = P<0.01, *** = P<0.001,

Overall Measure of Sampling Adequacy: .890

Bartlett Test of Sphericity: 5523.72 Significance: P<0.001

The nine leadership behaviours were therefore subjected to an exploratory factor analysis employing the principal components method with a Varimax rotation. The factor structure that emerged is shown in table 9.3. Examination of the structures that emerged with alternative rotations (Oblimin, Quartimax and Equamax) produced almost identical solutions.

Table 9.3: Rotated Component Matrix for the Factor Analysis of Leadership Behaviours

Component	1	2	3	
AC	**0.795**	-0.281	0.116	
II	**0.826**	-0.101	0.176	
IM	**0.830**	-0.188	0.069	
IS	**0.790**	-0.199	0.031	
IC	**0.787**	-0.201	-0.051	
CR	**0.796**	-0.179	0.213	
MBEA	0.149	-0.017	**0.979**	
MBEP	-0.172	**0.900**	-0.008	
LF	-0.297	**0.845**	-0.031	
% Variance	**52.61**	**13.36**	**9.99**	**Total: 75.96**

Extraction Method: Principal Components Analysis
Rotation Method: Varimax with Kaiser Normalization
Rotation converged in five iterations

Three factors emerged. Labels for the first and third factors were identified from alternative models discussed in section 4.4 of this thesis based on their constituent dimensions. The label for the second factor was self-evident. The factors were:

Factor 1: Active constructive leadership:

- Attributed charisma
- Idealised influence

- Inspirational motivation
- Intellectual stimulation
- Individualised consideration
- Contingent reward

Factor 2: Management-by-exception (active)

Factor 3: Passive-avoidant leadership:

- Management-by-exception (passive)
- *Laissez-faire*

Two additional factors were therefore included in the analysis: 'active constructive leadership', abbreviated to 'ACLEAD' and 'passive-avoidant leadership' abbreviated to 'PALEAD'. Factor two is already represented in the data set by management-by-exception (active).

9.3 Single-rating Bias

The research used aggregated multiple ratings (self, peer, superior and subordinate) (all ratings across all sources) for analysis purposes. As was highlighted previously in the thesis, it has been suggested by some scholars (Campion, 1988; Shipper and Davy, 2002) that such aggregation is appropriate when studying managers because it reduces random error and perceptual differences among observations by others. Furthermore, the inclusion of single ratings in the data has the potential to bias the data. To justify the omission of single ratings, therefore, differences between the ratings (single ratings versus double ratings [180-degree], triple ratings [270-degree] and quadruple ratings [360-degree]) gained for each of the 432 original respondents (65 single ratings, 64 double ratings, 127 triple ratings and 176 quadruple ratings) were tested. Single ratings are not the same as self-ratings. Single ratings can be from any rating source (self, superior, peer or subordinate). The descriptive statistics for different numbers of ratings are provided in Table 9.4.

*Table 9.4: Means and Standard Deviations of Independent and Dependent Variables by Number of Ratings**

Independent/ Dependent Variable	Single-ratings (*n* = 65)	Double-ratings (*n* = 64)	Triple-ratings (*n* = 127)	Quadruple-ratings (*n* = 176)
AC	2.83 (.74)	2.66 (.68)	2.61 (.53)	2.63 (.47)
II	2.70 (.75)	2.55 (.71)	2.55 (.58)	2.55 (.52)
IM	3.01 (.72)	2.68 (.67)	2.67 (.58)	2.69 (.53)
IS	2.96 (.70)	2.62 (.63)	2.60 (.49)	2.58 (.45)
IC	2.89 (.80)	2.69 (.57)	2.71 (.53)	2.71 (.48)
TFL	2.88 (.61)	2.64 (.58)	2.63 (.47)	2.63 (.41)
CR	2.96 (.64)	2.63 (.66)	2.71 (.47)	2.66 (.49)
MBEA	2.23 (.87)	2.26 (.66)	2.24 (.55)	2.36 (.51)
MBEP	1.24 (.62)	1.23 (.51)	1.25 (.53)	1.26 (.46)
TAL	2.14 (.49)	2.04 (.36)	2.07 (.25)	2.09 (.25)
LF	.75 (.76)	.71 (.53)	.83 (.54)	.81 (.43)
ACLEAD	2.89 (.60)	2.64 (.58)	2.64 (.45)	2.64 (.41)
PALEAD	.99 (.60)	.97 (.46)	1.04 (.49)	1.03 (.40)
EE	2.74 (.87)	2.39 (.65)	2.36 (.64)	2.41 (.57)
EFF	3.05 (.73)	2.84 (.58)	2.93 (.51)	2.93 (.45)
SAT	3.13 (.62)	2.84 (.64)	2.96 (.61)	2.96 (.52)

* Standard deviations in parenthesis

Chi-square 'goodness of fit' and homogeneity of variance tests (see section 8.6) were carried out on all independent and dependent variables for this data set. If these tests were failed, an alternative non-parametric test was used for analysis purposes. All independent and dependent variables passed a 'goodness of fit' test for this data set except the independent variable 'active constructive leadership' (see Table 9.5). This variable failed the 'goodness of fit' test and therefore cannot be assumed to come from a normally distributed population (an assumption needed to use parametric tests). The results of a non-parametric test alternative (Mann-Whitney U test) are therefore reported for this variable.

Table 9.5: Chi-square 'Goodness of Fit' Test for Independent and Dependent Variables by Number of Ratings

Independent/ Dependent Variable	d.f.	Chi-square
AC	101	828.83***
II	100	807.59***
IM	87	599.15***
IS	95	730.67***
IC	91	702.67***
TFL	266	329.44**
CR	109	905.82***
MBEA	100	612.13***
MBEP	76	694.48***
TAL	180	625.51***
LF	65	547.92***
ACLEAD	298	243.52
PALEAD	135	596.18***
EE	121	607.00***
EFF	102	884.55***
SAT	33	534.65***

N.B. * = P<0.05, ** = P<0.01, *** = P<0.001,

The results of tests of homogeneity of variances for each independent and dependent variable are presented in Table 9.6.

Table 9.6: Results of Homogeneity of Variance Tests for Independent and Dependent Variables by Number of Ratings

Independent/ Dependent Variable	d.f. 1	d.f.2	Levene Statistic
AC	3	428	7.66***
II	3	428	3.73*
IM	3	428	2.64*
IS	3	428	7.41***
IC	3	428	8.42***
TFL	3	428	3.83*
CR	3	428	3.48*
MBEA	3	428	9.57***
MBEP	3	428	3.47*
TAL	3	428	18.72***
LF	3	428	9.28***
ACLEAD	3	428	3.16*
PALEAD	3	428	6.57***
EE	3	428	2.60
EFF	3	428	5.36**
SAT	3	428	.67

N.B. * = P<0.05, ** = P<0.01, *** = P<0.001,

All independent and dependent variables, except 'extra effort' and 'satisfaction', failed the homogeneity of variance test (see table 9.6). Similar variances for these variables therefore could not be assumed. Parametric tests could not be used for analysis purposes as the variables did not meet this parametric assumption. Non-parametric tests were therefore conducted for these variables. The results of analysis of variance for the two variables ('extra effort' and 'satisfaction') that did pass parametric assumption tests are shown in Table 9.7 and summaries of the results for each independent and dependent variable are then listed. Where analysis of variance tests have been used the results of multiple comparisons (using the Tukey Honestly Significant Difference [HSD] test) are reported. If variables failed homogeneity of variance tests, the results of an alternative non-parametric test are reported.

Table 9.7: ANOVA Table for the Dependent Variables Extra Effort and Satisfaction by Number of Ratings

Independent/ Dependent Variable	d.f. (between groups)	d.f. (within groups)	d.f. (total)	F-value
EE	3	423	426	5.22**
SAT	3	426	429	2.61

N.B. * = P<0.05, ** = P<0.01, *** = P<0.001,

Attributed charisma – This variable failed homogeneity of variance tests. The results of the Mann Whitney U-test show that single ratings rated significantly higher than both triple ratings (U=3268.00, p<0.05) and quadruple ratings (U=4581.00, p<0.05).

Idealised influence - This variable failed homogeneity of variance tests. The results of the Mann Whitney U-test show no significant differences.

Inspirational motivation - This variable failed homogeneity of variance tests. The results of the Mann Whitney U-test show that single ratings rated significantly higher than double ratings (U=1460.50, p<0.01), triple ratings (U=2729.00, p<0.001) and quadruple ratings (U=3665.00, p<0.001).

Intellectual stimulation - This variable failed homogeneity of variance tests. The results of the Mann Whitney U-test show that single ratings rated significantly higher than double ratings (U=1476.00, p<0.01), triple ratings (U=2694.50, p<0.001) and quadruple ratings (U=3546.00, p<0.001).

Individualised consideration - This variable failed homogeneity of variance tests. The results of the Mann Whitney U-test show that single ratings rated significantly higher than double ratings (U=1597.00, p<0.05), triple ratings (U=3186.00, p<0.05) and quadruple ratings (U=4377.00, p<0.01).

Transformational leadership (overall) - This variable failed homogeneity of variance tests. The results of the Mann Whitney U-test show that single ratings rated significantly higher than double ratings ($U=1577.50$, $p<0.05$), triple ratings ($U=2872.50$, $p<0.01$) and quadruple ratings ($U=3934.00$, $p<0.001$).

Contingent reward - This variable failed homogeneity of variance tests. The results of the Mann Whitney U-test show that single ratings rated significantly higher than double ratings ($U=1553.00$, $p<0.05$), triple ratings ($U=3058.50$, $p<0.01$) and quadruple ratings ($U=3938.00$, $p<0.001$).

Management-by-exception (active) - This variable failed homogeneity of variance tests. The results of the Mann Whitney U-test show no significant differences.

Management-by-exception (passive) - This variable failed homogeneity of variance tests. The results of the Mann Whitney U-test show no significant differences.

Transactional leadership (overall) - This variable failed homogeneity of variance tests. The results of the Mann Whitney U-test show that single ratings rated significantly higher than triple ratings ($U=3362.00$, $p<0.05$).

Laissez-faire leadership - This variable failed homogeneity of variance tests. The results of the Mann Whitney U-test show quadruple ratings rated significantly higher than single ratings ($U=4679.50$, $p<0.05$).

Active constructive leadership - This variable failed homogeneity of variance tests. The results of the Mann Whitney U-test show that single ratings rated significantly higher than double ratings ($U=1562.00$, $p<0.05$), triple ratings ($U=2850.00$, $p<0.001$) and quadruple ratings ($U=3831.50$, $p<0.001$).

Passive-avoidant leadership - This variable failed homogeneity of variance tests. The results of the Mann Whitney U-test show no significant differences.

Extra effort – The results of an analysis of variance test ($F=5.22$) show single ratings rated significantly higher than double ratings ($p<0.05$), triple ratings ($p<0.01$) and quadruple ratings ($p<0.01$).

Leadership effectiveness - This variable failed homogeneity of variance tests. The results of the Mann Whitney U-test show no significant differences.

Follower satisfaction - The results of an analysis of variance test (F=2.61) show single-ratings rated significantly higher than double-ratings ($p<0.05$).

These results showed that single ratings were significantly higher for eleven of the seventeen independent and dependent variables measured and significantly lower for the independent variable *laissez-faire* leadership. No significant differences between multiple (double, triple and quadruple) ratings were found. The use of only multiple ratings was therefore justified, and the 65 single ratings were omitted from further analysis. This left 64 double ratings (180-degree), 127 triple ratings (270-degree) and 176 quadruple ratings (360-degree), making a total of 367 multiple ratings for further analysis. These results also provide support for the suggestion that aggregation is appropriate when studying managers because it reduces random error and perceptual differences among observations by others (Campion, 1988; Shipper and Davy, 2002).

However, as was discussed previously, aggregation may discount important findings regarding differences in perceptions of leadership and leadership effectiveness (Alimo-Metcalfe, 1996; Borman, 1974; Bradley, 1978; Colvin, 2001; Ilgen and Feldman, 1983; Salam *et al.*, 1997). This chapter addresses this issue later. Firstly, however, the results for the aggregated data set are reported.

9.4 Results for the Category variable Hierarchical Level by Unanimous Opinion

Descriptive statistics showing means, standard deviations and sample sizes for each independent and dependent variable by hierarchical level (unanimous opinion) are provided in Table 9.8.

*Table 9.8: Means and Standard Deviations of Independent and Dependent Variables by Hierarchical Level (Unanimous Opinion)**

Independent/ Dependent Variable	Top-level (n = 30)	Director-level (n = 33)	Senior-level (n = 54)	Middle-level (n = 43)	Lower-level (n = 55)
AC	2.86 (.41)	2.89 (.43)	2.72 (.50)	2.59 (.49)	2.42 (.56)
II	2.95 (.36)	2.65 (.59)	2.70 (.50)	2.52 (.58)	2.20 (.53)
IM	3.12 (.44)	2.86 (.52)	2.84 (.50)	2.66 (.56)	2.29 (.53)
IS	2.93 (.34)	2.78 (.51)	2.68 (.46)	2.56 (.50)	2.30 (.50)
IC	2.74 (.44)	2.86 (.47)	2.75 (.50)	2.75 (.49)	2.54 (.58)
TFL	2.92 (.30)	2.81 (.43)	2.74 (.41)	2.62 (.44)	2.35 (.47)
CR	2.78 (.48)	2.78 (.43)	2.88 (.44)	2.71 (.57)	2.43 (.48)
MBEA	2.02 (.55)	2.12 (.54)	2.26 (.52)	2.34 (.60)	2.40 (.49)
MBEP	1.42 (.48)	1.38 (.61)	1.19 (.42)	1.28 (.56)	1.24 (.50)
TAL	2.07 (.26)	2.09 (.30)	2.11 (.25)	2.11 (.32)	2.02 (.24)
LF	.68 (.43)	.75 (.48)	.75 (.43)	.87 (.51)	.90 (.53)
ACLEAD	2.90 (.31)	2.80 (.40)	2.76 (.41)	2.63 (.44)	2.36 (.45)
PALEAD	1.05 (.42)	1.06 (.51)	.97 (.37)	1.08 (.50)	1.07 (.46)
EE	2.87 (.43)	2.61 (.53)	2.50 (.58)	2.34 (.62)	2.10 (.53)
EFF	2.94 (.46)	3.07 (.36)	2.98 (.41)	2.88 (.51)	2.88 (.53)
SAT	2.93 (.47)	3.11 (.55)	2.95 (.53)	2.98 (.50)	2.86 (.66)

* Standard deviations in parenthesis

Chi-square 'goodness of fit' and homogeneity of variance tests were carried out on all independent and dependent variables for this data set. This was to ascertain whether parametric tests could be used for the analysis. If variables failed these tests, an alternative non-parametric test was used for the analysis. The independent variables 'transformational leadership (overall)' and 'active constructive leadership' failed the 'goodness of fit' test (see Table 9.9) and their data therefore cannot be assumed to come from a normally distributed population (an assumption needed to use parametric tests). The results of non-parametric test alternatives (Mann-Whitney U test and Spearman's ρ) are therefore reported for these variables. Furthermore, z-tests were not performed for these variables.

Table 9.9: Chi-square 'Goodness of Fit' Test for Independent and Dependent Variables by Hierarchical Level

Independent/ Dependent Variable	d.f.	Chi-square
AC	97	553.99***
II	97	492.04***
IM	83	339.10***
IS	91	484.06***
IC	87	459.05***
TFL	253	185.99
CR	106	522.53***
MBEA	97	395.37***
MBEP	73	424.42***
TAL	170	355.67***
LF	62	315.01***
ACLEAD	281	122.47
PALEAD	130	401.51***
EE	118	397.08***
EFF	98	575.85***
SAT	33	353.67***

N.B. * = P<0.05, ** = P<0.01, *** = P<0.001,

A 'homogeneity of variance' test was also performed for each independent variable to ensure that variances were not significantly dissimilar. Where independent variables failed this test the results of alternative non-parametric tests are reported. The results of tests of homogeneity of variances for each independent and dependent variable are presented in Table 9.10. All independent and dependent variables passed the homogeneity of variance test. Similar variances were assumed and parametric tests used for analysis purposes for all independent and dependent variables with the exception of 'transformational leadership (overall)' and 'active constructive leadership', which failed the 'goodness of fit' test (see above Table 9.9).

Table 9.10: Homogeneity of Variance Tests for Independent and Dependent Variables by Hierarchical Level

Independent/ Dependent Variable	d.f. 1	d.f.2	Levene Statistic
AC	4	210	1.11
II	4	210	1.62
IM	4	210	.52
IS	4	210	1.61
IC	4	210	1.27
TFL	4	210	1.15
CR	4	210	1.84
MBEA	4	210	.48
MBEP	4	210	1.87
TAL	4	210	2.36
LF	4	210	1.39
ACLEAD	4	210	1.07
PALEAD	4	210	1.80
EE	4	208	1.67
EFF	4	209	2.26
SAT	4	210	1.26

N.B. * = P<0.05, ** = P<0.01, *** = P<0.001,

The results of analysis of variance for each independent variable are shown in Table 9.11. A Mann Whitney U-test was conducted for 'transformational leadership (overall)' and 'active constructive leadership' as the data from these variables can not be assumed to come from a normally distributed population.

Table 9.11: ANOVA Table for Independent and Dependent Variables by Hierarchical Level

Independent/ Dependent Variable	d.f. (between groups)	d.f. (within groups)	d.f. (total)	F-value
AC	4	210	214	6.86***
II	4	210	214	11.70***
IM	4	210	214	15.72***
IS	4	210	214	10.84***
IC	4	210	214	2.38
TFL	4	210	214	11.88***
CR	4	210	214	6.57***
MBEA	4	210	214	3.24*
MBEP	4	210	214	1.29
TAL	4	210	214	.88
LF	4	210	214	1.51
ACLEAD	4	210	214	11.45***
PALEAD	4	210	214	.46
EE	4	208	212	11.04***
EFF	4	209	213	1.19
SAT	4	210	214	1.09

N.B. * = P<0.05, ** = P<0.01, *** = P<0.001,

The correlation coefficients between independent variables and the dependent variables - 'extra effort', 'leadership effectiveness' and 'follower satisfaction' - were also tabulated (see Tables 9.12, 9.13, and 9.14 respectively).

Following these tables is a summary of the results for each independent variable. Where analysis of variance has been used, the results of multiple comparisons (using the Tukey HSD test) are reported. If variables failed homogeneity of variance tests, the results of an alternative non-parametric test are reported (Mann Whitney U-test). The results of z-tests are also reported for each independent variable.

Table 9.12: Correlation Coefficients for Independent Variables and Extra Effort (Hierarchical Level)

Independent Variable	Top-level (n = 30)	Director-level (n = 33)	Senior-level (n = 54)	Middle-level (n = 43)	Lower-level (n = 55)
AC	.45*	.67***	.62***	.68***	.61***
II	.14	.55**	.60***	.63***	.59***
IM	.36	.59***	.75***	.47**	.57***
IS	.42*	.72***	.52***	.68***	.44**
IC	.62***	.62***	.60***	.60***	.47***
TFL	.48**†	.77***†	.70***†	.69***†	.63***†
CR	.37*	.39*	.68***	.52***	.50***
MBEA	-.17	-.12	-.06	.33*	.21
MBEP	-.60***	-.23	-.09	-.34*	-.42**
TAL	-.27	-.04	.30*	.32*	.19
LF	-.56**	-.52**	-.31*	-.35*	-.26
ACLEAD	.43**†	.74***†	.72***†	.67***†	.63***†
PALEAD	-.64***	-.39*	-.23	-.37*	-.38**

N.B. * = P<0.05, ** = P<0.01, *** = P<0.001, † = Spearman's ρ value (all other values are Pearson's r).

Table 9.13: Correlation Coefficients for Independent Variables and Leadership Effectiveness (Hierarchical Level)

Independent Variable	Top-level (*n* = 30)	Director-level (*n* = 33)	Senior-level (*n* = 54)	Middle-level (*n* = 43)	Lower-level (*n* = 55)
AC	.63***	.72***	.68***	.76***	.55***
II	.41*	.70***	.65***	.64***	.35*
IM	.24	.74***	.67***	.59***	.35*
IS	.36	.61***	.55***	.59***	.48***
IC	.63***	.72***	.53***	.71***	.59***
TFL	.57**†	.75***†	.73***†	.75***†	.56***†
CR	.74***	.58***	.57***	.72***	.59***
MBEA	-.09	.17	-.07	.48**	.38**
MBEP	-.38*	-.46**	-.30*	-.46**	-.49***
TAL	.15	.07	.12	.45**	.31*
LF	-.60***	-.64***	-.52***	-.55***	-.65***
ACLEAD	.64***†	.78***†	.72***†	.77***†	.62***†
PALEAD	-.53**	-.58***	-.47***	-.54***	-.64***

N.B. * = P<0.05, ** = P<0.01, *** = P<0.001, † = Spearman's ρ value (all other values are Pearson's r).

Table 9.14: Correlation Coefficients for Independent Variables and Follower Satisfaction (Hierarchical Level)

Independent Variable	Top-level (*n* = 30)	Director-level (*n* = 33)	Senior-level (*n* = 54)	Middle-level (*n* = 43)	Lower-level (*n* = 55)
AC	.66***	.84***	.78***	.76***	.69***
II	.47**	.67***	.57***	.58***	.56***
IM	.37*	.60***	.64***	.57***	.52***
IS	.57**	.60***	.56***	.62***	.52***
IC	.66***	.78***	.66***	.72***	.71***
TFL	.69***†	.74***†	.76***†	.70***†	.65***†
CR	.74***	.59***	.66***	.67***	.56***
MBEA	.01	-.07	.04	.46**	.27*
MBEP	-.42*	-.36*	-.29*	-.59***	-.39**
TAL	.19	-.00	.26	.33*	.29*
LF	-.65***	-.56**	-.47***	-.66***	-.49***
ACLEAD	.75***†	.77***†	.76***†	.66***†	.70***†
PALEAD	-.58**	-.48**	-.43**	-.67***	-.50***

N.B. * = P<0.05, ** = P<0.01, *** = P<0.001, † = Spearman's ρ value (all other values are Pearson's r).

Attributed charisma - The results of analysis of variance (F=6.86) show top-level (p<0.01), director-level (p<0.001) and senior-level (p<0.05) managers were attributed with significantly more charisma than lower-level managers. The results of z-tests show no significant differences in the three dependent variables between hierarchical levels.

Idealised influence - The results of analysis of variance (F=11.70) show top-level (p<0.001), director-level (p<0.01), senior-level (p<0.001) and middle-level (p<0.05) managers exhibited significantly more idealised influence than lower-level managers. In addition, top-level managers exhibited significantly more idealised influence than middle-level managers (p<0.01). The results of z-tests show followers exerted significantly more extra effort when senior-level (z=2.31, p<0.05), middle-level (z=2.41, p<0.05) and lower-level (z=2.26, p<0.05) managers were exhibiting idealised influence than when top-level managers were exhibiting idealised influence. The results of z-tests also show director-level (z=2.18, p<0.05) and

senior-level ($z=2.07$, $p<0.05$) managers were significantly more effective than lower-level managers when exhibiting idealised influence. There were no significant differences between correlation coefficients for the dependent variable 'satisfaction'.

Inspirational motivation - The results of analysis of variance ($F=15.72$) show top-level ($p<0.001$), director-level ($p<0.001$), senior-level ($p<0.001$) and middle-level ($p<0.01$) managers exhibited significantly more inspirational motivation than lower-level managers. In addition, top-level managers exhibited significantly more inspirational motivation than middle-level managers ($p<0.01$). The results of z-tests show followers exerted significantly more extra effort when senior-level managers were exhibiting inspirational motivation than when top-level ($z=2.50$, $p<0.05$) and middle-level ($z=2.18$, $p<0.05$) managers were exhibiting inspirational motivation. Director-level managers were significantly more effective when exhibiting inspiration motivation than top-level ($z=2.66$, $p<0.05$) and lower-level managers ($z=2.54$, $p<.0.05$). Senior-level managers were significantly more effective than top-level ($z=2.38$, $p<0.05$) and lower-level ($z=2.25$, $p<0.05$) managers when exhibiting inspirational motivation. There were no significant differences between correlation coefficients for the dependent variable 'satisfaction'.

Intellectual stimulation - The results of analysis of variance ($F=10.84$) show top-level ($p<0.001$), director-level ($p<0.001$) and senior-level ($p<0.001$) managers exhibited significantly more intellectual stimulation than lower-level managers. In addition, top-level managers exhibited significantly more intellectual stimulation than middle-level managers ($p<0.01$). The results of z-tests show no significant difference in correlation coefficients for the three dependent variables between hierarchical levels.

Individualised consideration - The results of analysis of variance ($F=2.38$) show director-level managers exhibited significantly more individualised consideration than lower-level managers ($p<0.05$). The results of z-tests show no significant difference in correlation coefficients for the three dependent variables between hierarchical levels.

Transformational leadership (overall) - The results of a Mann-Whitney U test show top-level ($U=240.50$, $p<0.001$), director-level ($U=431.00$, $p<0.001$), senior-level

(U=791.50, p<0.001) and middle-level (U=806.00, p<0.01) managers exhibited significantly more transformational leadership (overall) than lower-level managers. In addition, top-level managers exhibited significantly more transformational leadership (overall) than senior-level (U=591.00, p<0.05) and middle-level (U=387.00, p<0.01) managers. Director-level managers also exhibited significantly more transformational leadership (overall) than middle-level (U=513.00, p<0.05) managers. Z-tests were not performed for transformational leadership (overall) as it did not meet parametric assumptions.

Contingent reward - The results of analysis of variance (F=6.57) show top-level (p<0.05), director-level (p<0.01), senior-level (p<0.001) and middle-level (p<0.05) managers exhibited significantly more contingent reward than lower-level managers. The results of z-tests show no significant difference in correlation coefficients for the three dependent variables between hierarchical levels.

Management-by-exception (active) - The results of analysis of variance (F=3.24) show lower-level managers exhibited significantly more management-by-exception (active) than top-level managers (p<0.05). The results of z-tests show middle-level managers were afforded significantly more extra effort by followers when exhibiting management-by-exception (active) than top-level managers (z=2.11, p<0.05). The results of z-tests also show middle-level managers were significantly more effective than top-level (z=2.46, p<0.05) and senior-level managers (z=2.81, p<0.01) when exhibiting management-by-exception (active). Lower-level managers were significantly more effective than top-level (z=2.06, p<0.05) and senior-level (z=2.37, p<0.05) managers when exhibiting management-by-exception (active) (z=1.95, p<0.05). Middle-level managers were significantly more satisfying when exhibiting management-by-exception (active) than director-level (z=2.35, p<0.05) and senior-level (z=2.17, p<0.05) managers.

Management-by-exception (passive) - The results of analysis of variance (F=1.29) show no significant difference in the use of management-by-exception (passive) across hierarchical levels. The results of z-tests show top-level managers inhibited extra effort from followers significantly more than senior-level managers when exhibiting management-by-exception (passive) (z=2.52, p<0.05). There were no

significant differences between correlation coefficients for the dependent variables 'effectiveness' and 'satisfaction'.

Transactional leadership (overall) – The results of analysis of variance (F=0.88) show no significant difference in the use of transactional leadership (overall) across hierarchical levels. The results of z-tests show middle-level ($z=2.44$, $p<0.05$) and senior-level ($z=2.46$, $p<0.05$) managers were afforded significantly more extra effort from followers than top-level managers when exhibiting transactional leadership.

Laissez-faire leadership - The results of analysis of variance (F=1.51) show no significant difference in the use of *laissez-faire* leadership across hierarchical levels. In addition, the results of z-tests show no significant difference in correlation coefficients for the three dependent variables between hierarchical levels.

Active constructive leadership - The results of a Mann-Whitney U test show top-level ($U=256.50$, $p<0.001$), director-level ($U=420.00$, $p<0.001$), senior-level ($U=744.50$, $p<0.001$) and middle-level ($U=791.50$, $p<0.01$) managers exhibited significantly more active constructive leadership than lower-level managers. In addition, top-level managers exhibited significantly more active constructive leadership than middle-level ($U=425.00$, $p<0.05$) managers. Z-tests were not performed for active constructive leadership as it did not meet parametric assumptions.

Passive-avoidant leadership - The results of analysis of variance (F=.46) show no significant difference in the use of passive-avoidant leadership behaviours across hierarchical levels. The results of z-tests show top-level managers inhibited extra effort from followers significantly more than senior-level managers when exhibiting passive-avoidant leadership behaviours ($z=2.19$, $p<0.05$). There were no significant differences between correlation coefficients for the dependent variables 'effectiveness' and 'satisfaction'.

Extra effort – The results of analysis of variance (F=11.04) show top-level managers encourage significantly more extra effort from followers than senior-level ($p<0.05$), middle-level ($p<0.01$) and lower-level ($p<0.001$) managers. In addition director-level ($p<0.001$) and senior-level ($p<0.01$) managers encourage significantly more extra effort from followers than lower-level managers.

Leadership effectiveness – The results of analysis of variance (F=1.19) show no significant difference in leadership effectiveness across hierarchical levels.

Follower satisfaction – The results of analysis of variance (F=1.09) show no significant difference in follower satisfaction across hierarchical levels.

Multiple regression analysis was performed for the category variable 'hierarchical level by unanimous opinion' to investigate predictors (taken from the independent variable list) of dependent variables (extra effort, effectiveness and satisfaction) for each category variable level. To ensure an adequate sample size of around 45 (five observations for each independent variable) (Hair *et al.*, 1998) the top-level manager category was merged with the director-level category. The results of the multiple regression analysis are presented in Tables 9.14, 9.15 and 9.16. The table reports standardised betas (β) along with the adjusted regression coefficient (ΔR^2) and *F* ratio. Regression equations are available for examination upon request.

All resulting regression models were examined to ensure that each sample size had not adversely affected the power of the regression analyses. Unfortunately some models did not reach the minimum required regression coefficient (R^2) of 0.70 and significance level of 0.01 (see Hair *et al.*, 1998). These models were:

- top-level and director-level by extra effort
- senior-level by extra effort
- middle-level by extra effort
- lower-level by extra effort
- top-level and director-level by leadership effectiveness
- senior-level by leadership effectiveness
- top-level and director-level by follower satisfaction
- senior-level by follower satisfaction
- lower-level by follower satisfaction

There is, therefore, an adverse effect of sample size on the power of the regression analysis for these models. This implies that the regression analysis may not be

sufficiently valid for these models. This means that the sample sizes may be too small for regression analysis to detect significant relationships.

The independent variables 'transformational leadership (overall)', 'transactional leadership (overall)', 'active constructive leadership' and 'passive-avoidant leadership' were not included in the multiple regression analysis owing to their composite nature. Including composite variables in the regression analysis would mean entering the same set of variables twice, which would have an adverse effect on the power of the regression analysis. Leaving these variables out of the analysis would also make the findings comparable to previous research (e.g. Densten, 2003).

Table 9.15 shows no significant predictors of extra effort for lower-level managers. Intellectual stimulation (β=0.40, p<0.01) was a significant positive predictor of extra effort, and *laissez-faire* leadership (β=-0.32, p<0.05) was a significant negative predictor of extra effort for top-level and director-level managers. Inspirational motivation (β=0.62, p<0.01) and individualised consideration (β=0.27, p<0.05) were significant positive predictors of extra effort for senior-level managers, and attributed charisma (β=0.51, p<0.05) and intellectual stimulation (β=0.36, p<0.05) were significant positive predictors of extra effort for middle-level managers.

Table 9.16 shows no significant predictors of leadership effectiveness for senior-level and middle-level managers. Individualised consideration (β=0.34, p<0.05) and contingent reward (β=0.28, p<0.05) were significant positive predictors of leadership effectiveness for top-level and director-level managers. Attributed charisma (β=0.37, p<0.05), individualised consideration (β=0.40, p<0.01), contingent reward (β=0.44, p<0.001), and active management-by-exception (β=0.32, p<0.01) were significant positive predictors of leadership effectiveness. And idealised influence (β=-0.37, p<0.01), inspirational motivation (β=-0.51, p<0.001) and *laissez-faire* leadership (β=-0.33, p<0.01) were significant negative predictors of leadership effectiveness for lower-level managers.

Table 9.15: Results of Multiple Regression for Extra Effort by Hierarchical Level

Independent Variable	Top-level and Director-level (n = 63)	Senior-level (n = 54)	Middle-level (n = 43)	Lower-level (n = 55)
AC	.15	.05	.55*	.35
II	-.09	-.19	.38	.28
IM	.17	.62**	-.34	.18
IS	.40**	.11	.36*	-.16
IC	.09	.27*	-.05	.02
CR	-.05	.09	-.05	.10
MBEA	-.15	-.02	.12	-.20
MBEP	.10	.15	-.20	-.20
LF	-.32*	-.04	.29	.10
Δ R^2	.50	.58	.55	.38
F	7.97***	9.12***	6.78***	4.58***

N.B. * = P<0.05, ** = P<0.01, *** = P<0.001, Δ R^2 = Adjusted regression Coefficient, , *F* = *F* Ratio

Table 9.16: Results of Multiple Regression for Leadership Effectiveness by Hierarchical Level

Independent Variable	Top-level and Director-level (n = 63)	Senior-level (n = 54)	Middle-level (n = 43)	Lower-level (n = 55)
AC	.16	.23	.23	.37*
II	.08	.15	.21	-.37**
IM	-.13	.25	-.12	-.51***
IS	-.01	.13	-.05	-.05
IC	.34*	.15	.31	.40**
CR	.28*	-.14	.14	.44***
MBEA	.00	-.12	.22	.32**
MBEP	-.12	.02	-.19	-.09
LF	-.15	-.23	.02	-.33**
Δ R^2	.58	.53	.64	.70
F	10.36***	7.73***	9.37***	14.64***

N.B. * = P<0.05, ** = P<0.01, *** = P<0.001, Δ R^2 = Adjusted regression Coefficient, , *F* = *F* Ratio

Table 9.17 shows attributed charisma (β=0.38, p<0.01) and individualised consideration (β=0.32, p<0.01) were significant positive predictors of follower satisfaction for top-level and director-level managers. Attributed charisma (β=0.60, p<0.01) and individualised consideration (β=0.28, p<0.05) were also significant positive predictors of follower satisfaction for senior-level managers. Individualised consideration (β=0.47, p<0.01) and active management-by-exception (β=0.21, p<0.05) were significant positive predictors of follower satisfaction for middle-level managers. And attributed charisma (β=0.47, p<0.01) and individualised consideration (β=0.52, p<0.01) were positive predictors for were significant positive predictors of follower satisfaction for lower-level managers.

Table 9.17: Results of Multiple Regression for Follower Satisfaction by Hierarchical Level

Independent Variable	Top-level and Director-level (n = 63)	Senior-level (n = 54)	Middle-level (n = 43)	Lower-level (n = 55)
AC	.38**	.60**	.06	.47**
II	.11	-.26	.15	-.03
IM	-.22	.21	-.04	-.20
IS	.10	-.04	-.01	-.25
IC	.32**	.28*	.47**	.52**
CR	.17	.04	-.07	.23
MBEA	-.06	-.04	.21*	.05
MBEP	-.11	.02	-.23	.00
LF	-.07	-.13	-.21	-.13
ΔR^2	.68	.63	.70	.58
F	15.31***	10.93***	12.13***	9.38***

N.B. * = P<0.05, ** = P<0.01, *** = P<0.001, ΔR^2 = Adjusted regression Coefficient, , *F* = *F* Ratio

9.5 Results for the Category variable Time Span of Discretion of a Manager's Role

The descriptive statistics for each independent and dependent variable by time span of discretion of a manager's roles are tabulated in Table 9.18.

*Table 9.18: The Means and Standard Deviations for Independent and Dependent Variables by Time Span**

Independent/ Dependent Variable	Ten years and under twenty years (n = 4)	Five years and under ten years (n = 12)	Two years and under five years (n = 49)	One year and under two years (n = 79)	Three months and under one year (n = 53)	Up to three months (n = 56)
AC	2.59 (.37)	2.76 (.42)	2.72 (.51)	2.75 (.46)	2.72 (.50)	2.50 (.45)
II	2.81 (.55)	2.98 (.33)	2.79 (.50)	2.70 (.50)	2.55 (.47)	2.42 (.52)
IM	3.00 (.62)	2.94 (.47)	2.87 (.58)	2.82 (.51)	2.74 (.50)	2.56 (.54)
IS	2.48 (.46)	2.96 (.33)	2.69 (.42)	2.72 (.45)	2.71 (.41)	2.47 (.45)
IC	2.56 (.38)	2.79 (.36)	2.78 (.48)	2.81 (.49)	2.83 (.46)	2.67 (.43)
TFL	2.69 (.43)	2.89 (.29)	2.77 (.43)	2.76 (.40)	2.71 (.39)	2.52 (.42)
CR	2.64 (.20)	2.83 (.37)	2.76 (.53)	2.76 (.49)	2.74 (.43)	2.68 (.47)
MBEA	2.11 (.71)	2.17 (.54)	2.20 (.50)	2.39 (.56)	2.18 (.57)	2.36 (.50)
MBEP	1.51 (.75)	1.41 (.54)	1.37 (.46)	1.20 (.42)	1.16 (.51)	1.17 (.51)
TAL	2.09 (.22)	2.14 (.25)	2.11 (.27)	2.12 (.25)	2.03 (.27)	2.07 (.22)
LF	.64 (.63)	.80 (.57)	.84 (.47)	.73 (.42)	.68 (.40)	.75 (.51)
ACLEAD	2.68 (.37)	2.88 (.28)	2.77 (.43)	2.76 (.40)	2.72 (.38)	2.55 (.41
PALEAD	1.07 (.62)	1.11 (.51)	1.10 (.42)	.97 (.38)	.92 (.41)	.96 (.46)
EE	2.41 (.63)	2.76 (.41)	2.47 (.51)	2.48 (.59)	2.62 (.55)	2.30 (.61)
EFF	3.07 (.21)	2.98 (.46)	2.84 (.47)	3.02 (.43)	2.95 (.44)	2.94 (.43)
SAT	2.71 (.21)	3.02 (.49)	2.99 (.52)	3.02 (.48)	2.98 (.54)	3.00 (.57)

*Standard deviations in parenthesis

Chi-square 'goodness of fit' and homogeneity of variance tests were carried out on all independent and dependent variables for this data set. This was to ascertain whether parametric tests could be used for the analysis. If variables failed these

tests, an alternative non-parametric test was used for the analysis. The independent variables 'transformational leadership (overall)' and 'active constructive leadership' failed the 'goodness of fit' test (the 'goodness of fit' test can be viewed in the previous section of this chapter; see Table 9.9). The results of non-parametric test alternatives (Mann-Whitney U test and Spearman's ρ) were therefore reported for these variables. Furthermore, z-tests were not performed for these variables.

A homogeneity of variance test was also performed for each independent variable to ensure that variances were not significantly dissimilar. The results of tests of homogeneity of variance for each independent and dependent variable are presented in Table 9.19.

Table 9.19: Results of Homogeneity of Variance Tests for Independent and Dependent Variables by Time Span

Independent/ Dependent Variable	d.f. 1	d.f.2	Levene Statistic
AC	5	247	.31
II	5	247	.94
IM	5	247	.36
IS	5	247	.41
IC	5	247	.50
TFL	5	247	.56
CR	5	247	1.04
MBEA	5	247	.22
MBEP	5	247	1.37
TAL	5	247	1.08
LF	5	247	1.38
ACLEAD	5	247	.76
PALEAD	5	247	.87
EE	5	246	1.06
EFF	5	247	.46
SAT	5	247	.77

N.B. * = P<0.05, ** = P<0.01, *** = P<0.001,

All independent and dependent variables passed the homogeneity of variance test. The variances for all variables, therefore, were not significantly dissimilar, which meets underlying assumptions for the proper use of parametric tests.

The results of analysis of variance for each independent variable are shown in Table 9.20.

Table 9.20: ANOVA table for Independent and Dependent Variables by Time Span

Independent/ Dependent Variable	d.f. (between groups)	d.f. (within groups)	d.f. (total)	F-value
AC	5	247	252	2.13
II	5	247	252	5.11***
IM	5	247	252	2.64*
IS	5	247	252	3.86**
IC	5	247	252	.94
TFL	5	247	252	3.23**
CR	5	247	252	.32
MBEA	5	247	252	1.66
MBEP	5	247	252	1.86
TAL	5	247	252	1.02
LF	5	247	252	.68
ACLEAD	5	247	252	2.64*
PALEAD	5	247	252	1.29
EE	5	246	251	2.41*
EFF	5	247	252	1.08
SAT	5	247	252	.28

N.B. * = P<0.05, ** = P<0.01, *** = P<0.001,

The correlation coefficients between independent variables and the dependent variables - 'extra effort', 'leadership effectiveness' and 'follower satisfaction' – are presented in Tables 9.21, 9.22, and 9.23 respectively.

Table 9.21: Correlation Coefficients for Independent Variables and Extra Effort (Time Span)

Independent Variable	Ten years and under twenty years (*n* = 4)	Five years and under ten years (*n* = 12)	Two years and under five years (*n* = 49)	One year and under two years (*n* = 79)	Three months and under one year (*n* = 53)	Up to three months (*n* = 56)
AC	.81	.71**	.61***	.71***	.69***	.59***
II	.63	.55	.60***	.65***	.54***	.47***
IM	.42	.68*	.62***	.67***	.65***	.49***
IS	.92	.20	.54***	.60***	.63***	.46***
IC	.04	.75**	.52***	.42***	.58***	.64***
TFL	.40†	.73**†	.66***†	.77***†	.72***†	.59***†
CR	.76	.46	.50***	.58***	.56***	.52***
MBEA	-.88	-.17	.15	.05	-.04	-.05
MBEP	.13	-.51	-.13	-.18	-.47***	-.19
TAL	-.57	-.27	.34*	.32**	-.03	.18
LF	.40	-.53	-.32*	-.42***	-.62***	-.19
ACLEAD	.80†	.66*†	.63***†	.77***†	.71***†	.62***†
PALEAD	.29	-.57	-.25	-.33**	-.60***	-.22

N.B. * = P<0.05, ** = P<0.01, *** = P<0.001, † = Spearman's ρ value (all other values are Pearson's r).

Table 9.22: Correlation Coefficients for Independent Variables and Leadership Effectiveness (Time Span)

Independent Variable	Ten years and under twenty years ($n = 4$)	Five years and under ten years ($n = 12$)	Two years and under five years ($n = 49$)	One year and under two years ($n = 79$)	Three months and under one year ($n = 53$)	Up to three months ($n = 56$)
AC	.46	.72**	.78***	.77***	.72***	.65***
II	.75	.68*	.57***	.54***	.61***	.58***
IM	.76	.49	.66***	.51***	.57***	.52***
IS	.61	.23	.52***	.42***	.58***	.64***
IC	.30	.73**	.69***	.66***	.71***	.61***
TFL	.40†	.73**†	.69***†	.72***†	.73***†	.67***†
CR	-.38	.66*	.73***	.65***	.60***	.70***
MBEA	.19	-.17	.25	.12	.12	.14
MBEP	-.82	-.24	-.40**	-.51***	-.42**	-.54***
TAL	-.85	.03	.39*	.22*	.14	.18
LF	-.06	-.64*	-.50***	-.64***	-.64***	-.63***
ACLEAD	.20†	.72**†	.71***†	.75***†	.74***†	.68***†
PALEAD	-.53	-.49	-.50***	-.63***	-.57***	-.65***

N.B. * = P<0.05, ** = P<0.01, *** = P<0.001, † = Spearman's ρ value (all other values are Pearson's r).

Table 9.23: Correlation Coefficients for Independent Variables and Follower Satisfaction (Time Span)

Independent Variable	Ten years and under twenty years ($n = 4$)	Five years and under ten years ($n = 12$)	Two years and under five years ($n = 49$)	One year and under two years ($n = 79$)	Three months and under one year ($n = 53$)	Up to three months ($n = 56$)
AC	-.60	.52	.83***	.77***	.75***	.58***
II	-.87	.57	.56***	.50***	.62***	.58***
IM	-.91	.46	.59***	.45***	.65***	.54***
IS	-.63	.05	.61***	.47***	.65***	.53***
IC	-.57	.76**	.73***	.73***	.75***	.61***
TFL	-.63†	.62*†	.71***†	.67***†	.80***†	.64***†
CR	.30	.59*	.73***	.63***	.58***	.60***
MBEA	-.14	-.06	.22	.13	.07	.15
MBEP	-.82	-.24	-.44**	-.49***	-.48***	-.54***
TAL	.70	.27	.36*	.24*	.06	.11
LF	-.21	-.36	-.59***	-.70***	-.62***	-.65***
ACLEAD	-.32†	.61*†	.72***†	.68***†	.78***†	.65***†
PALEAD	.29	-.19	-.57***	-.65***	-.61***	-.67***

N.B. * = P<0.05, ** = P<0.01, *** = P<0.001, † = Spearman's ρ value (all other values are Pearson's r).

A summary of the results for each dependent is provided below. Where analysis of variance has been used the results of multiple comparisons (using the Tukey HSD test) are reported. If variables failed homogeneity of variance tests, the results of an alternative non-parametric test are reported (Mann Whitney U-test). The results of z-tests are also reported for each independent variable. Multiple comparisons and z-tests, however, were not conducted for time span categories 'ten years under twenty' and 'five years under ten' owing to small sample sizes.

Attributed charisma - The results of analysis of variance (F=2.13) show managers working to a time span of between one and two years were attributed with significantly more charisma than managers working to a time span of up to three months ($p<0.05$). The results of z-tests show that managers working to a time span of between two and five years were significantly more satisfying when attributed with

charisma than managers working to a time span of up to three months ($z=2.61$, $p<0.05$). There were no significant differences for the dependent variables 'extra effort' and 'effectiveness'.

Idealised influence - The results of analysis of variance ($F=5.11$) show managers working to a time span of between two and five years ($p<0.01$) and between one and two years ($p<0.05$) exhibited significantly more idealised influence than managers working to a time span of up to three months. The results of z-tests show no significant difference for correlation coefficients for the three dependent variables between time spans.

Inspirational motivation - The results of analysis of variance ($F=2.64$) show managers working to a time span of between two and five years exhibited significantly more inspirational motivation than managers working to a time span of up to three months ($p<0.05$). The results of z-tests show no significant difference for correlation coefficients for the three dependent variables between time spans.

Intellectual stimulation - The results of analysis of variance ($F=3.86$) show managers working to a time span of between one and two years exhibited significantly more Intellectual stimulation than managers working to a time span of up to three months ($p<0.05$). The results of z-tests show no significant difference for correlation coefficients for the three dependent variables between time spans.

Individualised consideration - The results of analysis of variance ($F=0.94$) show no significant differences. The results of z-tests show no significant difference for correlation coefficients for the three dependent variables between time spans.

Transformational leadership (overall) - The results of a Mann-Whitney U-test show managers working to time spans of between three months and one year ($U=1068.00$, $p<0.05$), between one and two years ($U=1540.50$, $p<0.01$), and between two and five years ($U=925.00$, $p<0.01$) exhibited significantly more transformational leadership (overall) than managers working to a time span of up to three months. Z-tests were not performed for transformational leadership (overall) as it did not pass parametric assumption tests.

Contingent reward - The results of analysis of variance (F=0.32) show no significant differences. The results of z-tests show no significant difference for correlation coefficients for the three dependent variables between time spans.

Management-by-exception (active) - The results of analysis of variance (F=1.67) show no significant differences. The results of z-tests show no significant difference for correlation coefficients for the three dependent variables between time spans.

Management-by-exception (passive) - The results of analysis of variance (F=1.86) show no significant differences. The results of z-tests show no significant difference for correlation coefficients for the three dependent variables between time spans.

Transactional leadership (overall) – The results of analysis of variance (F=1.02) show no significant differences. The results of z-tests show no significant difference for correlation coefficients for the three dependent variables between time spans.

Laissez-faire leadership – The results of analysis of variance (F=0.68) show no significant differences. The results of z-tests show managers working to a time span of between three months and one year were significantly more inhibitory to extra effort than managers working to a time span of up to three months ($z=2.70$, $p<0.05$).

Active constructive leadership - The results of a Mann-Whitney U-test show managers working to time spans of between three months and one year ($U=1111.00$, $p<0.05$), between one and two years ($U=1611.50$, $p<0.01$), and between two and five years ($U=944.00$, $p<0.01$) exhibited significantly more active constructive leadership than managers working to a time span of up to three months. Z-tests were not performed for active constructive leadership as it did not pass parametric assumption tests.

Passive-avoidant leadership – The results of analysis of variance (F=1.29) show no significant differences. The results of z-tests show managers working to a time span of between three months and one year were significantly more inhibitory to extra effort than managers working to time spans of up to three months ($z=2.38$, $p<0.05$) and between two and five years ($z=2.14$, $p<0.05$).

Extra effort – The results of analysis of variance (F=2.41) show managers working to a time span of between three months and one year encourage significantly more extra effort from followers than managers working to a time span of up to three months ($p<0.05$).

Leadership effectiveness – The results of analysis of variance (F=1.08) show no significant difference in leadership effectiveness across time spans.

Follower satisfaction – The results of analysis of variance (F=0.28) show no significant difference in follower satisfaction across time spans.

Multiple regression analysis was also performed for the category variable time span to investigate predictors (taken from the independent variable list) of dependent variables (extra effort, effectiveness and satisfaction) for each category variable level. To ensure an adequate sample size of around 45 (five observations for each independent variable) (Hair *et al.*, 1998) the top three time span categories (between ten and twenty years, between five and ten years and between two and five years) were merged into one category 'two years and over'. The results of this analysis are presented in Tables 9.24, 9.25 and 9.26. Standardised betas (β) are presented in the tables along with the adjusted regression coefficient (ΔR^2) and *F* ratio. Regression equations are available for examination upon request.

All resulting regression models were examined to ensure that the size of each sample had not adversely affected the power of the regression analyses. Unfortunately some models did not reach the minimum required regression coefficient (R^2) of 0.70 and significance level of 0.01 (see Hair *et al.*, 1998). These models were extra effort (all time spans), up to three months by leadership effectiveness, two years and over by effectiveness, up to three months by follower satisfaction, and two years and over by follower satisfaction. There is, therefore, as with hierarchical level, an adverse effect of sample size on the power of the regression analysis for these models. This implies the regression analysis may not be sufficiently valid for these models.

The independent variables 'transformational leadership (overall)', 'transactional leadership (overall)', 'active constructive leadership' and 'passive-avoidant

leadership' were not included in the multiple regression analysis owing to their composite nature. Including composite variables in the regression analysis would mean entering the same set of variables twice, which would have an adverse effect on the power of the regression analysis. Leaving these variables out of the analysis would also make the findings comparable to previous research (e.g. Densten, 2003). Furthermore, multiple regression models were not produced for the time span over ten and under twenty years owing to a small sample size.

Table 9.24 shows no significant predictors of extra effort for managers working to the time span two years and over. Individualised consideration (β=0.27, p<0.05) and passive management-by-exception (β=0.23, p<0.05) were significant positive predictors of extra effort for managers working to a time span of over one year and under two years. Attributed charisma was a significant positive predictor of extra effort for managers working to time spans of over three months and under one year (β=0.40, p<0.05) and up to the months (β=0.49, p<0.05).

Table 9.24: Results of Multiple Regression for Extra Effort by Time Span

Independent Variable	Two years and over (n = 65)	One year and under two years (n = 79)	Three months and under one year (n = 53)	Up to three months (n = 56)
AC	.21	.27	.40*	.49*
II	.16	.15	-.06	.00
IM	.21	.24	.02	.13
IS	.17	.06	.24	.06
IC	.10	.27*	-.05	-.01
CR	.02	.08	.22	.16
MBEA	-.12	.02	-.18	-.21
MBEP	.05	.23*	-.12	.07
LF	.03	.00	-.12	.12
ΔR^2	.41	.62	.56	.32
F	5.90***	14.92***	8.28***	3.92**

N.B. * = P<0.05, ** = P<0.01, *** = P<0.001, ΔR^2 = Adjusted regression Coefficient, , *F* = *F* Ratio

Table 9.25 shows no significant predictors of leadership effectiveness for managers working to the time span two years and over. Attributed charisma (β=0.56, p<0.001), individualised consideration (β=0.28, p<0.01) and contingent reward (β=0.23, p<0.05) were significant positive predictors of extra effort for managers working to a time span of over one year and under two years. Individualised consideration (β=0.38, p<0.01) was a significant positive predictor, and *laissez-faire* leadership (β=-0.29, p<0.05) was a significant negative predictor, of leadership effectiveness for managers working to a time span of over three months and under one year. Attributed charisma (β=0.34, p<0.05) and contingent reward (β=0.36, p<0.05) were significant positive predictors and inspirational motivation (β=-0.34, p<0.05) and *laissez-faire* leadership (β=-0.30, p<0.05) were significant negative predictors of leadership effectiveness for managers working to a time span of up to three months.

Table 9.25: Results of Multiple Regression for Leadership Effectiveness by Time Span

Independent Variable	Two years and over (n = 65)	One year and under two years (n = 79)	Three months and under one year (n = 53)	Up to three months (n = 56)
AC	.24	.56***	.26	.34*
II	.03	-.04	.12	-.02
IM	.16	-.07	-.17	-.34*
IS	-.10	-.24*	.08	.16
IC	.26	.28**	.38**	.02
CR	.20	.23*	.07	.36*
MBEA	-.04	-.10	.05	-.07
MBEP	-.05	-.13	.01	-.19
LF	-.13	-.06	-.29*	-.30*
ΔR^2	.58	.67	.64	.61
F	10.92***	18.58***	11.35***	10.67***

N.B. * = P<0.05, ** = P<0.01, *** = P<0.001, ΔR^2 = Adjusted regression Coefficient, , *F* = *F* Ratio

Table 9.26 shows attributed charisma (β=0.42, p<0.05) and individualised consideration (β=0.32, p<0.05) were significant positive predictors of follower

satisfaction for managers working to a time span of two years and over. Attributed charisma (β=0.45, p<0.001), individualised consideration (β=0.39, p<0.001) and contingent reward (β=0.19, p<0.05) were significant positive predictors, and *laissez-faire* leadership (β=-0.30, p<0.01) was a significant negative predictor, of follower satisfaction for managers working to a time span of over one year and under two years. Individualised consideration (β=0.42, p<0.01) was a significant positive predictor of follower satisfaction for managers working to a time span of over three months and under one year, and *laissez-faire* leadership (β=-0.35, p<0.05) was a significant negative predictor of follower satisfaction for managers working to a time span of up to three months.

Table 9.26: Results of Multiple Regression for Follower Satisfaction by Time Span

Independent Variable	Two years and over (n = 65)	One year and under two years (n = 79)	Three months and under one year (n = 53)	Up to three months (n = 56)
AC	.42*	.45***	.27	.23
II	-.07	-.11	.05	.04
IM	-.07	-.18	.05	-.15
IS	-.02	-.09	.15	-.01
IC	.32	.39***	.42**	.16
CR	.22	.19*	-.05	.16
MBEA	-.04	-.06	.05	-.03
MBEP	.02	.00	-.07	-.16
LF	-.15	-.30**	-.11	-.35*
Δ R^2	.62	.74	.71	.49
F	12.79***	26.07***	15.10***	6.96***

N.B. * = P<0.05, ** = P<0.01, *** = P<0.001, Δ R^2 = Adjusted regression Coefficient, , F = F Ratio

9.6 Self-rating Bias within the Multiple-Response Data Set

In chapter six it was explained that there was general agreement among empirical research findings that self-ratings are consistently significantly higher than other-ratings. These significant differences are attributed to leniency or halo effects

(Furnham and Stringfield, 1998; Harris and Schaubroeck, 1988; Kruger and Dunning, 1999). Potential self-rating bias in the data set was therefore checked. The results are summarised below. Descriptive statistics are shown Table 9.27.

*Table 9.27: Means and Standard Deviations of Independent and Dependent Variables by Rating**

Independent/ Dependent Variable	Self rating	Peer rating	Superior Rating	Subordinate Rating
AC	2.78 (.62)	2.52 (.84)	2.64 (.76)	2.52 (.94)
II	2.83 (.68)	2.43 (.91)	2.45 (.79)	2.44 (.86)
IM	3.02 (.65)	2.48 (.91)	2.44 (.77)	2.71 (.90)
IS	2.97 (.53)	2.42 (.82)	2.40 (.76)	2.52 (.76)
IC	3.21 (.54)	2.52 (.88)	2.61 (.68)	2.42 (.94)
TFL	2.96 (.47)	2.48 (.74)	2.51 (.62)	2.52 (.76)
CR	3.03 (.62)	2.51 (.84)	2.56 (.73)	2.53 (.89)
MBEA	2.31 (.89)	2.34 (.89)	2.26 (.80)	2.33 (.90)
MBEP	1.07 (.65)	1.33 (.81)	1.33 (.77)	1.33 (.89)
TAL	2.14 (.44)	2.06 (.50)	2.05 (.44)	2.07 (.50)
LF	.56 (.54)	.92 (.82)	.90 (.73)	.92 (.85)
ACLEAD	2.97 (.46)	2.48 (.72)	2.52 (.61)	2.52 (.75)
PALEAD	.81 (.51)	1.13 (.75)	1.11 (.68)	1.12 (.79)
EE	2.78 (.66)	2.06 (1.07)	2.20 (.90)	2.38 (1.04)
EFF	3.20 (.49)	2.77 (.79)	2.86 (.69)	2.80 (.89)
SAT	3.23 (.57)	2.88 (.88)	2.86 (.77)	2.81 (1.01)

* Standard deviations in parenthesis

There were 1202 ratings for the 367 participants with multiple responses in the study, 332 self-ratings, 243 peer-ratings, 308 superior-ratings and 319 subordinate-ratings. All independent and dependent variables passed a Chi-square 'goodness of fit' test for this data set (see Table 9.28).

Table 9.28: Chi-square 'Goodness of Fit' Test for Independent and Dependent Variables by Rating

Independent/ Dependent Variable	d.f.	Chi-square
AC	23	1383.07***
II	25	1421.90***
IM	22	1136.97***
IS	24	1537.32***
IC	23	1241.52***
TFL	174	2731.05***
CR	23	1227.69***
MBEA	25	1113.63***
MBEP	21	1239.96***
TAL	105	3771.12***
LF	21	2063.75***
ACLEAD	201	2423.16***
PALEAD	54	2339.04***
EE	21	1409.77***
EFF	23	1577.64***
SAT	9	1052.76***

N.B. * = P<0.05, ** = P<0.01, *** = P<0.001,

A 'homogeneity of variance' test was also performed for each independent and dependent variable to ensure that variances were not significantly dissimilar. Where independent and dependent variables failed this test the results of alternative non-parametric tests are reported. The results of tests of homogeneity of variances for each independent and dependent variable are presented in Table 9.29. All independent and dependent variables, except active management-by-exception and transactional leadership (overall), failed the homogeneity of variance test. Similar variances for these variables could not be assumed. Parametric tests could not be used for analysis purposes as the variables did not meet this parametric assumption. Non-parametric tests were therefore conducted for these variables.

Table 9.29: Results of Homogeneity of Variance Tests for Independent and Dependent Variables by Rating

Independent/ Dependent Variable	d.f. 1	d.f.2	Levene Statistic
AC	3	1194	16.12***
II	3	1196	7.89***
IM	3	1195	15.06***
IS	3	1193	19.18***
IC	3	1193	36.82***
TFL	3	1198	25.52***
CR	3	1191	16.12***
MBEA	3	1191	2.00
MBEP	3	1194	10.66***
TAL	3	1197	2.61
LF	3	1194	23.94***
ACLEAD	3	1198	24.84***
PALEAD	3	1195	21.25***
EE	3	1129	25.24***
EFF	3	1184	31.52***
SAT	3	1183	30.71***

N.B. * = P<0.05, ** = P<0.01, *** = P<0.001,

The results of an analysis of variance test for each independent variable are shown in Table 9.30.

A summary of the results for each independent and dependent variable appears below. Where analysis of variance has been used, the results of multiple comparisons (using the Tukey HSD test) are reported. If variables failed homogeneity of variance tests, the results of an alternative non-parametric test are reported.

Table 9.30: ANOVA table for Independent and Dependent Variables by Rating

Independent/ Dependent Variable	d.f. (between groups)	d.f. (within groups)	d.f. (total)	F-value
AC	3	1194	1197	14.64***
II	3	1196	1199	37.15***
IM	3	1195	1198	66.21***
IS	3	1193	1196	69.08***
IC	3	1193	1196	120.29***
TFL	3	1198	1201	50.85***
CR	3	1191	1194	59.87***
MBEA	3	1191	1194	1.09
MBEP	3	1194	1197	1616***
TAL	3	1197	1200	1.62
LF	3	1194	1197	30.36***
ACLEAD	3	1198	1201	42.51***
PALEAD	3	1195	1198	16.10***
EE	3	1129	1132	83.88***
EFF	3	1184	1187	37.37***
SAT	3	1183	1186	35.63***

N.B. * = P<0.05, ** = P<0.01, *** = P<0.001,

Attributed charisma – This variable failed homogeneity of variance tests. The results of the Mann Whitney U-test show that self-ratings rated significantly higher than peer ratings (U=33389.00, p<0.01) and subordinate ratings (U=46279.50, p<0.01) for attributed charisma.

Idealised influence - This variable failed homogeneity of variance tests. The results of the Mann Whitney U-test show that self-ratings rated significantly higher than peer ratings (U=29170.50, p<0.001), superior ratings (U=36274.00, p<0.001) and subordinate ratings (U=38410.00, p<0.001) for idealised influence.

Inspirational motivation - This variable failed homogeneity of variance tests. The results of the Mann Whitney U-test show that self-ratings rated significantly higher than peer ratings (U=25222.00, p<0.001), superior ratings (U=28273.00, p<0.001)

and subordinate ratings (U=42752.00, p<0.001) for inspirational motivation. In addition, subordinate ratings rated significantly higher than superior ratings (U=38498.50, p<0.001) and peer ratings (U=32251.50, p<0.01) for inspirational motivation.

Intellectual stimulation - This variable failed homogeneity of variance tests. The results of the Mann Whitney U-test show that self-ratings rated significantly higher than peer ratings (U=23118.00, p<0.001), superior ratings (U=27608.50, p<0.001) and subordinate-ratings (U=33102.50, p<0.001) for intellectual stimulation. In addition, subordinate ratings rated significantly higher than superior ratings (U=44179.50, p<0.05) for intellectual stimulation.

Individualised consideration - This variable failed homogeneity of variance tests. The results of the Mann Whitney U-test show that self-ratings rated significantly higher than peer ratings (U=20763.00, p<0.001), superior ratings (U=25285.00, p<0.001) and subordinate ratings (U=26215.50, p<0.001) for individualised consideration. In addition, superior ratings rated significantly higher than subordinate ratings (U=44360.00, p<0.05) for individualised consideration.

Transformational leadership (overall) - This variable failed homogeneity of variance tests. The results of the Mann Whitney U-test show that self-ratings rated significantly higher than peer ratings (U=23852.00, p<0.001), superior ratings (U=28526.00, p<0.001) and subordinate ratings (U=34537.00, p<0.001) for transformational leadership (overall).

Contingent reward - This variable failed homogeneity of variance tests. The results of the Mann Whitney U-test show that self-ratings rated significantly higher than peer ratings (U=24667.00, p<0.001), superior ratings (U=31125.00, p<0.001) and subordinate ratings (U=35355.50, p<0.001) for contingent reward.

Management-by-exception (active) – The results of an analysis of variance test (F=0.48) show no significant differences.

Management-by-exception (passive) - This variable failed homogeneity of variance tests. The results of the Mann Whitney U-test show that self-ratings rated

significantly lower than peer ratings (U=32209.00, p<0.001), superior ratings (U=40263.00, p<0.001) and subordinate ratings (U=44081.00, p<0.001) for management-by-exception (passive).

Transactional leadership (overall) – The results of an analysis of variance test (F= 2.45) show no significant differences.

Laissez-faire leadership - This variable failed homogeneity of variance tests. The results of the Mann Whitney U-test show that self-ratings rated significantly lower than peer ratings (U=30152.00, p<0.001), superior ratings (U=37138.50, p<0.001) and subordinate ratings (U=40728.50, p<0.001) for *laissez-faire* leadership.

Active constructive leadership - This variable failed homogeneity of variance tests. The results of the Mann Whitney U-test show that self-ratings rated significantly higher than peer ratings (U=23383.00, p<0.001), superior ratings (U=27935.50, p<0.001) and subordinate ratings (U=33873.00, p<0.001) for active constructive leadership.

Passive-avoidant leadership - This variable failed homogeneity of variance tests. The results of the Mann Whitney U-test show that self-ratings rated significantly lower than peer ratings (U=30382.50, p<0.001), superior ratings (U=37477.50, p<0.001) and subordinate ratings (U=41600.50, p<0.001) for passive leadership.

Extra effort – This variable failed homogeneity of variance tests. The results of the Mann Whitney U-test show that self-ratings rated significantly higher than peer ratings (U=21058.50, p<0.001), superior ratings (U=27373.00, p<0.001) and subordinate ratings (U=40424.50, p<0.001) for extra effort. In addition, subordinate ratings rated significantly higher than superior ratings (U=37628.00, p<0.05) for extra effort.

Leader effectiveness - This variable failed homogeneity of variance tests. The results of the Mann Whitney U-test show that self-ratings rated significantly higher than peer ratings (U=26804.50, p<0.001), superior ratings (U=34858.00, p<0.001) and subordinate ratings (U=39594.00, p<0.001) for leader effectiveness.

Leader satisfaction - This variable failed homogeneity of variance tests. The results of the Mann Whitney U-test show that self-ratings rated significantly higher than peer ratings (U=30982.00, p<0.001), superior ratings (U=35964.50, p<0.001) and subordinate ratings (U=41553.00, p<0.001) for leader satisfaction.

These results support previous findings summarised in section 6.4 of this thesis: self-rating scores seemed to be upwardly biasing the results except in the case of management-by-exception (active) and transactional leadership (overall). Self-ratings and the average of other-ratings therefore were correlated to investigate whether this bias was consistent. The results are tabulated in Table 9.31.

Table 9.31: Correlation Coefficients for Independent and Dependent Variables for Self-ratings and the Average of Other-ratings

Variable	Correlation
Attributed charisma	.07†
Idealised influence	.26***†
Inspirational motivation	.28***†
Intellectual stimulation	.29***†
Individualised consideration	.20***†
Transformational leadership	.23***†
Contingent reward	.23***†
Management-by-exception (active)	.15**
Management-by-exception (passive)	.11*†
Transactional leadership	.04
Laissez-faire leadership	.08†
Active constructive leadership	.26***†
Passive-avoidant leadership	.13*†
Extra effort	.14*†
Effectiveness	.18**†
Satisfaction	.17**†

N.B. * = P<0.05, ** = P<0.01, *** = P<0.001, † = Spearman's ρ value (all other values are Pearson's r).

The correlation coefficients suggest a consistent upward bias within the data set caused by self-ratings for most of the variables, namely idealised influence,

inspirational motivation, intellectual stimulation, individualised consideration, transformational leadership (overall), contingent reward, active constructive leadership, extra effort, effectiveness and satisfaction. The correlation coefficients also show a consistent downward bias for management-by-exception (passive) and passive-avoidant leadership. There were three variables that did not show a consistent bias: attributed charisma, transactional leadership (overall) and *laissez-faire* leadership. These results therefore suggest that using the multiple-rating data set would show similar results with or without self-ratings, with the possible exception of the independent variables attributed charisma, transactional leadership (overall) and *laissez-faire* leadership. The analysis of the data set with self-ratings omitted was nevertheless still conducted for rigour.

It is interesting and important to note the three dimensions that did not have consistent bias and the possible reasons for this finding. This inconsistency in bias may be due to differences in perception as to what is effective from differing viewpoints (self, peer, superior and subordinate), as has been highlighted earlier in this thesis (see section 6.4). This will be further explored later in this thesis. There may be other reasons for this finding. For example, the findings relating to attributed charisma are surprising given the association it has with transformational leadership. The expectation would therefore be that attributed charisma would also have a consistent upward bias, as has been found for all other dimensions constituting transformational leadership. This finding may be due to the nature of attributed charisma: it concerns attributes, not behaviours.

9.7 Summary of Results for Data Excluding Self-ratings and Comparison to the Results for Data Including Self-ratings

A separate analysis for the two category variables was conducted which excluded all self-ratings. The findings are summarised below and compared to the results gained for data including self-ratings. The detailed results for this analysis (including U and p values) are available separately owing to their extensive nature. All independent and dependent variables passed a 'goodness of fit' test for this data set except 'transformational leadership (overall)' and 'active constructive leadership'.

Alternative non-parametric tests were therefore used when analysing these variables.

Owing to the omission of self-ratings from the data set, single ratings were included this time in the data analysis. Analysis of variance and Mann Whitney U-tests (if the dependent variable failed parametric tests) were conducted to test for significant differences between single, double and triple ratings (there were no quadruple ratings owing to the self-rating omission).

The results of a Mann Whitney U-test show single ratings scored significantly lower then double ratings ($U=2252.50$, $p<0.05$) for the independent variable *laissez-faire* leadership. The results of a Mann Whitney U-test also showed that triple ratings scored significantly higher than double ratings ($U=10265.00$, $p<0.01$) for the independent variable management-by-exception (active). No other significant differences were found. Single-rating bias was therefore not apparent in this data set.

9.7.1 The Use of Transformational, Transactional and Laissez-faire Leadership across Hierarchical Levels (Self-ratings Omitted)

The results for multiple ratings with self-ratings omitted are the same as for multiple ratings including self-ratings for the following behaviours:

- Idealised influence
- Intellectual stimulation
- Individualised consideration
- Transformational leadership (overall)
- Contingent reward
- Management-by-exception (passive)
- Transactional leadership (overall)
- *Laissez-faire* leadership
- Passive-avoidant leadership

The results for attributed charisma are slightly different. The results with self-ratings omitted show that top-level and director-level managers exhibit more attributed charisma than both middle and lower-level managers. The original analysis showed that top-level, director-level and senior-level managers exhibit more attributed charisma than lower-level management only.

The results for inspirational motivation are also slightly different. In addition to the results of the original analysis, top-level managers appear to exhibit more inspirational motivation than senior-level management.

The results with self-ratings omitted for management-by-exception (active) show no significant differences. The original analysis (self-ratings included) showed that lower-level managers appear to use management-by-exception (active) more than top-level managers.

The same results were found with self-ratings omitted for the independent variable 'active constructive leadership', except that, in addition to the original findings, director-level managers also exhibited significantly more active constructive leadership than middle-level managers.

9.7.2 The Use of Transformational, Transactional and Laissez-faire Leadership across Time Spans (Self-ratings Omitted)

The results for multiple ratings with self-ratings omitted are the same as for multiple ratings including self-ratings for the following behaviours:

- Idealised influence
- Inspirational motivation
- Intellectual stimulation
- Individualised consideration
- Transformational leadership (overall)
- Contingent reward
- Management-by-exception (active)

- Management-by-exception (passive)
- *Laissez-faire* leadership
- Transactional leadership (overall)
- Active constructive leadership
- Passive-avoidant leadership

As with hierarchical level, the results for attributed charisma are different; there is no significant difference in its use by time span. The original analysis (self-ratings included) showed managers working to a time span of between one and two years appeared to use attributed charisma more than managers working to a time span of up to three months.

9.7.3 The Outcomes of Transformational, Transactional and Laissez-faire Leadership across Hierarchical Levels (Self-ratings Omitted)

The results for multiple ratings with self-ratings omitted are the same as for multiple ratings including self-ratings for the following behaviours:

- Individualised consideration
- Transformational leadership (overall)
- *Laissez-faire* leadership
- Active constructive leadership

Again, the results for attributed charisma are slightly different. While attributed charisma is effective when exhibited by lower-level managers, it appears to be significantly *more* effective when used by senior-level and middle-level managers. The original analysis (self-ratings included) showed no differences in the effectiveness of attributed charisma across hierarchical levels.

The results for idealised influence are also slightly different. The analysis with self-ratings omitted shows that director-level managers are more effective than both top-level and lower-level managers when exhibiting idealised influence, and that middle-

level managers are more effective than lower-level managers when exhibiting this dimension. The original analysis found that both director-level and senior-level managers were more effective than lower-level managers when exhibiting idealised influence. In addition, the analysis with self-ratings omitted shows no significant differences across dependent variables for the outcome variable extra effort. The original analysis, however, did find significant differences for this outcome variable. Furthermore, idealised influence appears not to be effective at top-levels when self-ratings are omitted, contrary to the fining in the original analysis.

The results for inspirational motivation again are also slightly different. The analysis with self-ratings omitted shows no significant difference for this dependent variable across the outcome variable extra effort. The original analysis did find significant differences. In addition to what the original analysis found for the outcome variable 'effectiveness', middle-level managers appear to be more effective than lower-level managers when exhibiting inspirational motivation when self-ratings are omitted from the analysis. As with the original analysis, no significant differences were found for satisfaction with this dimension.

The results for intellectual stimulation show that with self-ratings omitted it appears not to be effective (i.e. neutral) at top-levels, contrary to what was found in the original analysis.

Contingent reward appears not to be conducive to extra effort at top-levels with self-ratings omitted from the analysis, contrary to the finding in the original analysis.

There is no difference in the level of extra effort generated or satisfaction when managers exhibit management-by-exception (active) across hierarchical levels. The original analysis (self-ratings included) showed significant differences across hierarchical levels for extra effort, effectiveness and satisfaction when managers exhibited management-by-exception (active). The analysis with self-ratings omitted also shows that middle-level managers are more effective than senior-level managers when exhibiting management-by-exception (active). This was the same as for the original analysis except that the original analysis found further significant differences across hierarchical levels for the outcome variable 'effectiveness'. The analysis with self-ratings omitted shows that management-by-exception (active) is

not conducive to extra effort at middle-levels as it was in the original analysis. The analysis with self-ratings omitted also shows director-level managers to be effective when exhibiting management-by-exception (active). This was not the case in the original analysis. Management-by-exception (active) appears not to be satisfying at lower-levels with self-ratings omitted. This was also not the case in the original analysis.

There is no difference in the level of extra effort generated, effectiveness or satisfaction when managers exhibit management-by-exception (passive). The original analysis (self-ratings included) showed significant differences across hierarchical levels for extra effort when managers exhibited management-by-exception (passive).

There is no difference in the level of extra effort generated, effectiveness or satisfaction when managers exhibit transactional leadership (overall). The original analysis (self-ratings included) showed significant differences across hierarchical levels for extra effort when managers exhibited transactional leadership. Transactional leadership (overall) appears not to be conducive to extra effort at middle-levels with self-ratings omitted. This was not the case in the original analysis. Transactional leadership was not seen to be effective when exhibited by lower-level managers with self-ratings omitted. Transactional leadership (overall) also appears not to be satisfying at middle-levels and lower-levels with self-ratings omitted. Again this was not the case in the original analysis.

There are no differences in the findings for the independent variable 'passive-avoidant leadership' in the relationship it has with the dependent variables 'extra effort', 'leadership effectiveness' and 'follower satisfaction' with self-ratings omitted. In the original analysis, however, with self-ratings included, top-level managers were shown to inhibit extra effort significantly more than senior-level managers when exhibiting passive-avoidant leadership.

9.7.4 The Outcomes of Transformational, Transactional and Laissez-faire Leadership by Time Span (Self-ratings Omitted)

The results for multiple ratings (self-ratings omitted) are the same as for multiple ratings (including self-ratings) for the following behaviours:

- Idealised influence
- Intellectual stimulation
- Individualised consideration
- Transformational leadership (overall)
- *Laissez-faire* leadership
- Active constructive leadership

The results for attributed charisma were slightly different. The original analysis found that managers working to a time span of between two and five years were more satisfying when exhibiting attributed charisma than managers working to a time span of up to three months. The analysis with self-ratings omitted shows the same and in addition that managers working to time spans of between three months and one year and between one and two years are also more satisfying than managers working to a time span of up to three months when exhibiting attributed charisma.

The original analysis of inspirational motivation found no significant differences between correlation coefficients for the three outcome variables. The analysis with self-ratings omitted, however, shows that managers working to a time span of between two and five years are more satisfying when exhibiting inspirational motivation than managers working to time spans of between one and two years and up to three months.

No differences in the results for contingent reward were found in the original analysis. The analysis with self-ratings omitted, however, shows that managers working to a time span of between two and five years are more satisfying than managers working to a time span of between one and two years when exhibiting contingent reward.

No differences in the results for management-by-exception (active) were found in the original analysis. The analysis with self-ratings omitted, however, shows that managers working to a time span of between two and five years are more satisfying than managers working to a time span of between one and two years when exhibiting management-by-exception (active). Management-by-exception (active) appears to be effective and satisfying when exhibited by managers working to a time span of between two and five years with self-ratings omitted. This was not the case in the original analysis with self-ratings included.

No differences in the results for management-by-exception (passive) were found in the original analysis. The analysis with self-ratings omitted, however, shows that managers working to a time span of between three months and one year are more inhibitory to extra effort than managers working to a time span of between one and two years when exhibiting management-by-exception (passive). Management-by-exception (passive) appears to be inhibitory to extra effort when exhibited by managers working to a time span of two to five years with self-ratings omitted. This was not the case in the original analysis with self-ratings included.

Contrary to the original findings with self-ratings included, transactional leadership (overall) appears not to be effective or satisfying when exhibited by managers working to a time span of one to two years.

Contrary to the original findings with self-ratings included, passive-avoidant leadership appears to be inhibitory to extra effort when exhibited by managers working to a time span of two to five years and ineffective and unsatisfying when exhibited by managers working to a time span of five to ten years. The results of z-tests were the same except for passive-avoidant leadership when exhibited by managers working to a time span of three months to a year: passive-avoidant leadership was not found to be significantly more inhibitory to extra effort than when it was exhibited by managers working to a time span of two to five years. In addition, contrary to the original findings with self-ratings included, passive-avoidant leadership was significantly more inhibitory to extra effort when exhibited by managers working to a time span of three months to one year than when exhibited by managers working to a time span of one to two years.

In summary, the results are in line with previous findings in other research (see Furnham and Stringfield, 1998; Harris and Schaubroeck, 1988; Kruger and Dunning, 1999 for reviews) that self-ratings consistently are significantly higher than other-ratings. Furthermore, these results also provide support for the suggestion that method of data collection (rating by self, peer, superior or subordinate) does form part of the complex pattern of results when researching hierarchical level or rank and leadership (Bass, 1998). For example, gathering data from self-ratings does not portray the same picture of leadership across hierarchical levels and time spans as data gathered from others (e.g. superiors, peers and subordinates).

As a result of these findings hierarchical regression analyses were conducted to assess the relative potential moderating effects of the two category variables (level by unanimous opinion and time span of the manager's role) in relation to each other and rating source. Another variable understood to have a potential moderating effect on the data set was organizational size: the range of organizations involved in the research was wide (see table 8.1). Organization size was therefore also included in the hierarchical regression analyses, the results of which are shown below.

9.8 Hierarchical Regression Analysis

The results of the hierarchical regression analyses are presented in table 9.32 and show that the category variable hierarchical level and the variable rating have the strongest moderating effect on independent and dependent variables. The category variable time span had significant moderating effects on two variables – idealised influence and transactional leadership (overall). The results of the regression analyses show the variable 'organizational size' had no moderating effect on independent and dependent variables. Owing to the strong moderating effect of the variable 'rating' the independent and dependent variables were subjected to further analysis by the original category variables (hierarchical level and time span) split by each rating category (self, peer, superior and subordinate). An assessment of differences between each of these perspectives and between these perspectives and the results obtained with the aggregated data set is provided below.

Table 9.32: Results of Hierarchical Regression Analyses for Independent and Dependent Variables by Category Variables

	Organization Size		Hierarchical Level		Time Span		Rating	
	R Square Change	F Change	R Square Change	F Change	R Square Change	F Change	R Square Change	F Change
AC	.00	.15	.07	37.33***	.00	.13	.00	1.03
II	.00	.14	.11	56.36***	.02	8.91**	.03	17.81***
IM	.00	.64	.10	53.82***	.00	2.24	.02	11.78**
IS	.00	.00	.08	39.67***	.00	.13	.04	22.30***
IC	.00	.00	.00	1.69	.00	.28	.11	56.62***
TFL	.00	.04	.09	46.56***	.00	1.94	.05	26.60***
CR	.00	1.39	.03	13.99***	.00	.01	.04	23.09***
MBEA	.00	.28	.02	10.46**	.01	2.94	.00	2.20
MBEP	.01	3.63	.00	.16	.00	2.62	.02	7.66**
TAL	.00	.01	.00	.14	.01	4.09*	.00	.01
LF	.00	.12	.02	10.04**	.00	1.45	.05	24.58***
EE	.00	.00	.08	40.94***	.00	.00	.02	8.04**
EFF	.00	.14	.01	3.53	.00	.02	.02	10.76**
SAT	.00	.52	.00	2.18	.00	.00	.03	13.35***
ACLEAD	.00	.00	.08	42.00***	.00	1.38	.05	28.32***
PALEAD	.00	.74	.00	2.22	.00	2.64	.04	17.59***

N.B. * = P<0.05, ** = P<0.01, *** = P<0.001,

Firstly, however, these new data sets were subjected to factor analysis to ensure they did not breed any alternative factor models to those already identified in section 9.2. The nine leadership behaviours were therefore subjected to an exploratory factor analysis employing the principal components method with a varimax rotation for each different rating source (self, peer, superior and subordinate). Examination of the structures that emerged revealed almost identical solutions to those highlighted in section 9.2. No further independent variables were added to those already used in previous analyses.

9.9 Summary and Comparison of Results for Independent and Dependent Variables for Differing Rating Sources (Self, Peer, Superior and Subordinate) across Hierarchical Levels

A summary of the results regarding the use of independent and dependent variables for each rating source (self, peer, superior and subordinate) by hierarchical level shown in table 9.33. Table 9.33 also compares these results to a summary of the results found using an aggregated data set.

Table 9.33: Summary and Comparison of Results for Independent and Dependent Variables for Differing Rating Sources (Self, Peer, Superior and Subordinate) across Hierarchical Levels

	Aggregated Data	Self-Ratings Only	Peer Ratings Only	Superior Ratings Only	Subordinate Ratings Only
AC	Top Director Senior >* Lower	No Differences	No Differences	Top & Director > Middle Lower Senior > Lower	Top > Middle Lower Director > Senior Middle Lower
II	Top Director Senior Middle > Lower Top > Middle	Top > Director Middle Lower	No Differences	Top & Director, Senior, Middle > Lower	Top > Senior Middle Lower Director > Middle Lower

* Signifies a significantly higher use of the relevant behaviour

Table 9.33 continued

	Aggregated Data	Self-Ratings Only	Peer Ratings Only	Superior Ratings Only	Subordinate Ratings Only
IM	Top Director Senior Middle> Lower Top > Middle	Top > Lower Senior> Middle Lower	Top & Director > Lower Senior > Lower	Top & Director > Lower Senior > Lower	Top > Senior Middle Lower Director > Middle Lower
IS	Top Director Senior > Lower	Top > Lower Senior > Lower	No Differences	Top & Director > Lower Senior > Lower	Top > Lower
IC	Director> Lower	No Differences	No Differences	Middle > Lower	Director > Senior Lower
TFL	Top Director Senior Middle > Lower Top > Senior Middle Director > Middle	Top > Lower Senior > Lower	No Differences	Top & Director, Senior, Middle > Lower	Top > Senior Middle Lower Director> Senior Middle Lower
CR	Top Director Senior Middle > Lower	Senior > Lower	No Differences	Top & Director, Senior, Middle > Lower	No Differences
MBEA	Lower > Top	Lower > Top Senior	No Differences	No Differences	No Differences

Table 9.33 continued

	Aggregated Data	Self-Ratings Only	Peer Ratings Only	Superior Ratings Only	Subordinate Ratings Only
MBEP	No Differences	Top > Senior Lower Director > Senior Lower	No Differences	No Differences	No Differences
TAL	No Differences	No Differences	No Differences	No Differences	No Differences
LF	No Differences	No Differences	No Differences	Lower > Senior	No Differences
ACLEAD	Top Director Senior Middle > Lower	Top > Lower Senior > Lower	No Differences	Top > Senior Middle Lower	Top > Senior Middle Lower Director > Senior Middle Lower
PALEAD	No Differences	Director > Senior	No Differences	No Differences	No Differences
EE	Top > Senior Middle Lower Director Senior > Lower	Top > Director Middle Lower Director, Senior > Lower	No Differences	Senior > Lower	Top > Senior Lower Director > Lower
EFF	No Differences	No Differences	No Differences	Senior > Middle	Director > Top Middle

Table 9.33 continued

	Aggregated Data	Self-Ratings Only	Peer Ratings Only	Superior Ratings Only	Subordinate Ratings Only
SAT	No Differences	No Differences	No Differences	No Differences	Director > Top Senior Middle

N.B. Top-level and director-level categories were merged for peer and superior rating analysis due to small sample sizes.

Table 9.33 shows differing results between ratings (self, peer, superior and subordinate) and aggregated responses for all independent and dependent variables except transactional leadership (overall). There was, however, similarity in results between ratings for the independent variables management-by-exception (active) (peer, superior and subordinate ratings), management-by-exception (passive) (aggregated, peer, superior and subordinate), *laissez-faire* leadership (aggregated, self, peer and subordinate) and passive-avoidant leadership (aggregated, peer, superior and subordinate) and the dependent variables leadership effectiveness (aggregated, self and peer) and follower satisfaction (aggregated, self, peer and superior).

Tables 9.34 to 9.46 summarise the results for the extra effort, effectiveness and satisfaction of each independent variables comparing aggregated data responses and self, peer, superior and subordinate ratings. These tables show slightly different results occurring between aggregated data and different perceptions and between different perceptions themselves for each independent and dependent variable.

Table 9.34: Summary and Comparison of Results for Attributed Charisma by Dependent Variables and Rating Sources (Hierarchical Level)

Dependent Variable	Rating Source	Top-level	Director-level	Senior-level	Middle-level	Lower-level
EE	Aggregated					
EE	Self					
EE	Peer					
EE	Superior					
EE	Subordinate					
EFF	Aggregated					
EFF	Self					
EFF	Peer					
EFF	Superior					
EFF	Subordinate					
SAT	Aggregated					
SAT	Self					
SAT	Peer					
SAT	Superior					
SAT	Subordinate					

N.B. Top-level and director-level categories were merged for peer and superior rating analysis owing to small sample sizes.

☐ Denotes no significant correlation

▒ Denotes significant positive correlation

■ Denotes significant negative correlation

Key:

EE = Extra Effort

EFF = Leadership Effectiveness

SAT = Follower Satisfaction

Table 9.35: Summary and Comparison of Results for Idealised Influence by Dependent Variables and Rating Sources (Hierarchical Level)

Dependent Variable	Rating Source	Top-level	Director-level	Senior-level	Middle-level	Lower-level
EE	Aggregated					
EE	Self					
EE	Peer					
EE	Superior					
EE	Subordinate					
EFF	Aggregated					
EFF	Self					
EFF	Peer					
EFF	Superior					
EFF	Subordinate					
SAT	Aggregated					
SAT	Self					
SAT	Peer					
SAT	Superior					
SAT	Subordinate					

N.B. Top-level and director-level categories were merged for peer and superior rating analysis owing to small sample sizes.

☐ Denotes no significant correlation

■ Denotes significant positive correlation

■ Denotes significant negative correlation

Key:

EE = Extra Effort

EFF = Leadership Effectiveness

SAT = Follower Satisfaction

Table 9.36: Summary and Comparison of Results for Inspirational Motivation by Dependent Variables and Rating Sources (Hierarchical Level)

Dependent Variable	Rating Source	Top-level	Director-level	Senior-level	Middle-level	Lower-level
EE	Aggregated		■	■	■	■
EE	Self		■	■	■	■
EE	Peer	■	■	■	■	■
EE	Superior			■		■
EE	Subordinate		■	■	■	■
EFF	Aggregated		■	■	■	■
EFF	Self		■	■	■	
EFF	Peer	■	■	■	■	■
EFF	Superior			■		■
EFF	Subordinate	■	■	■	■	■
SAT	Aggregated	■	■	■	■	■
SAT	Self		■	■		■
SAT	Peer	■	■	■	■	■
SAT	Superior			■		■
SAT	Subordinate	■	■	■	■	■

N.B. Top-level and director-level categories were merged for peer and superior rating analysis owing to small sample sizes.

□ Denotes no significant correlation

■ Denotes significant positive correlation

■ Denotes significant negative correlation

Key:

EE = Extra Effort

EFF = Leadership Effectiveness

SAT = Follower Satisfaction

Table 9.37: Summary and Comparison of Results for Intellectual Stimulation by Dependent Variables and Rating Sources (Hierarchical Level)

Dependent Variable	Rating Source	Top-level	Director-level	Senior-level	Middle-level	Lower-level
EE	Aggregated					
EE	Self					
EE	Peer					
EE	Superior					
EE	Subordinate					
EFF	Aggregated					
EFF	Self					
EFF	Peer					
EFF	Superior					
EFF	Subordinate					
SAT	Aggregated					
SAT	Self					
SAT	Peer					
SAT	Superior					
SAT	Subordinate					

N.B. Top-level and director-level categories were merged for peer and superior rating analysis owing to small sample sizes.

Denotes no significant correlation

Denotes significant positive correlation

Denotes significant negative correlation

Key:

EE = Extra Effort

EFF = Leadership Effectiveness

SAT = Follower Satisfaction

Table 9.38: Summary and Comparison of Results for Individualised Consideration by Dependent Variables and Rating Sources (Hierarchical Level)

Dependent Variable	Rating Source	Top-level	Director-level	Senior-level	Middle-level	Lower-level
EE	Aggregated	■	■	■	■	■
EE	Self	■	■	■	■	■
EE	Peer	■	■	■	■	■
EE	Superior	□	□	■	□	■
EE	Subordinate	■	■	■	■	■
EFF	Aggregated	■	■	■	■	■
EFF	Self	■	■	□	■	■
EFF	Peer	■	■	■	■	■
EFF	Superior	□	□	■	□	■
EFF	Subordinate	■	■	■	■	■
SAT	Aggregated	■	■	■	■	■
SAT	Self	■	■	■	■	■
SAT	Peer	■	■	■	■	■
SAT	Superior	■	■	■	□	■
SAT	Subordinate	■	■	■	■	■

N.B. Top-level and director-level categories were merged for peer and superior rating analysis owing to small sample sizes.

□ Denotes no significant correlation

■ Denotes significant positive correlation

■ Denotes significant negative correlation

Key:

EE = Extra Effort

EFF = Leadership Effectiveness

SAT = Follower Satisfaction

Table 9.39: Summary and Comparison of Results for Transformational Leadership (Overall) by Dependent Variables and Rating Sources (Hierarchical Level)

Dependent Variable	Rating Source	Top-level	Director-level	Senior-level	Middle-level	Lower-level
EE	Aggregated					
EE	Self					
EE	Peer					
EE	Superior					
EE	Subordinate					
EFF	Aggregated					
EFF	Self					
EFF	Peer					
EFF	Superior					
EFF	Subordinate					
SAT	Aggregated					
SAT	Self					
SAT	Peer					
SAT	Superior					
SAT	Subordinate					

N.B. Top-level and director-level categories were merged for peer and superior rating analysis owing to small sample sizes.

☐ Denotes no significant correlation

■ Denotes significant positive correlation

■ Denotes significant negative correlation

Key:

EE = Extra Effort

EFF = Leadership Effectiveness

SAT = Follower Satisfaction

Table 9.40: Summary and Comparison of Results for Contingent Reward by Dependent Variables and Rating Sources (Hierarchical Level)

Dependent Variable	Rating Source	Top-level	Director-level	Senior-level	Middle-level	Lower-level
EE	Aggregated	■	■	■	■	■
EE	Self	□	■	■	■	■
EE	Peer	■	■	■	■	■
EE	Superior	■	■	■	■	■
EE	Subordinate	■	□	■	■	■
EFF	Aggregated	■	■	■	■	■
EFF	Self	■	□	■	■	■
EFF	Peer	■	■	■	■	■
EFF	Superior	■	■	■	□	■
EFF	Subordinate	■	■	■	■	■
SAT	Aggregated	■	■	■	■	■
SAT	Self	□	□	■	□	■
SAT	Peer	■	■	■	■	■
SAT	Superior	■	■	■	□	■
SAT	Subordinate	■	■	■	■	■

N.B. Top-level and director-level categories were merged for peer and superior rating analysis owing to small sample sizes.

□ Denotes no significant correlation

■ Denotes significant positive correlation

■ Denotes significant negative correlation

Key:

EE = Extra Effort

EFF = Leadership Effectiveness

SAT = Follower Satisfaction

Table 9.41: Summary and Comparison of Results for Management-by-Exception (Active) by Dependent Variables and Rating Sources (Hierarchical Level)

Dependent Variable	Rating Source	Top-level	Director-level	Senior-level	Middle-level	Lower-level
EE	Aggregated				■	
EE	Self					■
EE	Peer					
EE	Superior	■	■			
EE	Subordinate					■
EFF	Aggregated				■	
EFF	Self				■	■
EFF	Peer					
EFF	Superior	■	■			
EFF	Subordinate					
SAT	Aggregated				■	■
SAT	Self				■	■
SAT	Peer					
SAT	Superior					■
SAT	Subordinate					

N.B. Top-level and director-level categories were merged for peer and superior rating analysis owing to small sample sizes.

□ Denotes no significant correlation

■ Denotes significant positive correlation

■ Denotes significant negative correlation

Key:

EE = Extra Effort

EFF = Leadership Effectiveness

SAT = Follower Satisfaction

Table 9.42: Summary and Comparison of Results for Management-by-Exception (Passive) by Dependent Variables and Rating Sources (Hierarchical Level)

Dependent Variable	Rating Source	Top-level	Director-level	Senior-level	Middle-level	Lower-level
EE	Aggregated	■			■	■
EE	Self					
EE	Peer					
EE	Superior				■	■
EE	Subordinate	■		■		■
EFF	Aggregated	■	■	■	■	■
EFF	Self					
EFF	Peer	■	■		■	■
EFF	Superior				■	■
EFF	Subordinate	■	■	■	■	■
SAT	Aggregated	■	■	■	■	■
SAT	Self				■	
SAT	Peer	■	■	■	■	■
SAT	Superior			■	■	■
SAT	Subordinate	■		■	■	■

N.B. Top-level and director-level categories were merged for peer and superior rating analysis owing to small sample sizes.

□ Denotes no significant correlation

■ Denotes significant positive correlation

■ Denotes significant negative correlation

Key:

EE = Extra Effort

EFF = Leadership Effectiveness

SAT = Follower Satisfaction

Table 9.43: Summary and Comparison of Results for Transactional Leadership (Overall) by Dependent Variables and Rating Sources (Hierarchical Level)

Dependent Variable	Rating Source	Top-level	Director-level	Senior-level	Middle-level	Lower-level
EE	Aggregated			■	■	
EE	Self				■	■
EE	Peer			■		
EE	Superior	■	■	■		
EE	Subordinate			■		■
EFF	Aggregated				■	■
EFF	Self			■	■	■
EFF	Peer					
EFF	Superior			■		
EFF	Subordinate				■	
SAT	Aggregated				■	■
SAT	Self					■
SAT	Peer			■		
SAT	Superior					
SAT	Subordinate				■	

N.B. Top-level and director-level categories were merged for peer and superior rating analysis owing to small sample sizes.

□ Denotes no significant correlation

■ Denotes significant positive correlation

■ Denotes significant negative correlation

Key:

EE = Extra Effort

EFF = Leadership Effectiveness

SAT = Follower Satisfaction

Table 9.44: Summary and Comparison of Results for Laissez-faire by Dependent Variables and Rating Sources (Hierarchical Level)

Dependent Variable	Rating Source	Top-level	Director-level	Senior-level	Middle-level	Lower-level
EE	Aggregated	■	■	■	■	■
EE	Self	□	□	□	□	□
EE	Peer	■	■	□	□	□
EE	Superior	□	□	□	■	■
EE	Subordinate	■	□	■	□	□
EFF	Aggregated	■	■	■	■	■
EFF	Self	□	□	□	■	■
EFF	Peer	■	■	■	■	■
EFF	Superior	□	□	□	■	■
EFF	Subordinate	■	□	■	■	■
SAT	Aggregated	■	■	■	■	■
SAT	Self	□	□	□	□	□
SAT	Peer	■	■	■	■	■
SAT	Superior	□	□	■	■	■
SAT	Subordinate	■	□	■	■	■

N.B. Top-level and director-level categories were merged for peer and superior rating analysis owing to small sample sizes.

□ Denotes no significant correlation

■ Denotes significant positive correlation

■ Denotes significant negative correlation

Key:

EE = Extra Effort

EFF = Leadership Effectiveness

SAT = Follower Satisfaction

Table 9.45: Summary and Comparison of Results for Active Constructive Leadership by Dependent Variables and Rating Sources (Hierarchical Level)

Dependent Variable	Rating Source	Top-level	Director-level	Senior-level	Middle-level	Lower-level
EE	Aggregated					
EE	Self					
EE	Peer					
EE	Superior					
EE	Subordinate					
EFF	Aggregated					
EFF	Self					
EFF	Peer					
EFF	Superior					
EFF	Subordinate					
SAT	Aggregated					
SAT	Self					
SAT	Peer					
SAT	Superior					
SAT	Subordinate					

N.B. Top-level and director-level categories were merged for peer and superior rating analysis owing to small sample sizes.

□ Denotes no significant correlation

■ Denotes significant positive correlation

■ Denotes significant negative correlation

Key:

EE = Extra Effort

EFF = Leadership Effectiveness

SAT = Follower Satisfaction

Table 9.46: Summary and Comparison of Results for Passive-avoidant Leadership by Dependent Variables and Rating Sources (Hierarchical Level)

Dependent Variable	Rating Source	Top-level	Director-level	Senior-level	Middle-level	Lower-level
EE	Aggregated	■	■		■	■
EE	Self					
EE	Peer					
EE	Superior				■	■
EE	Subordinate	■		■		■
EFF	Aggregated	■	■	■	■	■
EFF	Self					
EFF	Peer	■	■	■	■	■
EFF	Superior	■	■		■	■
EFF	Subordinate	■		■	■	■
SAT	Aggregated	■	■	■	■	■
SAT	Self				■	
SAT	Peer	■	■	■	■	■
SAT	Superior	■	■	■	■	■
SAT	Subordinate	■		■	■	■

N.B. Top-level and director-level categories were merged for peer and superior rating analysis owing to small sample sizes.

□ Denotes no significant correlation

■ Denotes significant positive correlation

■ Denotes significant negative correlation

Key:

EE = Extra Effort

EFF = Leadership Effectiveness

SAT = Follower Satisfaction

9.9.1 *Predictors of Extra Effort, Leadership Effectiveness and Follower Satisfaction across Hierarchical Levels*

There are no significant predictors of extra effort for lower-level management or of leadership effectiveness at senior-level and middle-level management. There were, however, different groups of predictors at all other hierarchical levels (see Table 9.47). Multiple regression analysis was not conducted for individual ratings (self, peer, superior, subordinate) owing to small sample sizes for categories of hierarchical level.

Table 9.47: Summary of Predictors of Extra Effort, Leadership Effectiveness and Follower Satisfaction by Hierarchical Level

Dependent Variable	Top-level and Director-level	Senior-level	Middle-level	Lower-level
Extra Effort	IS (+)* LF (-)	IM (+) IC (+)	AC (+) IS (+)	
Leadership Effectiveness	IC (+) CR (+)			AC (+) II (-) IM (-) IC (+) CR (+) MBEA (+) LF (-)
Follower Satisfaction	AC (+) IC (+)	AC (+) IC (+)	IC (+) MBEA (+)	AC (+) IC (+)

* The symbols in parentheses denote a positive (+) or negative (-) predictor

Denotes *no* significant predictors

9.10 Summary and Comparison of Results for Independent and Dependent Variables for Differing Rating Sources (Self, Peer, Superior and Subordinate) across Time Spans

A summary of the results regarding the use of independent and dependent variables for each perception (self, peer, superior and subordinate) by time span of the manager's role is shown in table 9.48. Table 9.48 also compares these results to a summary of the results found using an aggregated data set.

Table 9.48: Summary and Comparison of Results for Independent and Dependent Variables for Differing Rating Sources (Self, Peer, Superior and Subordinate) across Time Spans

	Aggregated Data	Self-Ratings Only	Peer Ratings Only	Superior Ratings Only	Subordinate Ratings Only
AC	1-2yrs > 3mnths	No Differences	No Differences	1-2yrs > 3mnths	2-5yrs > 3mnths
II	1-2yrs 2-5yrs > 3mnths	No Differences	No Differences	1-2yrs > 3mnths	2-5yrs > 3mnths
IM	2-5yrs > 3mnths	No Differences	No Differences	1-2yrs 2-5yrs > 3mnths	2-5yrs > 3mnths-1yr
IS	1-2yrs > 3mnths	3mnths-1yr 1-2yrs > 3mnths	No Differences	1-2yrs 2-5yrs > 3mnths	No differences
IC	No Differences	No Differences	No Differences	No Differences	No Differences
TFL	3mnths-1yr 1-2yrs 2-5yrs > 3mnths	2-5yrs > 3mnths	No Differences	1-2yrs 2-5yrs > 3mnths	No Differences
CR	No Differences	No Differences	No Differences	No Differences	No Differences

Table 9.48 continued

	Aggregated Data	Self-Ratings Only	Peer Ratings Only	Superior Ratings Only	Subordinate Ratings Only
MBEA	No Differences	No Differences	No Differences	No Differences	No Differences
MBEP	No Differences	No Differences	No Differences	No Differences	No Differences
TAL	No Differences	No Differences	No Differences	No Differences	No Differences
LF	No Differences	No Differences	No Differences	No Differences	No Differences
ACLEAD	3mnths-1yr 1-2yrs 2-5yrs > 3mnths	2-5yrs > 3mnths	No Differences	1-2yrs > 3mnths	No Differences
PALEAD	No Differences	No Differences	No Differences	No Differences	No Differences
EE	3mnths-1yr > 3mnths	3mnths-1yr 2-5yrs > 3mnths	No Differences	No Differences	No Differences
EFF	No Differences	No Differences	No Differences	No Differences	No Differences
SAT	No Differences	No Differences	No Differences	No Differences	No Differences

Table 9.48 shows differing results for different rating sources (self, peer, superior and subordinate) and for aggregated responses for the independent variables attributed charisma, idealised influence, inspirational motivation, intellectual stimulation, transformational leadership (overall) and active constructive leadership and for the dependent variable extra effort. There was, however, similarity in results between certain rating sources for all these variables. For example in some cases self and peer ratings produced the same results and in others the results for peer and subordinate ratings were the same. The results were the same across all perceptions including the aggregated data set for the independent variables

individualised consideration, contingent reward, management-by-exception (active), management-by-exception (passive), transactional leadership (overall), *laissez-faire* leadership and passive-avoidant leadership and for the dependent variables leadership effectiveness and follower satisfaction.

Tables 9.49 to 9.61 summarise the results for extra effort, effectiveness and satisfaction for each independent variable, comparing aggregated ratings and self, peer, superior and subordinate ratings. These tables show slightly different results between aggregated ratings and other ratings sources for each independent and dependent variable, with the exception of extra effort for attributed charisma, transformational leadership (overall) and active constructive leadership, effectiveness for intellectual stimulation, individualised consideration, transactional leadership (overall) and active constructive leadership and satisfaction for transactional leadership (overall), where the results were the same for all rating sources.

Table 9.49: Summary and Comparison of Results for Attributed Charisma by Dependent Variables and Rating Sources (Time Span)

Dependent Variable	Rating Source	Two years and under five years	One year and under two years	Three months and under one year	Up to three months
EE	Aggregated				
EE	Self				
EE	Peer				
EE	Superior				
EE	Subordinate				
EFF	Aggregated				
EFF	Self				
EFF	Peer				
EFF	Superior				
EFF	Subordinate				
SAT	Aggregated				
SAT	Self				
SAT	Peer				
SAT	Superior				
SAT	Subordinate				

Denotes no significant correlation

Denotes significant positive correlation

Denotes significant negative correlation

Key:

EE = Extra Effort

EFF = Leadership Effectiveness

SAT = Follower Satisfaction

Table 9.50: Summary and Comparison of Results for Idealised Influence by Dependent Variables and Rating Sources (Time Span)

Dependent Variable	Rating Source	Two years and under five years	One year and under two years	Three months and under one year	Up to three months
EE	Aggregated	■	■	■	■
EE	Self	■	■	■	■
EE	Peer	■	■		
EE	Superior	■	■	■	■
EE	Subordinate	■	■	■	■
EFF	Aggregated	■	■	■	■
EFF	Self	■	■		■
EFF	Peer	■	■		■
EFF	Superior	■	■	■	■
EFF	Subordinate	■	■	■	■
SAT	Aggregated	■	■	■	■
SAT	Self	■	■		■
SAT	Peer		■		■
SAT	Superior	■	■	■	■
SAT	Subordinate	■	■	■	■

□ Denotes no significant correlation

■ Denotes significant positive correlation

■ Denotes significant negative correlation

Key:

EE = Extra Effort

EFF = Leadership Effectiveness

SAT = Follower Satisfaction

Table 9.51: Summary and Comparison of Results for Inspirational Motivation by Dependent Variables and Rating Sources (Time Span)

Dependent Variable	Rating Source	Two years and under five years	One year and under two years	Three months and under one year	Up to three months
EE	Aggregated	■	■	■	■
EE	Self	■	■	■	■
EE	Peer	■	■	■	
EE	Superior	■	■	■	■
EE	Subordinate	■	■	■	■
EFF	Aggregated	■	■	■	■
EFF	Self	■	■		■
EFF	Peer	■	■	■	■
EFF	Superior	■	■	■	■
EFF	Subordinate	■	■	■	■
SAT	Aggregated	■	■	■	■
SAT	Self		■		■
SAT	Peer	■	■	■	■
SAT	Superior	■	■	■	■
SAT	Subordinate	■	■	■	■

□ Denotes no significant correlation

■ Denotes significant positive correlation

■ Denotes significant negative correlation

Key:

EE = Extra Effort

EFF = Leadership Effectiveness

SAT = Follower Satisfaction

Table 9.52: Summary and Comparison of Results for Intellectual Stimulation by Dependent Variables and Rating Sources (Time Span)

Dependent Variable	Rating Source	Two years and under five years	One year and under two years	Three months and under one year	Up to three months
EE	Aggregated				
EE	Self				
EE	Peer				
EE	Superior				
EE	Subordinate				
EFF	Aggregated				
EFF	Self				
EFF	Peer				
EFF	Superior				
EFF	Subordinate				
SAT	Aggregated				
SAT	Self				
SAT	Peer				
SAT	Superior				
SAT	Subordinate				

Denotes no significant correlation

Denotes significant positive correlation

Denotes significant negative correlation

Key:

EE = Extra Effort

EFF = Leadership Effectiveness

SAT = Follower Satisfaction

Table 9.53: Summary and Comparison of Results for Individualised Consideration by Dependent Variables and Rating Sources (Time Span)

Dependent Variable	Rating Source	Two years and under five years	One year and under two years	Three months and under one year	Up to three months
EE	Aggregated	■	■	■	■
EE	Self	■	■	□	■
EE	Peer	■	■	■	■
EE	Superior	■	■	■	■
EE	Subordinate	■	■	■	■
EFF	Aggregated	■	■	■	■
EFF	Self	■	■	■	■
EFF	Peer	■	■	■	■
EFF	Superior	■	■	■	■
EFF	Subordinate	■	■	■	■
SAT	Aggregated	■	■	■	■
SAT	Self	■	■	□	■
SAT	Peer	■	■	■	■
SAT	Superior	■	■	■	■
SAT	Subordinate	■	■	■	■

□ Denotes no significant correlation

■ Denotes significant positive correlation

■ Denotes significant negative correlation

Key:

EE = Extra Effort

EFF = Leadership Effectiveness

SAT = Follower Satisfaction

Table 9.54: Summary and Comparison of Results for Transformational Leadership (Overall) by Dependent Variables and Rating Sources (Time Span)

Dependent Variable	Rating Source	Two years and under five years	One year and under two years	Three months and under one year	Up to three months
EE	Aggregated				
EE	Self				
EE	Peer				
EE	Superior				
EE	Subordinate				
EFF	Aggregated				
EFF	Self				
EFF	Peer				
EFF	Superior				
EFF	Subordinate				
SAT	Aggregated				
SAT	Self				
SAT	Peer				
SAT	Superior				
SAT	Subordinate				

Denotes no significant correlation

Denotes significant positive correlation

Denotes significant negative correlation

Key:

EE = Extra Effort

EFF = Leadership Effectiveness

SAT = Follower Satisfaction

Table 9.55: Summary and Comparison of Results for Contingent Reward by Dependent Variables and Rating Sources (Time Span)

Dependent Variable	Rating Source	Two years and under five years	One year and under two years	Three months and under one year	Up to three months
EE	Aggregated	■	■	■	■
EE	Self	■	■	■	■
EE	Peer	■	■	□	□
EE	Superior	■	■	■	■
EE	Subordinate	■	■	■	■
EFF	Aggregated	■	■	■	■
EFF	Self	□	■	□	■
EFF	Peer	■	■	■	■
EFF	Superior	■	■	■	■
EFF	Subordinate	■	■	■	■
SAT	Aggregated	■	■	■	■
SAT	Self	□	■	□	■
SAT	Peer	■	■	■	■
SAT	Superior	■	■	■	■
SAT	Subordinate	■	■	■	■

□ Denotes no significant correlation

■ Denotes significant positive correlation

■ Denotes significant negative correlation

Key:

EE = Extra Effort

EFF = Leadership Effectiveness

SAT = Follower Satisfaction

Table 9.56: Summary and Comparison of Results for Management-by-Exception (Active) by Dependent Variables and Rating Sources (Time Span)

Dependent Variable	Rating Source	Two years and under five years	One year and under two years	Three months and under one year	Up to three months
EE	Aggregated				
EE	Self				
EE	Peer				
EE	Superior				
EE	Subordinate				
EFF	Aggregated				
EFF	Self				
EFF	Peer				
EFF	Superior				
EFF	Subordinate				
SAT	Aggregated				
SAT	Self				
SAT	Peer				
SAT	Superior				
SAT	Subordinate				

Denotes no significant correlation

Denotes significant positive correlation

Denotes significant negative correlation

Key:

EE = Extra Effort

EFF = Leadership Effectiveness

SAT = Follower Satisfaction

Table 9.57: Summary and Comparison of Results for Management-by-Exception (Passive) by Dependent Variables and Rating Sources (Time Span)

Dependent Variable	Data Source	Two years and under five years	One year and under two years	Three months and under one year	Up to three months
EE	Aggregated			■	
EE	Self				
EE	Peer				
EE	Superior	■		■	
EE	Subordinate		■	■	■
EFF	Aggregated	■	■	■	■
EFF	Self		■		
EFF	Peer	■	■	■	■
EFF	Superior	■	■	■	■
EFF	Subordinate	■	■	■	■
SAT	Aggregated	■	■	■	■
SAT	Self				
SAT	Peer	■	■	■	■
SAT	Superior	■		■	■
SAT	Subordinate	■	■	■	■

□ Denotes no significant correlation

■ Denotes significant positive correlation

■ Denotes significant negative correlation

Key:

EE = Extra Effort

EFF = Leadership Effectiveness

SAT = Follower Satisfaction

Table 9.58: Summary and Comparison of Results for Transactional Leadership (Overall) by Dependent Variables and Rating Sources (Time Span)

Dependent Variable	Rating Source	Two years and under five years	One year and under two years	Three months and under one year	Up to three months
EE	Aggregated	■	■		
EE	Self		■		■
EE	Peer		■		
EE	Superior				■
EE	Subordinate	■	■		
EFF	Aggregated	■	■		
EFF	Self		■		■
EFF	Peer				
EFF	Superior				
EFF	Subordinate			■	
SAT	Aggregated	■	■		
SAT	Self		■		■
SAT	Peer				
SAT	Superior				
SAT	Subordinate			■	

□ Denotes no significant correlation

■ Denotes significant positive correlation

■ Denotes significant negative correlation

Key:

EE = Extra Effort

EFF = Leadership Effectiveness

SAT = Follower Satisfaction

Table 9.59: Summary and Comparison of Results for Laissez-faire by Dependent Variables and Rating Sources (Time Span)

Dependent Variable	Rating Source	Two years and under five years	One year and under two years	Three months and under one year	Up to three months
EE	Aggregated	■	■	■	
EE	Self		■		
EE	Peer		■	■	
EE	Superior	■	■		
EE	Subordinate	■	■	■	■
EFF	Aggregated	■	■	■	■
EFF	Self		■		■
EFF	Peer	■	■	■	■
EFF	Superior	■	■	■	■
EFF	Subordinate	■	■	■	■
SAT	Aggregated	■	■	■	■
SAT	Self		■		
SAT	Peer	■	■	■	■
SAT	Superior	■	■	■	■
SAT	Subordinate	■	■	■	■

□ Denotes no significant correlation

■ Denotes significant positive correlation

■ Denotes significant negative correlation

Key:

EE = Extra Effort

EFF = Leadership Effectiveness

SAT = Follower Satisfaction

Table 9.60: Summary and Comparison of Results for Active Constructive Leadership by Dependent Variables and Rating Sources (Time Span)

Dependent Variable	Rating Source	Two years and under five years	One year and under two years	Three months and under one year	Up to three months
EE	Aggregated				
EE	Self				
EE	Peer				
EE	Superior				
EE	Subordinate				
EFF	Aggregated				
EFF	Self				
EFF	Peer				
EFF	Superior				
EFF	Subordinate				
SAT	Aggregated				
SAT	Self				
SAT	Peer				
SAT	Superior				
SAT	Subordinate				

Denotes no significant correlation

Denotes significant positive correlation

Denotes significant negative correlation

Key:

EE = Extra Effort

EFF = Leadership Effectiveness

SAT = Follower Satisfaction

Table 9.61: Summary and Comparison of Results for Passive-avoidant Leadership by Dependent Variables and Rating Sources (Time Span)

Dependent Variable	Rating Source	Two years and under five years	One year and under two years	Three months and under one year	Up to three months
EE	Aggregated		■	■	
EE	Self		■		
EE	Peer		■	■	
EE	Superior	■		■	
EE	Subordinate	■	■	■	■
EFF	Aggregated	■	■	■	■
EFF	Self		■		■
EFF	Peer	■	■	■	■
EFF	Superior	■	■	■	■
EFF	Subordinate	■	■	■	■
SAT	Aggregated	■	■	■	■
SAT	Self		■		
SAT	Peer	■	■	■	■
SAT	Superior	■	■	■	■
SAT	Subordinate	■	■	■	■

□ Denotes no significant correlation

■ Denotes significant positive correlation

■ Denotes significant negative correlation

Key:

EE = Extra Effort

EFF = Leadership Effectiveness

SAT = Follower Satisfaction

9.10.1 Summary of the Predictors of Extra Effort, Leadership Effectiveness and Follower Satisfaction across Time Spans

There are no significant predictors of extra effort and leadership effectiveness for managers working to time spans of two years and over. There were, however, different groups of predictors for all other time spans (see Table 9.62). Multiple regression analysis was not conducted for individual ratings (self, peer, superior, subordinate) owing to small sample sizes for time span categories.

Table 9.62: Significant Predictors of Extra Effort, Leadership Effectiveness and Follower Satisfaction by Time Span

Dependent Variable	Two years and over	One year to two Years	Three months to a year	Up to three months
Extra Effort		IC (+)* MBEP (+)	AC (+)	AC (+)
Leadership Effectiveness		AC (+) IS (-) IC (+) CR (+)	IC (+) LF (-)	AC (+) IM (-) CR (+) LF (-)
Follower Satisfaction	AC (+)	AC (+) IC (+) CR (+) LF (-)	IC (+)	LF (-)

* The symbols in parentheses denote a positive (+) or negative (-) predictor

Denotes *no* significant predictors

9.11 Comparison of Results for the Two Category Variables: Hierarchical Level and Time Span

According to Stratified Systems Theory (SST), an increase hierarchical level is associated with an increase in time span (Brown and Jaques, 1965; Jacobs and

Jaques, 1987; Jaques, 1976, 1989, 1990; Jaques and Clement, 1991). There is therefore expected to be a similarity in the results concerning the use and effectiveness of leadership behaviours between hierarchical levels and time span.

The results concerning the use of transformational, transactional and *laissez-faire* leadership are similar for the two category variables – hierarchical level and time span - used in this research. For example, both lower-level managers and managers working to a time span of up to three months use transformational leadership behaviours less than higher-level managers and managers working to higher time spans respectively. Furthermore, the use of both transactional and *laissez-faire* leadership behaviours appears not to differ across hierarchical levels or time spans. There also seems to be a similarity in results between the two category variables, hierarchical level and time span, in the use of active constructive leadership and passive-avoidant leadership.

SST, however, is a prescriptive theory, not a descriptive theory. Descriptive theories explain what leaders do (e.g. the use of leadership behaviours across hierarchical level or time spans) whereas prescriptive theories explain what effective leaders *should* do (Yukl, 2002). On this basis, closer similarity was expected in the results with regard to the three dependent variables – extra effort, leadership effectiveness and follower satisfaction – across hierarchical levels and time spans than for the findings concerning the use of leadership behaviours.

Indeed there is similarity in results between hierarchical level and time span with regard to the dependent variable extra effort. For example, all transformational leadership behaviours are conducive to extra effort, effective, and satisfying at all time spans. In comparison all transformational leadership behaviours with the exception of idealised influence and inspirational motivation are conducive to extra effort, effective, and satisfying at all hierarchical levels. Idealised influence appears not to be conducive to extra effort, and inspirational motivation appears not to be conducive to extra effort or effective, when used by top-level managers. Time spans more relevant to top-level managers (over five years), however, were not included in the analysis owing to small sample sizes, which may explain this misalignment.

The results concerning extra effort, effectiveness and satisfaction of transactional leadership (overall), however, show little similarity between category variables. For example, transactional leadership (overall) appears to be conducive to extra effort when exhibited by senior-level managers, conducive to extra effort, effective and satisfying when exhibited by middle-level managers, and effective and satisfying when exhibited by lower-level managers; but in comparison it appears to be conducive to extra effort, effective and satisfying only at the highest time spans. Again this may have been due to the time spans used in the research being related more to senior-level, middle-level and lower-level managers than to director-level and top-level managers. It was expected, however, that transactional leadership (overall) would have been conducive to extra effort, effective and satisfying at the lower time spans.

Laissez-faire leadership appears to be inhibitory to extra effort when exhibited by lower-level managers, yet it was not inhibitory when exhibited by managers working to time spans of up to three months. The results, however, were the same for both category variables for effectiveness and satisfaction.

There is also a similarity of findings between the two category variables for active constructive leadership, which appears to be conducive to extra effort, effective and satisfying when exhibited by managers at all hierarchical levels and working to all time spans. In addition, passive-avoidant leadership produced similar results for both category variables. This set of leadership behaviours appears to be ineffective and unsatisfying when exhibited by managers at all hierarchical levels and working to all time spans. There is, however, a difference with regard to the dependent variable, extra effort. Passive-avoidant leadership was found to be inhibitory to extra effort when exhibited by managers at all levels except for those at senior-levels, whereas it is found to be inhibitory to extra effort when exhibited by managers working to time spans of between three months and two years. It was found to be neither inhibitory nor conducive to extra effort when exhibited by managers working to higher or lower time spans than the ones stated above.

With regard to predictors of extra effort, leadership effectiveness and follower satisfaction, there appears to be little similarity between hierarchical level and time

span. Corresponding hierarchical level and time spans (e.g. lower-level managers and up to three months time span) do not have the same groups of predictors. Some individual predictors, however, are the same for corresponding categories of hierarchical level and time span. For example, attributed charisma and contingent reward are both positive predictors, and inspirational motivation and *laissez-faire* leadership are both negative predictors, of leadership effectiveness for lower-level managers and the corresponding time span up to three months. Furthermore, attributed charisma is a positive predictor of extra effort, and individualised consideration is a positive predictor of follower satisfaction, for middle-level managers and for managers working to a time span of three months to one year. Lastly, individualised consideration is a positive predictor of extra effort, and attributed charisma and individualised consideration are positive predictors of follower satisfaction, for senior-level managers and managers working to a time span of one to two years.

All similar individual predictors are at senior-level management or below and at time spans of below two years. The comparison of predictors of extra effort, effectiveness and satisfaction therefore supports the view that the lack of data for time spans more relevant to higher-level (top-level and director-level) managers may explain the misalignment of the two category variables.

There was, therefore, similarity between hierarchical level and time span, particularly in respect of transformational leadership behaviours, contingent reward and *laissez-faire* leadership. This was not true, however, for transactional leadership (overall) and active management-by-exception.

The discussion in this section of the thesis is based on results gained from aggregated data. The analysis of individual ratings (self, peer, superior and subordinate) produces differing results, as can be seen in tables 9.34 to 9.46 and tables 9.49 to 9.61 and will be discussed more in the next chapter.

The next chapter relates the research findings to the experimental hypotheses set out in chapter five and discusses the findings in relation to previous research and theory in this area and in the more general leadership literature.

Chapter 10

Discussion of Research Findings

10.1 Outline of the Chapter

In this chapter the research hypotheses are accepted or rejected according to the results of the research. Secondly, the chapter highlights implications of the research finings for the 'Full Range Leadership' model, general leadership theory, and leadership and management development, and it proposes some working models of transformational and transactional leadership across hierarchical levels in organizations. Finally, the chapter reviews the methodology, data collection methods and analysis used, and discusses the validity of the research.

10.2 Acceptance or Rejection of Research Hypotheses

The hypotheses were accepted or rejected according to evidence provided by the results of the research. Summaries, conclusions and details of constituent elements or dimensions of transformational and transactional leadership are provided in sections 10.3.1 and 10.3.2.

H1 = Transformational leadership behaviour is exhibited more by managers at higher hierarchical levels in organizations than by managers at lower hierarchical levels.

The analysis of aggregated data shows that the use of transformational leadership (overall) increases at higher hierarchical levels and longer time spans regardless of whether or not self-ratings are included in the analysis. The results also show that the use of each constituent dimension of transformational leadership (attributed charisma, idealised influence, inspirational motivation, intellectual stimulation and individualised consideration) increases at higher hierarchical levels and longer time spans (except individualised consideration across time spans). Separate analyses

concerning differing rating sources (self, peer, superior and subordinate) provide similar results. Evidence is therefore provided to accept hypothesis one.

H2 = Transactional leadership is exhibited to the same extent by managers at all hierarchical levels in organizations.

The analysis of aggregated data shows no difference in the use of transactional leadership (overall) across hierarchical levels or time spans regardless of whether or not self-ratings are included in the analysis. Separate analyses concerning differing rating sources (self, peer, superior and subordinate) provide similar results. Evidence is therefore provided to accept hypothesis two.

H3 = Laissez-faire leadership is exhibited to the same extent by managers at all hierarchical levels in organizations.

The analysis of aggregated data shows no difference in the use of *laissez-faire* leadership across hierarchical levels and time spans regardless of whether or not self-ratings are included in the analysis. Separate analyses concerning differing rating sources (self, peer and subordinate) provide similar results with the exception of superior ratings, which show more *laissez-faire* leadership exhibited by lower-level managers than by senior-level managers. Hypothesis three therefore is largely supported.

H4 = Transformational leadership is effective to the same extent when exhibited by managers at all hierarchical levels in organizations.

Hypothesis four was accepted. The analysis of aggregated data shows that transformational leadership (overall) is effective, satisfying, and conducive to extra effort at all hierarchical levels and time spans regardless of whether or not self-ratings were included in the analysis. Separate analyses concerning differing rating sources (self, peer and subordinate) provide similar results with the exception of superior ratings. According to superior ratings transformational leadership is not related to the dependent variable effectiveness when exhibited by middle-level managers. Furthermore, results from the analysis of differing rating sources (self, peer, superior and subordinate) concerning the constituent dimensions of

transformational leadership (attributed charisma, idealised influence, inspirational motivation, intellectual stimulation and individualised consideration) are not as uniform as the results gained from aggregated ratings. Some of the five constituent dimensions of transformational leadership were found to be not consistently related to the three dependent variables extra effort, leadership effectiveness or follower satisfaction at some hierarchical levels (see tables 9.34 to 9.38 in the previous chapter of this thesis). Intellectual stimulation was the only independent variable related to extra effort at all hierarchical levels regardless of rating source (self, peer, superior and subordinate). Z-tests were not performed for transformational leadership (overall), as it did not satisfy parametric assumptions, so significant differences in effectiveness may have been found by z-tests if transformational leadership (overall) had done so.

H5 = Transactional leadership is effective to the same extent when exhibited by lower and middle-level managers in organizations but decreases in effectiveness when exhibited by managers at more senior levels in organizations.

The analysis of aggregated data shows that transactional leadership overall is conducive to extra effort when exhibited by senior-level managers but not effective or satisfying. Conversely, this type of leadership is effective and satisfying when exhibited by lower-level managers but not conducive to extra effort. It is conducive to extra effort, effective and satisfying, however, when exhibited by middle-level managers. Transactional leadership (overall) is not conducive to extra effort, effective or satisfying when exhibited by director-level and top-level managers.

The omission of self-ratings from the analysis affected the results for extra effort, effectiveness and satisfaction associated with transactional leadership (overall) across hierarchical levels and time spans. Transactional leadership (overall) is not conducive to extra effort at middle-levels when self-ratings are omitted. This was not the case in the original analysis. Transactional leadership is not seen to be effective when exhibited by lower-level managers when self-ratings are omitted. And transactional leadership (overall) is also not seen to be satisfying at middle-level and lower levels with self-ratings omitted. Again this was not the case in the original analysis. Furthermore, contrary to the original findings with self-ratings included,

transactional leadership (overall) is not seen to be effective or satisfying when exhibited by managers working to a time span of one to two years.

Analysis concerning self-ratings and subordinate ratings provided results similar to those for aggregated ratings. There are, however, slightly differing results from the analysis concerning peer-ratings and superior-ratings. Analysis with only peer-ratings shows transactional leadership to be conducive to extra effort and follower satisfaction only when exhibited by senior-level managers. Analysis with only superior-ratings shows transactional leadership to be conducive to extra effort when exhibited by top-level and director-level managers (combined owing to low sample sizes) and senior-level managers and effective when exhibited by senior-level managers. There are therefore contradictory results for transactional leadership and its relation to extra effort, leadership effectiveness and follower satisfaction when viewed from differing rating sources.

Furthermore, the results for time span show transactional leadership (overall) to be conducive to extra effort, effective and satisfying at time spans of one year and above but not at time spans below one year. In addition, the results from differing rating sources (self, peer, superior and subordinate) produced varied results (see tables 9.43 and 9.58 in the previous chapter).

It seems that managers at middle-level and lower-levels rating themselves see transactional leadership (overall) as more conducive to extra effort, more effective and more satisfying than others who rate them do. This may be because managers at these levels believe they should be setting objectives, monitoring performance and rewarding people. Others around these managers, however, apparently do not see these behaviours as necessary for extra effort, effectiveness and satisfaction at all for lower-level managers and only effective for middle-level managers.

This is an important finding for it supports the assumption that ratings of leadership systematically differ, depending on who provides the rating (Antonakis, *et al.*, 2003). The research concerning this assumption, however, has concentrated on perceptual or value differences between bosses and subordinates (Alimo-Metcalfe, 1996; Borman, 1974; Bradley, 1978; Colvin, 2001; Ilgen and Feldman, 1983; Salam *et al.*, 1997). For example, Alimo-Metcalfe (1996) suggests that superiors tend to focus on

technical managerial skills, such as decision making and problem solving, whereas subordinates are more concerned with interpersonal skills, sensitivity, empowerment and visionary leadership. Salam and colleagues (1997) also found that challenging the *status quo* (an integral part of intellectual stimulation) and encouraging independent action are viewed by bosses as negatively related to performance while subordinates viewed them as positively related. This research suggests that there are also differences between what managers themselves perceive or value as effective and what other people view as effective. This has implications for leadership development. For example, a manager may be using behaviours that they feel are effective but others around them do not. 360-degree assessment and feedback is a useful means for managers to check that their perceptions tally with those around them.

Furthermore, evidence is provided from the results to support suggestions by some scholars (Alimo-Metcalfe, 1996; Salam *et al.*, 1997) that superiors and subordinates view different behaviours as effective. This research suggests, however, that the views not only differ between superiors and subordinates but also between superiors and peers. In addition, this difference in perception seems to occur more readily with transactional leadership (overall) than with transformational leadership (overall). There is no support, however, for the suggestion that challenging the *status quo* (an integral part of intellectual stimulation) and encouraging independent action are viewed by bosses as negatively related to performance and subordinates view them as positively related (Salam *et al.*, 1997).

Owing to the varied nature of results for the extra effort, effectiveness and satisfaction of transactional leadership (overall) across hierarchical levels and time spans, hypothesis five therefore was only partially accepted.

H6 = Laissez-faire leadership is ineffective to the same extent when exhibited by managers at all hierarchical levels in organizations.

The results show *laissez-faire* leadership to be inhibitory to extra effort, ineffective and unsatisfying when exhibited by managers at all hierarchical levels, with or without self-ratings included in the analysis. The results also show that *laissez-faire* leadership is inhibitory to extra effort, ineffective and unsatisfying at all time spans

(except that it was not inhibitory to extra effort when exhibited by managers working to a time span of up to three months).

It is also noted that *laissez-faire* leadership was not inhibitory to extra effort when exhibited by managers working to a time span of up to three months. This may show *laissez-faire* behaviour to be time-related in its effect. For example, at such a short time span as up to three months followers may not be adversely affected by this type of behaviour (bearing in mind, however, that *laissez-faire* leadership is ineffective and unsatisfying when exhibited by managers working to a time span of up to three months). If the behaviour continues over longer time periods, however, followers may then start to notice and become less motivated.

In addition, the results of the analysis concerning differing rating sources (self, peer, superior and subordinate) are varied. For example, *laissez-faire* leadership is not viewed by superiors as either effective or ineffective when exhibited by top-level and director-level managers (combined – see earlier note) and senior-level managers (n.b. some top-level managers were rated by a superior). Owing to these findings hypothesis six was only partially accepted.

In summary, hypotheses one, two, three and four were fully accepted and hypotheses five and six were partially accepted. In a number of cases we have seen that results from analysis of individual rating sources (self, peer, superior and subordinate) differ from those from analysis of the aggregated data. These differences are further explored in the following sections of the thesis.

10.3 Comparison with Previous Research and Theory Concerning the Use and Effectiveness of the 'Full Range Leadership' Model across Hierarchical Levels

The research provides evidence for differences in the use of transformational leadership and in the effectiveness of transactional leadership across hierarchical levels and time spans. In terms of 'symmetry of potential outcomes' (Gill and Johnson, 1997) discussed in chapter five, the research findings provide evidence to reject the suggestion that 'human skills', which include leadership skills, remain constant across organizational hierarchical levels (cf. Katz, 1974). This suggests

that leadership is not solely a 'human skill' but interacts with the other two skills as categorized by Katz. This makes sense, for example, if a person coaches another person on the technical skills of a specific job then this relates to a combination of 'human' and 'technical' skills.

Differences across hierarchical levels and time spans were found for the use and effectiveness of some leadership dimensions. In the remainder of this chapter, the results of the research are compared to previous research findings for each dimension of transformational, transactional and *laissez-faire* leadership, and implications for theory development are discussed.

10.3.1 Transformational Leadership: Attributed Charisma, Idealised Influence, Inspirational Motivation, Intellectual Stimulation and Individualised Consideration

The findings of the research support previous findings that transformational leadership is more prevalent at upper levels in organizations (Bass *et al.*, 1987; Oshagbemi and Gill, 2004). This was also the case according to the analysis of individual rating sources (self, peer, superior and subordinate), with two exceptions: peer ratings in relation to hierarchical level, and peer and subordinate ratings in relation to time span. No differences in the use of transformational leadership overall were found between hierarchical levels or between time spans based on these ratings.

The findings also support previous findings that transformational leadership is consistently effective at all hierarchical levels (Lowe *et al.*, 1996). This was also the case for individual rating sources (self, peer, superior and subordinate). However, one must attach a caveat to results that concern the effectiveness of transformational leadership across hierarchical levels. Although hypothesis four was accepted, it must be noted that there are differences in extra effort, effectiveness and satisfaction for some components of transformational leadership across hierarchical levels (namely idealised influence and inspirational motivation) and time spans (namely attributed charisma and individualised consideration). Indeed, idealised influence appears not to be conducive to extra effort, and inspirational

motivation appears not to be conducive to extra effort or effective, when exhibited by top-level managers. This provides evidence to support the suggestion by Sinha (1995) that the effectiveness of transformational leadership may differ between hierarchical levels in organizations.

This was also found when individual rating sources (self, peer, superior and subordinate) were analysed, with the exception of peer ratings for hierarchical level and superior and subordinate ratings for time span.

The analysis of self-ratings found the following behaviours to be conducive to extra effort, effective and satisfying when exhibited by managers at the stated hierarchical levels and with the stated time spans:

- Attributed charisma
  - director-level, senior-level (effective only), middle-level and lower-level
  - up to three months and (for extra effort only) between three months and one year, between one and five years
- Idealised influence
  - director-level, senior-level (conducive to extra effort and effective only), middle-level and lower-level
  - up to three months and (for extra effort only) between three months and one year, between one and five years
- Inspirational motivation
  - director-level, senior-level, middle-level (conducive to extra effort and effective only) and lower-level (conducive to extra effort and satisfying only)
  - up to three months, between three months and one year (conducive to extra effort only), between one year and two years and between two and five years (conducive to extra effort and effective only)
- Intellectual stimulation
  - top-level, director-level, senior-level (conducive to extra effort and effective only), middle-level (conducive to extra effort and effective only) and lower-level

- up to three months, between three months and one year (conducive to extra effort and effective only), between one year and two years and between two and five years (conducive to extra effort and effective only)

- Individualised consideration
  - top-level, director-level, senior-level (conducive to extra effort and satisfying only), middle-level, and lower-level
  - up to three months, three months to one year (effective only), between one year and five years

The analysis of peer ratings found the following behaviours conducive to extra effort, effective and satisfying when exhibited by managers at the stated hierarchical levels and with the stated time spans:

- Attributed charisma
  - all hierarchical levels
  - all time spans
- Idealised influence
  - all hierarchical levels
  - up to three months (effective and satisfying only), between one year and two years and between two and five years (conducive to extra effort and effective only)
- Inspirational motivation
  - all hierarchical levels
  - up to three months (effective and satisfying only), between three months and five years
- Intellectual stimulation
  - all hierarchical levels
  - up to three months (effective and satisfying only), between three months and two years and between two and five years (effective and satisfying only)
- Individualised consideration
  - all hierarchical levels
  - all time spans

The analysis of superior ratings found the following behaviours conducive to extra effort, effective and satisfying when exhibited by managers at the stated hierarchical levels and with the stated time spans:

- Attributed charisma
  - all hierarchical levels
  - all time spans
- Idealised influence
  - top-level and director-level combined (conducive to extra effort and satisfying only), senior-level, middle-level (conducive to extra effort and satisfying only) and lower-level
  - all time spans
- Inspirational motivation
  - middle-level and lower-level
  - all time spans
- Intellectual stimulation
  - top-level and director-level (combined), senior-level, middle-level (conducive to extra effort only) and lower-level
  - all time spans
- Individualised consideration
  - top-level and director-level (combined) (satisfying only), senior-level and lower-level
  - all time spans

The analysis of subordinate-ratings found the following behaviours conducive to extra effort, effective and satisfying when exhibited by managers at the stated hierarchical levels and with the stated time spans:

- Attributed charisma
  - all hierarchical levels
  - all time spans
- Idealised influence
  - top-level, director-level (effective and satisfying only), senior-level, middle-level and lower-level

- all time spans

- Inspirational motivation
  - top-level (effective and satisfying only), director-level, senior-level, middle-level and lower-level
  - all time spans
- Intellectual stimulation
  - top-level, director-level (conducive to extra effort only), senior-level, middle-level and lower-level
  - all time spans
- Individualised consideration
  - all hierarchical levels
  - all time spans

There is no evidence to support the suggestion (Stordeur *et al.*, 2000) that transformational leadership increases in effectiveness at higher hierarchical levels. Indeed, the results show that the effectiveness of transformational leadership appears to decrease at the extremities (the highest levels and lowest levels) of the organizational hierarchy. Furthermore, the results concerning the effectiveness of transformational leadership underline the importance of extending the research across more than three hierarchical levels. Previous research in this area has studied a maximum of only three categorised hierarchical levels (Alimo-Metcalfe and Alban-Metcalfe, 2003; Bass *et al.*, 1987; Lowe *et al.*, 1996; Oshagbemi and Gill, 2004; Stordeur *et al.*, 2000; Yammarino and Bass, 1990; Yokochi, 1989).

Investigating five levels has provided valuable data concerning the uppermost managers in organizations. For example, although these research findings do not support previous research that has suggested senior-level managers are more transformational than directors and top-level managers (Alimo-Metcalfe and Alban-Metcalfe, 2003), they do suggest an alternative view: some dimensions of transformational leadership (i.e. idealised influence and inspirational motivation) are not as applicable to top-level managers as other dimensions of transformational leadership are (i.e. attributed charisma, intellectual stimulation and individualised consideration).

These intriguing results invite speculation. Firstly, top-level managers, owing to their hierarchical position, were rated only by themselves and their direct reports (directors). Directors may already be intrinsically motivated to the extent that their own 'extra effort' is not influenced by others' charismatic and inspirational behaviours. This hypothesis is reminiscent of Hinkin and Tracey's (1999) suggestion that charismatic behaviours may indeed not be needed in organizations (highlighted in chapter six). The results of this research suggest that behaviours associated with charisma (idealised influence) are relevant to all levels in an organization except top-level management in respect of promoting extra effort among immediate direct reports.

Secondly, these results may reflect contextual aspects of leadership: the research was conducted in the UK manufacturing sector. The findings therefore may be a reflection specifically and solely of UK manufacturing culture. This is a worthy hypothesis given that previous research findings, for other nationalities and industry sectors, do not support the findings of this research regarding the effectiveness of transformational leadership at upper levels of an organization (Stordeur *et al.*, 2000).

10.3.2 Transactional Leadership: Contingent Reward and Management-by-exception (Active and Passive)

This research found that the use of transactional leadership appears constant across hierarchical levels and time spans whether analysed compositely or by individual ratings (self, peer, superior and subordinate). This is consistent with previous findings by Oshagbemi and Gill (2004).

This research, however, did show some differences in the use of two of the constituent behavioural dimensions of transactional leadership across hierarchical levels: contingent reward and active management-by-exception. Whether differences emerged depended on whose perception (self, peer, superior or subordinate) of hierarchical level is considered: differing results were found for different perceptions. This was not the case for the category variable time span of the manager's role. No differences in the effectiveness of transactional leadership

between time spans were found with either aggregated data or individual rating (perception) data.

The effectiveness of transactional leadership therefore appears to be dependent on authority rather than time or even work complexity. This is supported by previous research that suggests a positive correlation between the use of transactional leadership behaviour and a directive style (Gill, 1999b).

Work complexity, however, is defined by stratified systems theory (SST) (Brown and Jaques, 1965; Jacobs and Jaques, 1987; Jaques, 1976, 1989, 1990; Jaques and Clement, 1991) at only a basic level centred on time span of the manager's role. More contemporary theories of complexity and management (Stacey *et al.*, 2000), leadership (Griffin, 2002; Wheatley, 1992, 1999) and organizations (Stacey, 2001; Streatfield, 2001) should be used as the basis for further research in this area.

Also of interest is that these findings call into question the categorisation of contingent reward and management-by-exception under the banner of 'transactional leadership'. This issue has been highlighted previously (Den Hartog *et al.*, 1997; Rafferty and Griffin, 2004; Tepper and Percy, 1994): there are suggestions that contingent reward is more closely related to transformational leadership than it is to transactional leadership. The research findings support this view: the findings for transactional leadership (overall), contingent reward and management-by-exception active were markedly different. The implications of these findings on the 'Full Range Leadership' model are discussed in more detail in section 10.3.6 of the thesis.

This research adds to knowledge in this area by providing data on the extra effort, effectiveness and satisfaction of transactional leadership (overall) across hierarchical levels in organizations, as research on this has not been conducted previously. The findings of the analysis of the aggregated data show that transactional leadership is conducive to extra effort when exhibited by senior-level managers, but it is not effective or satisfying. This type of leadership is effective and satisfying when exhibited by lower-level managers but it is not conducive to extra effort. It is conducive to extra effort, effective and satisfying, however, when exhibited by middle-level managers. Conversely, transactional leadership is not

conducive to extra effort, effective or satisfying when exhibited by directors and top-level managers.

According to the analysis of individual ratings (self, peer, superior and subordinate), similar results were found in the analysis of self-ratings and subordinate ratings. According to self-ratings, transactional leadership is conducive to extra effort, effective and satisfying when exhibited by lower-level managers, conducive to extra effort and effective when exhibited by middle-level managers, and effective when exhibited by senior-level managers. According to subordinate ratings, transactional leadership is conducive to extra effort when exhibited by lower-level managers, effective and satisfying when exhibited by middle-level managers, and conducive to extra effort when exhibited by senior-level managers. Transactional leadership is not conducive to extra effort, effective nor satisfying when exhibited by either top-level or director-level managers according to self-ratings and subordinate ratings.

The opposite effect was found from analysis of superior ratings alone. Transactional leadership was found to be conducive to extra effort when exhibited by top-level and director-level managers (combined) and conducive to extra effort and effective when exhibited by senior-level managers. Transactional leadership was not conducive to extra effort, not effective and not satisfying when exhibited by middle-level or lower-level managers according to superior ratings.

The results concerning peer ratings were different again. Transactional leadership was viewed by peers as conducive to extra effort and satisfying when exhibited by senior-level managers. For all other hierarchical levels transactional leadership was viewed by peers as neither conducive to extra effort, effective nor satisfying.

With regard to the category variable time span of a manager's role, transactional leadership appears conducive to extra effort, effective and satisfying at time spans of one year and above but not at time spans below one year. This seems counter-intuitive as transactional leadership appears more effective at middle-level and lower hierarchical levels. This difference may be due to projects with shorter time spans not needing formalised objective setting, monitoring and reward systems. This set of exchange-related leadership behaviours, therefore, appears to be appropriate to longer time spans.

Similar results were found from the analysis on subordinate-rating data. Transactional leadership was viewed as conducive to extra effort when exhibited by managers working to time spans above one year. However, it was not viewed as effective or satisfying when exhibited by managers working to time spans of above one year. Analysis of other individual ratings supports this view. For example, according to self-ratings, transactional leadership is conducive to extra effort, effective and satisfying, and according to peer ratings, transactional leadership is conducive to extra effort, when exhibited by managers working to a time span of between one year and two years.

Analysis of self-ratings also found transactional leadership to be conducive to extra effort, effective and satisfying when exhibited by managers working to a very short time span, namely of up to three months. Furthermore, analysis of superior ratings also found transactional leadership to be conducive to extra effort when exhibited by managers working to a time span of up to three months. And according to subordinate ratings, transactional leadership is effective and satisfying when exhibited by managers working to a time span of between three months and one year. It appears that aggregated rating data are hiding interesting and important individual perceptions.

These results may also reflect contextual aspects of leadership. The research was conducted in the UK manufacturing sector and therefore the findings may be merely a reflection of UK manufacturing culture. Comparative data concerning this area is not provided in previous research. There appears to be no previous research concerning the effectiveness of transactional leadership across differing hierarchical levels or time spans in an organization. Further research in different sectors and nationalities therefore is needed for comparison purposes.

The results of the research show active management-by-exception to be conducive to extra effort, effective and satisfying when exhibited by middle-level managers, and satisfying but not effective or conducive to extra effort when exhibited by lower-level managers. Active management-by-exception appears not to be conducive to extra effort, effective or satisfying when exhibited by managers above middle-level management.

Similar results were found from self-ratings and subordinate ratings. According to self-ratings, active management-by-exception is conducive to extra effort, effective and satisfying when exhibited by lower-level managers and effective and satisfying when exhibited by middle-level managers. According to subordinate ratings, active management-by-exception is conducive to extra effort when exhibited by lower-level managers. According to self-ratings and subordinate ratings, transactional leadership appears not to be conducive to extra effort, effective or satisfying when exhibited by either top-level or director-level managers.

These findings are in direct contrast to those in previous research that suggests active management-by-exception is more effective at higher organizational levels (Stordeur *et al.*, 2000). It is interesting to note that the findings reported in this thesis for subordinate ratings do not agree with the findings of Stordeur *et al.* (2000), which were based only on subordinate ratings. These differences may well be due to national culture differences or industry sector cultural differences.

Support for Stordeur *et al.* (2000), however, was found in the analysis of superior ratings alone. Active management-by-exception was found to be conducive to extra effort and effective when exhibited by top-level and director-level managers (combined). Active management-by-exception is neither conducive nor inhibitory to extra effort, neither effective nor ineffective, and neither satisfying nor unsatisfying when exhibited by senior-level or middle-level managers according to superior ratings. Active management-by-exception was also seen as satisfying, according to superior ratings, when exhibited by managers at lower-levels.

The results concerning peer ratings were different again. For all hierarchical levels management-by-exception (active) was viewed according to peer ratings as neither conducive nor inhibitory to extra effort, neither effective nor ineffective, and neither satisfying nor unsatisfying.

The research provides no evidence to support previous research findings that middle-level managers exhibit more active management-by-exception than lower-level managers (Yammarino and Bass, 1990). Lower-level managers, however,

appear to exhibit active management-by-exception more than top-level managers do.

The results also show that active management-by-exception is not conducive to extra effort, effective or satisfying when exhibited by managers working to any time span. Although peer ratings are consistent with this finding, all other individual ratings (self, superior and subordinate) are not consistent with it. Active management-by-exception, according to self-ratings, is conducive to extra effort, effective and satisfying when exhibited by managers working to a time span of up to three months. Active management-by-exception, according to superior ratings, is also conducive to extra effort when exhibited by managers working to time spans of up three months and between two years and five years, effective when exhibited by managers working to time spans of up one year, and satisfying when exhibited by managers working to a time span of up to three months. Lastly, according to subordinate ratings, active management-by-exception is effective when exhibited by managers working to a time span of between two years and five years. Again, the aggregation of data appears to be hiding interesting and important findings from the analysis of individual ratings.

Moreover, with self-ratings omitted, the results for active management-by-exception are different. Active management-by-exception appears to be effective when used by directors, not conducive to extra effort when used by middle-level managers, and not satisfying when used by lower-level managers. With self-ratings omitted, the results for the effectiveness of active management-by-exception across time spans are slightly different: it is effective and satisfying when exhibited by managers working to a time span of between two and five years. The results therefore provide some support for active management-by-exception as more effective at higher hierarchical levels in an organization (Stordeur *et al.*, 2000), but only when self-ratings are omitted from the analysis.

Active management-by-exception at director-level, therefore, is perceived by other-ratings sources as more effective than by directors themselves. This underlines the importance of understanding the difference between what a manager views as effective leadership behaviour and what followers (and colleagues) view as effective leadership behaviour. For example, a director may discount behaviours relating to

active management-by-exception, such as objective setting, monitoring and corrective action, to the detriment of their leadership effectiveness and follower satisfaction.

Furthermore, the results show that passive management-by-exception is ineffective and unsatisfying at all hierarchical levels and time spans. This behaviour, however, is inhibitory to extra effort when exhibited by top-level, middle-level, and lower-level managers but not inhibitory when exhibited by senior-level and director-level managers and at time spans of between three months and one year. According to the analysis with self-ratings omitted, passive management-by-exception is also inhibitory to extra effort at a time span of between two and five years. This provides some support for previous research findings that this set of behaviours is less negatively associated with effectiveness when practised by upper-level managers than when exhibited by lower-level managers (Stordeur *et al.*, 2000). The results of this research and previous research (Stordeur *et al.*, 2000) imply that senior-level and director-level managers are able to be more passive than lower-level managers in the leadership behaviour without being inhibitory to extra effort.

This research suggests that senior-level and director-level managers must not become complacent because passive management-by-exception may still have a detrimental effect on their leadership effectiveness and follower satisfaction. Furthermore, analysis of individual ratings (self, peer, superior and subordinate) shows results that differ from those from the analysis of aggregated data for both hierarchical level and time span.

Results similar to those from the aggregated data were found from subordinate ratings: passive management-by-exception is inhibitory to extra effort, ineffective and unsatisfying when exhibited by top-level, senior-level and lower-level managers; ineffective and unsatisfying when exhibited by middle-level managers; and ineffective when exhibited by director-level managers.

Analysis of superior ratings show passive management-by-exception as inhibitory to extra effort, ineffective and unsatisfying when exhibited by middle-level and lower-level managers and unsatisfying when exhibited by senior-level managers. Passive management-by-exception appears to be neither conducive nor inhibitory to extra

effort, neither effective nor ineffective, and neither satisfying nor unsatisfying when exhibited by top-level and director-level managers (combined), according to superior-ratings.

Analysis of peer ratings found passive management-by-exception to be ineffective and unsatisfying when exhibited by top-level and director-level (combined), middle-level and lower-level managers and unsatisfying when exhibited by senior-level managers. Passive management-by-exception is neither conducive nor inhibitory to extra effort when exhibited by managers at any hierarchical level.

The results concerning self-ratings were also different from those from the aggregated data. According to self-ratings, passive management-by-exception appears to be unsatisfying only when exhibited by middle-level managers and not when exhibited by managers at any other hierarchical level. And passive management-by-exception appears to be neither conducive nor inhibitory to extra effort and neither ineffective nor effective when exhibited by any manager at any hierarchical level.

The results for the transactional leadership components and extra effort, effectiveness and satisfaction provide little support for hypothesis five. Hypothesis five stated that transactional leadership would be effective to the same extent for middle-level and lower-level managers but decrease in effectiveness at more senior levels in organizations. The research found that extra effort, effectiveness and satisfaction associated with contingent reward, for example, are constant across all hierarchical levels and time spans. With self-ratings omitted from the analysis, however, the results show that contingent reward is not conducive to extra effort when used by top-level managers.

The effectiveness of contingent reward therefore does not seem to be moderated by hierarchical level or time span. Behaviours such as providing material rewards and giving recognition are consistently conducive to extra effort, effective and satisfying across all organization levels. All managers should therefore be encouraged to use this type of behaviour. Contingent reward, however, does seem to be moderated by perception (self, peer, superior and subordinate). It is recommended, therefore, that

managers should develop the ability to use this form of behaviour but also should be aware that perceptions of its effectiveness may differ.

In addition, at top levels of organizations self-ratings seem to moderate how conducive to extra effort contingent reward is viewed. Top-level managers therefore should not lose sight of how using this behaviour may reduce the level of extra effort by their direct reports (in this case directors) because contingent reward is not viewed as conducive to extra effort, according to the analysis with self-ratings omitted.

Transactional leadership overall appears to be conducive to extra effort, effective and satisfying at time spans of one year and above but not at time spans below one year. These results, however, are misleading. Contingent reward and active management-by-exception – two of the components of transactional leadership – show contrasting results. Contingent reward is conducive to extra effort, effective and satisfying when exhibited by managers working to all time spans. Active management-by-exception on the other hand is not conducive to extra effort, effective or satisfying when exhibited by managers working to any time span. When these two dimensions are aggregated together with passive management-by-exception to define 'transactional leadership', the consequence is a misleading view that overall transactional leadership is conducive to extra effort, effective and satisfying when exhibited by managers working to time spans above a year but not at time spans below a year. This is similar to a person's gaining an overall IQ score of 100 (the average), yet scoring 70 on numerical intelligence and 130 on verbal intelligence: the overall figure masks important differences.

The results concerning overall transactional leadership therefore hide interesting and important differences regarding its composite dimensions. These results bring into question the grouping of contingent reward and active management-by-exception under the umbrella of transactional leadership. This underlines the importance of reviewing alternative models of transformational, transactional and *laissez-faire* leadership and their respective component dimensions that are supported by the results of factor analysis reported in the previous chapter and discussed in more detail in section 10.3.6 of this thesis.

10.3.3 Laissez-faire Leadership

The findings of the research suggest that *laissez-faire* leadership is used (or not used) to the same extent by all managers. This contradicts previous findings that *laissez-faire* leadership is more prevalent at higher-levels (Yammarino and Bass, 1990). Analysis of individual ratings (self, peer, superior and subordinate) also supports these findings, yielding the same results as for the aggregated data set for both hierarchical level by unanimous opinion and time span of the manager's role. There is one exception: *laissez-faire* leadership is used significantly more by lower-level managers than by senior-level managers according to superior ratings. This finding also contradicts previous findings that suggest this form of behaviour is more prevalent at higher-levels (Yammarino and Bass, 1990).

This research also adds to knowledge in this area by providing data on the ineffectiveness of *laissez-faire* leadership across hierarchical levels and time spans. No other research is known to have provided such data. The research shows that *laissez-faire* leadership is inhibitory to extra effort, ineffective and unsatisfying when exhibited at all hierarchical levels and with all time spans, with the exception that it is not inhibitory to extra effort when exhibited by managers working to a time span of up to three months. As was noted earlier in section 10.2 this may be the case because *laissez-faire* behaviour is time-based in its effect.

Laissez-faire leadership would also seem to be dependent on perceptions. The analysis of individual ratings shows results that differ from those found with the aggregated data set, with the exception of subordinate ratings, which show *laissez-faire* leadership to be inhibitory to extra effort, ineffective and unsatisfying when exhibited by top-level and senior-level managers and ineffective and unsatisfying when exhibited by middle-level and lower-level managers. According to subordinate ratings, *laissez-faire* leadership is neither conducive nor inhibitory to extra effort, neither effective nor ineffective, and neither satisfying nor unsatisfying when exhibited by either top-level or director-level managers. In addition, *laissez-faire* leadership is inhibitory to extra effort, ineffective and unsatisfying when exhibited by managers working to all time spans according to subordinate ratings.

Analysis of superior ratings found *laissez-faire* leadership is perceived as inhibitory to extra effort, ineffective and unsatisfying when exhibited by middle-level and lower-level managers and unsatisfying when exhibited by senior-level managers. *Laissez-faire* leadership was perceived as neither conducive nor inhibitory to extra effort, neither effective nor ineffective, and neither satisfying nor unsatisfying when exhibited by either top-level and director-level managers (combined), according to superior ratings. *Laissez-faire* leadership, according to superior ratings, is also perceived as inhibitory to extra effort, ineffective and unsatisfying when exhibited by managers working to time spans of above one year, and as ineffective and unsatisfying when exhibited by managers working to time spans of below one year.

Analysis of peer ratings found *laissez-faire* leadership is perceived as inhibitory to extra effort, ineffective and unsatisfying when exhibited by top-level and director-level managers (combined), and as ineffective and unsatisfying when exhibited by senior-level, middle-level and lower-level managers. In addition, *laissez-faire* leadership is perceived as inhibitory to extra effort, ineffective and unsatisfying when exhibited by managers working to time spans between three months and two years, and as ineffective and unsatisfying when exhibited by managers working to time spans above two years and time spans below three months.

Analysis of self-ratings shows *laissez-faire* leadership to be perceived as ineffective when exhibited by middle-level and lower-level managers but not managers at any other hierarchical level. According to self-ratings, *laissez-faire* leadership is neither conducive nor inhibitory to extra effort and neither ineffective nor effective when exhibited by managers at any hierarchical level. In addition, according to self-ratings, *laissez-faire* leadership is inhibitory to extra effort, ineffective and unsatisfying when exhibited by managers working to a time span of between one and two years, and ineffective when exhibited by managers working to a time span of up to three months. *Laissez-faire* leadership is neither conducive nor inhibitory to extra effort and neither ineffective nor effective when exhibited by managers working to any other time span, according to self-ratings.

10.3.4 *Predictors of Extra Effort, Leadership Effectiveness and Follower Satisfaction*

The findings of this research are consistent with the findings of Densten (2003): each hierarchical level and time span has a unique set of predictors of extra effort and leadership effectiveness. This research adds to the knowledge in this area by identifying predictors for follower satisfaction and a unique set of predictors at each hierarchical level and for each time span. Individual predictors at each hierarchical level and time span, however, are different from those found in Densten's (2003) research. These results may reflect contextual aspects of leadership. This research was conducted in the UK manufacturing sector, whereas Densten's research was conducted in the Australian police force. The findings of this research are also hampered by the power of the regression analysis, which in some cases was adversely affected by sample size thereby affecting its validity.

10.3.5 The Relative Moderating Effect of Hierarchical Level, Time Span, Individual Perception and Organizational Size on Independent and Dependent Variables

Hierarchical regression analyses were conducted to assess the relative potential moderating effect of the two category variables (hierarchical level by unanimous opinion and time span of the manager's role) in relation to each other and rating sources (self, peer, superior and subordinate). Another variable understood to have a potential moderating effect on the data set is organizational size (number of employees). The wide range of organizations involved in the research (see table 8.1) justified including a measure of organization size in the hierarchical regression analyses.

The results of the hierarchical regression analyses show that hierarchical level and individual rating source have the strongest moderating effects on the independent and dependent variables. Time span had some significant moderating effects on two variables – idealised influence and transactional leadership (overall). However, the results of the regression analyses show that the variable 'organizational size' had no moderating effect on the 'Full Range Leadership' model. This may be owing to the model focusing on leadership *in* organizations or more dyadic face-to-face

leadership abilities that leadership *of* organizations or more strategic and visionary based.

This research provides support for the importance of investigating the Full Range Leadership model across hierarchical levels. The findings also support the importance of taking into account differing perceptions (rating sources) when conducting research in this area.

10.3.6 The Factor Structure of the 'Full Range Leadership' Model

In the light of concerns about the conceptualisation of the 'Full Range Leadership' model discussed earlier in the thesis (in section 4.4), the nine leadership behaviours were subjected to an exploratory factor analysis. This analysis provided some interesting and important findings.

Three factors emerged from the analysis. Labels for the first and third factors were identified from alternative models discussed in section 4.4 of this thesis and based on their constituent dimensions. Factor two was identified and labelled as 'active management-by-exception'. The factors were:

Factor 1: Active constructive leadership comprising:

- Attributed charisma
- Idealised influence
- Inspirational motivation
- Intellectual stimulation
- Individualised consideration
- Contingent reward

Factor 2: Management-by-exception (active)

Factor 3: Passive-avoidant leadership comprising:

- Management-by-exception (passive)

- *Laissez-faire*

This thesis provides evidence for a three-factor structure for the Full Range Leadership model. The model that emerged from the analysis, however, is slightly different from others that have been suggested. For example, one of the three-factor models suggested by Avolio *et al.* (1999a) comprises transformational leadership, transactional (contingent reward and management-by-exception [active]), and passive-avoidant leadership (management-by-exception [passive] and *laissez-faire*). The model that emerged from this research, however, supports the passive-avoidant factor but not the transformational and transactional factors as defined by Avolio *et al.* (1999a). Moreover, the findings support contingent reward as highly positively correlated with transformational leadership (Den Hartog *et al.*, 1997; Rafferty and Griffin, 2004; Tepper and Percy, 1994). And the findings do support the factor active constructive leadership also suggested by Avolio *et al.* (1999a). The findings of this research also suggest that active management-by-exception stands alone as a third factor. This has not previously been theorised or found in empirical research and therefore adds to knowledge in this area and may provide empirical evidence for a distinction between 'leadership' and 'management' as has been requested by Yukl (1999).

In summary, the findings of this research do support Avolio *et al.* (1999a) in that the 'Full Range Leadership' model is best represented by ten lower-order factors and three higher-order factors. The findings also lend support to those who suggest that there is an erroneous lack of distinction between passive management-by-exception and *laissez-faire* leadership (Bass, 1998; Den Hartog *et al.*, 1997; Gill, forthcoming). Evidence is provided that there is no reason for these components to be distinguished and that they should form a single higher-order factor (Den Hartog *et al.*, 1997).

The method of entering the data into the database (explained in section 8.5) in this research unfortunately made it impossible to analyse lower-order factor structures. Only higher-order factor structures therefore were investigated. This limits the conclusions that can be drawn from this research. For example, contingent reward theoretically is not associated with other transformational leadership dimensions that

are humanistic and developmental in nature: it is transactional. An analysis of lower-order factors may produce different findings. For instance, contingent reward comprises both material reward (e.g. money, performance-related pay) and psychological reward (e.g. praise, recognition, intrinsic satisfaction associated with carrying out the work itself and with achievement), and an analysis of these lower-order factors may find that psychological reward is more akin to the other transformational leadership dimensions and material reward is more akin to active management-by-exception. This would be worthwhile investigating.

10.3.7 Summary and Implications of the Research Findings for Current Theory

This research addresses the inconsistency and ambiguity of previous research findings concerning the use and effectiveness of transformational, transactional and *laissez-faire* leadership across hierarchical levels in organizations (cf. Bass, 1998; Oshagbemi and Gill, 2004; Stordeur *et al.*, 2000). The findings provide support for previous research findings on transformational, transactional and *laissez-faire* leadership by Bass *et al.* (1987), Lowe *et al.* (1996) and Oshagbemi and Gill (2004) as well as partial support for other research findings in the area (Alimo-Metcalfe and Alban-Metcalfe, 2003; Stordeur *et al.*, 2000; Yokochi, 1989).

The findings from aggregated and individual rating data, however, are inconsistent with previous research findings that lower-level officers in the US Navy score higher than more senior officers on charisma, intellectual stimulation, individualised consideration, contingent reward and passive management-by-exception, whereas senior officers score higher than lower-level officers on inspirational leadership, active management-by-exception and *laissez-faire* leadership (e.g. Yammarino and Bass, 1990). There is agreement, however, on inspirational motivation: this was found in the analysis of both aggregated and individual ratings to be exhibited more by managers at higher hierarchical levels than by managers at lower hierarchical levels.

The analysis of aggregated and individual ratings provides evidence in another contentious area: the effectiveness of transformational leadership. The findings suggest that transformational leadership is less effective at the top levels of an

organization. Previous research has found that the effectiveness of transformational leadership increases at higher levels of an organization (Stordeur *et al.*, 2000), which may reflect contextual aspects of leadership where the research was carried out, namely in a different industry sector – healthcare – and in a different country – Belgium. This research was conducted in the UK manufacturing sector and the findings therefore may be a reflection specifically of UK manufacturing culture.

Indeed Stordeur *et al.* (2000) also concluded that the hospital structure and culture were major determinants of leadership. These assertions make sense as recent research evidence suggests it is unlikely that there is a significant difference in leadership behaviour between the UK and Belgium as national cultures. Research findings suggest a more likely distinction is between cultures on a larger scale, for example western and eastern cultures (Boehnke *et al.*, 2003; Gill, 1985, 1997, 1999) and between western cultures and Latin American cultures (Boehnke *et al.*, 2003). It seems therefore that organizational or industry sector culture may play a larger moderating role on the effectiveness of differing leadership behaviours than national culture. Further research should investigate this to find out whether national, sectoral or organizational culture has a stronger moderating effect on leadership and leadership effectiveness.

This research has also found perceptions associated with rating source to be a strong moderating factor, but this does not explain the differing results of previous research. Previous research in this area has gained information on leadership from different sources. For example, one study used self-ratings (Oshagbemi and Gill, 2004), four used subordinate ratings of leadership (Alimo-Metcalfe and Alban-Metcalfe, 2003; Bass *et al.*, 1987; Stordeur *et al.*, 2000; Yammarino and Bass, 1990; Yokochi, 1989) and a meta-analysis by Lowe *et al.* (1996) included both peer and subordinate ratings. As has been highlighted previously in this thesis differing rating sources – self, subordinate, superior and peer – may have different perceptions and values concerning leadership and leadership effectiveness (Alimo-Metcalfe, 1996; Borman, 1974; Bradley, 1978; Colvin, 2001; Ilgen and Feldman, 1983; Salam *et al.*, 1997). These findings imply that different perceptions may explain differing views with regard to the use and effectiveness of leadership *within* research studies but fail to explain differences *between* previous research findings. This difference may reflect organizational or industrial culture.

The research adds to knowledge of the effectiveness of transactional leadership and the ineffectiveness of *laissez-faire* leadership across hierarchical levels. In addition, no information has been provided previously on the 'Full Range Leadership' model across different time spans. The research constitutes a more comprehensive investigation than studies carried out previously. This was achieved by gathering organization-wide and multiple-response data (from five hierarchical levels and, in most cases, 360-degree assessment).

Current theory is supported by findings that transformational leadership is more prevalent at higher levels of an organization's hierarchy and longer time spans, and that transactional leadership is more effective at middle levels and lower levels than at upper levels. Current theory (Antonakis *et al.*, 2003; Avolio and Bass, 1988; Sinha, 1995; Tichy and Ulrich, 1984) is not supported, however, by findings that transformational leadership appears to be consistently effective across hierarchical levels and time spans and that transactional leadership appears to be consistently used by all managers. The study also provides some support for propositions that active management-by-exception is more prevalent and effective at middle-level and lower levels than at higher levels (Antonakis *et al.*, 2003).

The research has found a comparative lack of transformational leadership behaviours and an increased effectiveness of active transactional leadership behaviours at middle-level and lower levels compared with higher levels in the organizational hierarchy. This may be due, as was suggested earlier, to managers at lower levels being more oriented towards a steady workflow and having to have a greater focus on maintaining effective operations. Higher-level managers, in contrast, focus more on change and on the creation and communication of new organizational policies and strategies (Katz and Kahn, 1966, 1978; Selznick, 1957).

Furthermore, the results of the research provide evidence to challenge previous findings concerning the proposition that effective leaders typically display both transformational and transactional leadership behaviours (Avolio and Bass, 1998; Avolio *et al.*, 1999a; Bass and Avolio, 1993; Hater and Bass, 1998; Howell and Avolio, 1993). According to the analysis of the aggregated data it appears that only senior-level, middle-level and lower-level managers are effective when displaying

both transactional and transformational leadership behaviours. The results of this research concerning time span also challenge the view that effective leaders display both transactional and transformational leadership behaviours. The findings of this research suggest that this is only the case for managers working to time spans of more than one year.

These findings, however, reflect perceptions associated with individual ratings (by self, peer, superior and subordinate). For example, according to subordinate ratings, only senior-level, middle-level and lower-level managers appear to be significantly more effective when displaying both transactional and transformational leadership behaviours. According to superior ratings only top-level and director-level managers (as a combined category) are effective when displaying both transactional and transformational leadership behaviours.

This research endorses concerns about the generalisability of the 'Full Range Leadership' model (Bryman, 1992). The findings suggest that there are differences in leadership requirements across hierarchical levels (including time spans) in organizations (cf. Antonakis, *et al.*, 2003; Den Hartog, *et al.*, 1999; Grint, 1997b; Hunt, 1991; Saskin, 1988; Waldman and Yammarino, 1999; Zaccaro, 2001). The findings of this research, however, also provide evidence that differences in the use and effectiveness of leadership across hierarchical levels may depend on, and potentially interact with, differing perceptions across the organization.

10.4 Implications of the Research Findings for the 'Full Range Leadership' Model

The findings that have been reported from this research help us to identify specific leadership requirements by organizational level, as recommended by Conger and Toegel (2002). These requirements are depicted in proposed models of transformational and transactional leadership (shown at figures 10.1 to 10.4) and based on the factor model generated by the research. The models show active constructive leadership and active management-by-exception at different hierarchical levels in an organization, for different time spans of discretion of a manager's role and from differing sources within the organization (self, peer, superior and subordinate).

Figure 10.1: A Model of Transformational and Transactional Leadership across Hierarchical Levels according to Different Rating Sources

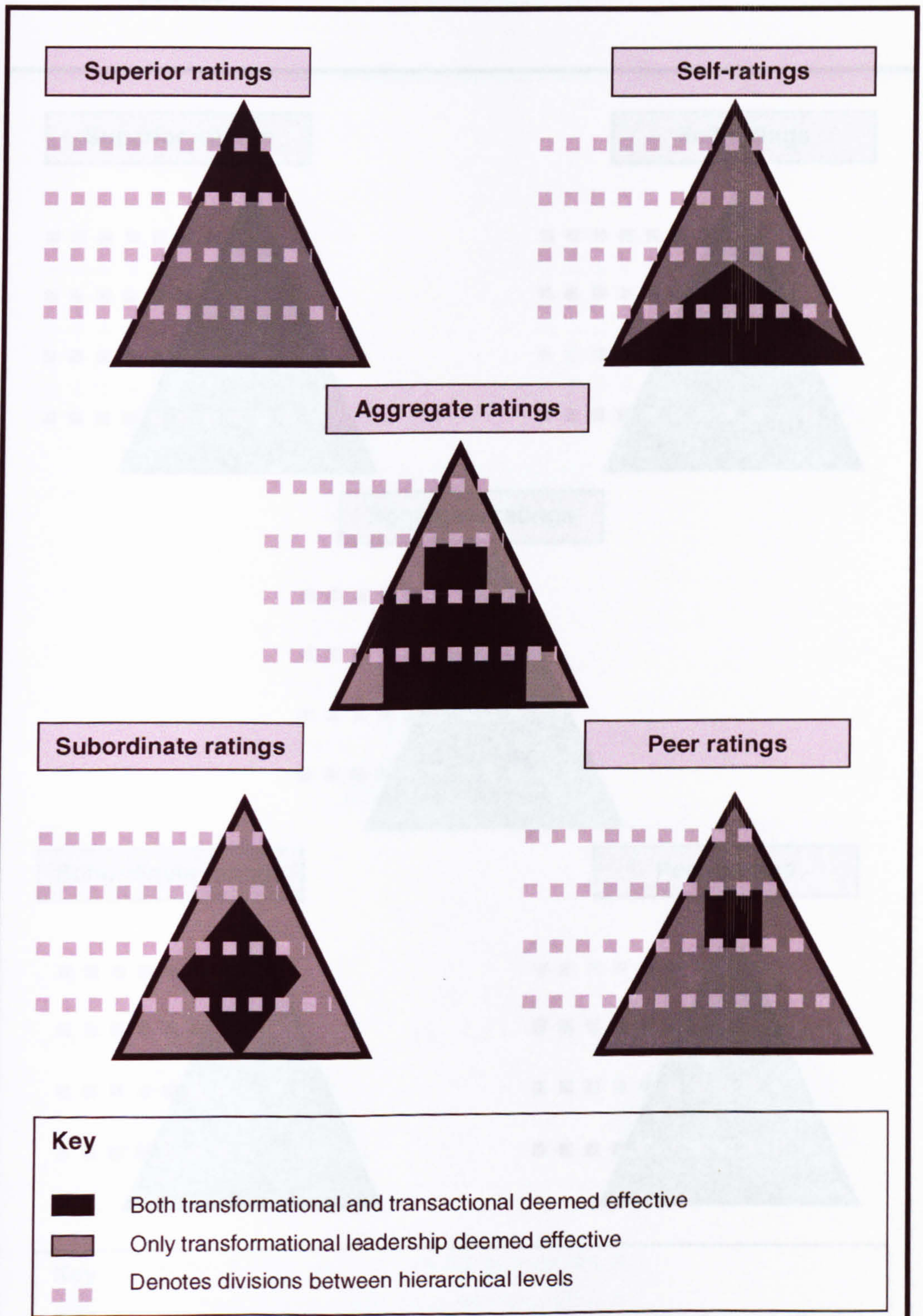


Figure 10.2: A Model of Active Constructive Leadership and Active Management-by-Exception across Hierarchical Levels according to Different Rating Sources

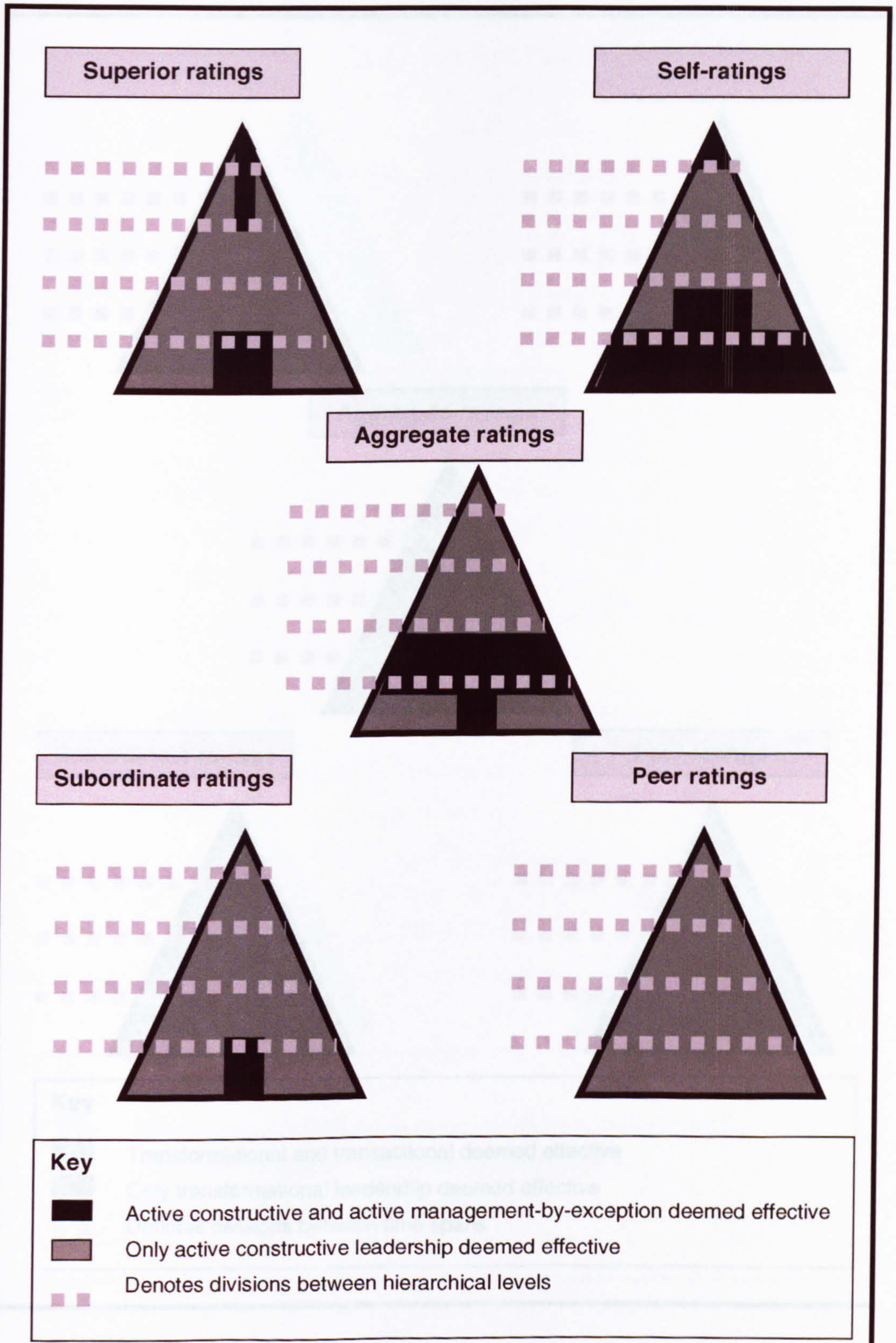


Figure 10.3: A Model of Transformational and Transactional Leadership across Time Spans according to Different Rating Sources

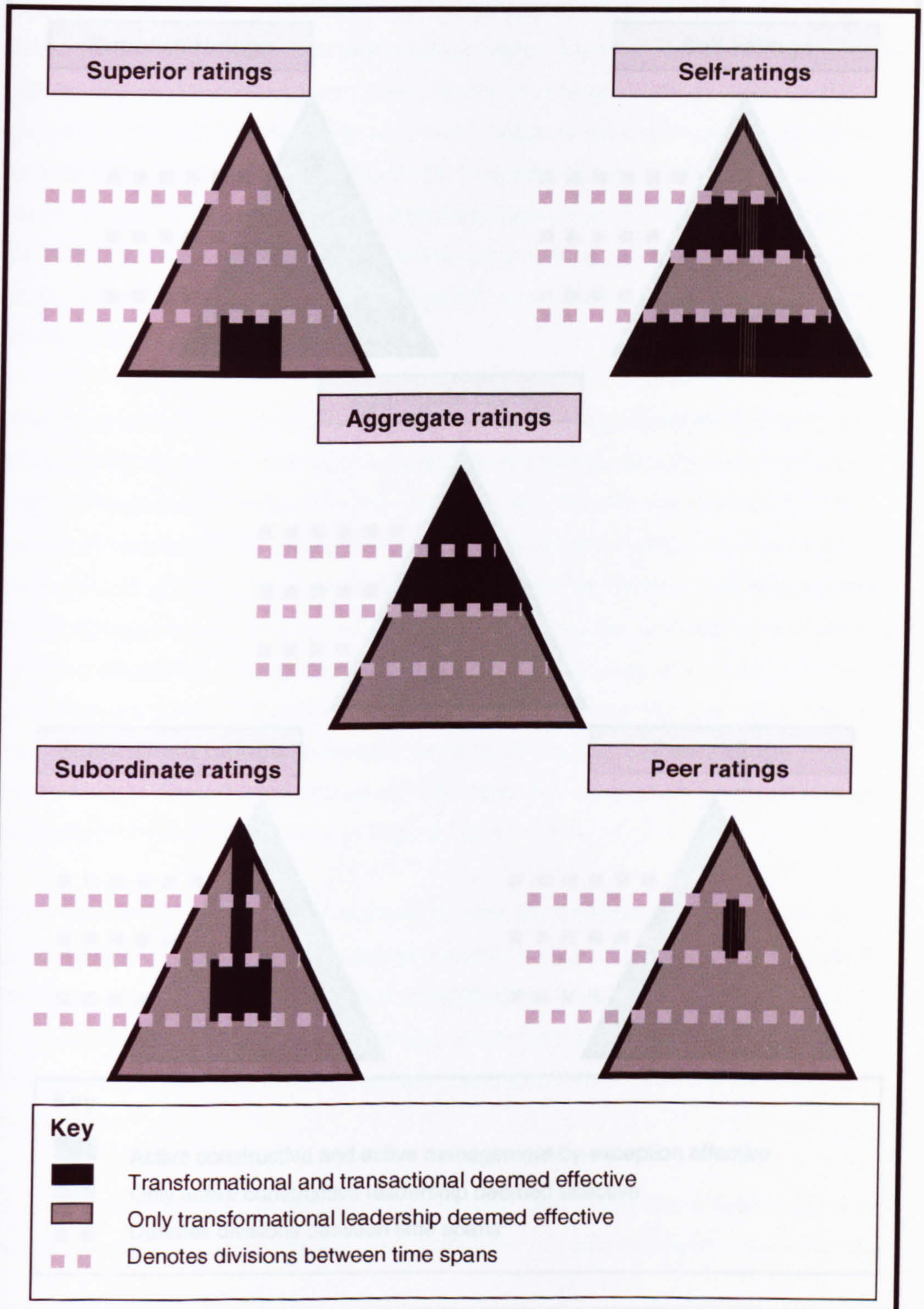
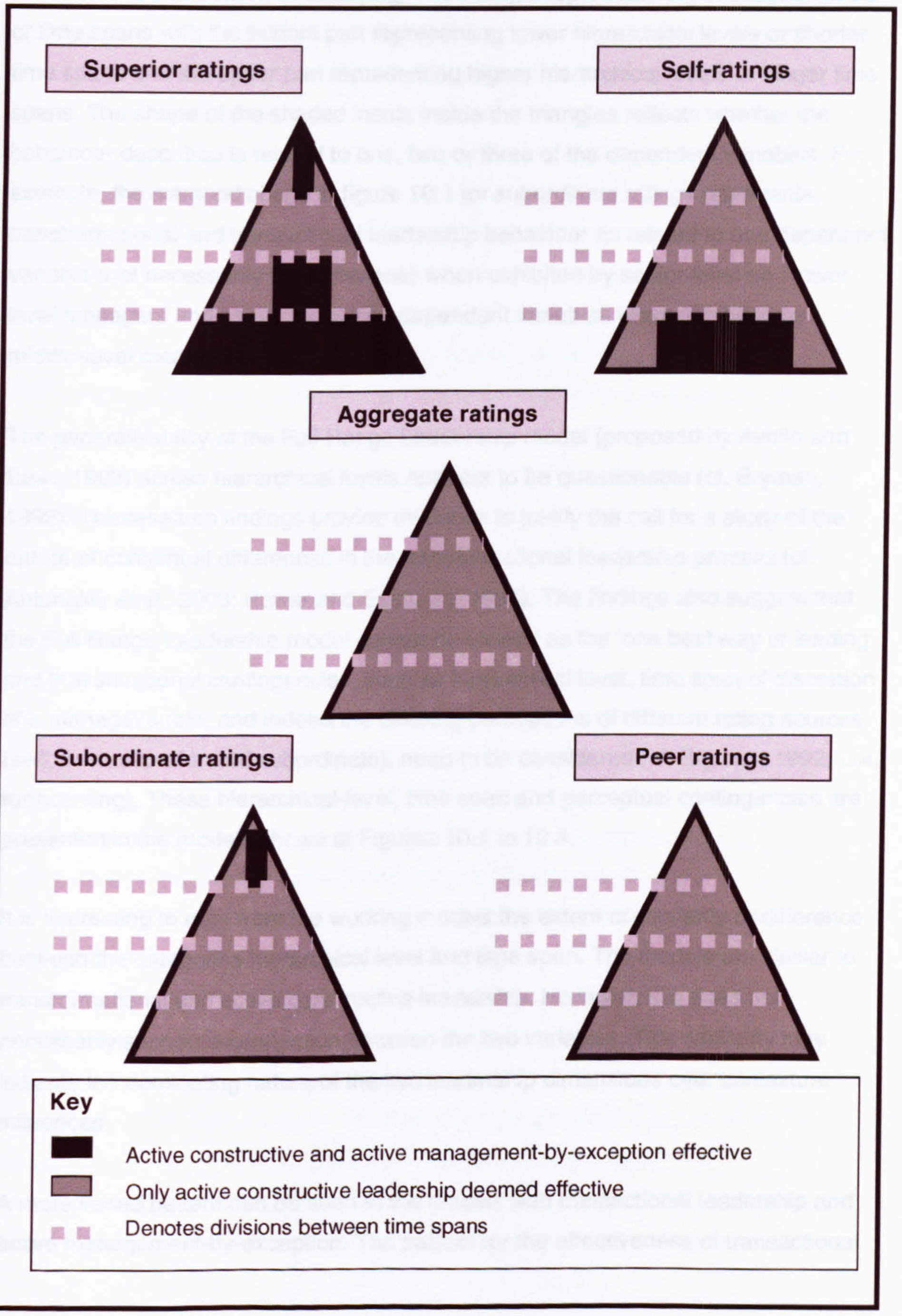


Figure 10.4: A Model of Active Constructive Leadership and Active Management-by-Exception across Time Spans according to Different Rating Sources



It should be noted that the term 'effectiveness' in the models refers to a behaviour being any one or more of the following (these appear thus in the MLQ): effective, conducive to extra effort, or satisfying. The triangle represents organizational levels or time spans with the bottom part representing lower hierarchical levels or shorter time spans and the upper part representing higher hierarchical levels or longer time spans. The shape of the shaded insets inside the triangles reflects whether the behaviour described is related to one, two or three of the dependent variables. For example, the diamond shape in figure 10.1 for subordinate ratings represents transformational and transactional leadership behaviour as related to one dependent variable (not necessarily the same one) when exhibited by senior-level and lower-level managers and as related to two dependent variables when exhibited by middle-level managers.

The generalisability of the Full Range Leadership model (proposed by Avolio and Bass, 1993) across hierarchical levels appears to be questionable (cf. Bryman, 1992). The research findings provide evidence to justify the call for a study of the nature of contextual differences in the transformational leadership process (cf. Antonakis *et al.*, 2003; Pawar and Eastman, 1997). The findings also suggest that the Full Range Leadership model cannot be viewed as the 'one best way of leading' and that situational contingencies, such as hierarchical level, time span of discretion of a manager's role, and indeed the differing perceptions of different rating sources (self, peer, superior and subordinate), need to be considered (cf. Bryman, 1992; Gill, forthcoming). These hierarchical-level, time span and perceptual contingencies are presented in the models shown at Figures 10.1 to 10.4.

It is interesting to note from the working models the extent of similarity or difference between the categories hierarchical level and time span. The models are similar for transformational and active constructive leadership. However, this does not necessarily support a connection between the two variables. This similarity may indicate the dominating nature of the two leadership dimensions over contextual influences.

A more varied pattern can be seen in the models with transactional leadership and active management-by-exception. The pattern for the effectiveness of transactional

leadership is similar between category variables for peer ratings. Other ratings, however, do differ and in some cases give the opposite picture. For example, for superior ratings, transactional leadership is perceived as effective at higher hierarchical levels and yet as effective at shorter time spans. Conversely, for aggregated ratings, transactional leadership is perceived as effective both at longer time spans and at lower hierarchical levels. A similar picture can be seen for the effectiveness of active management-by-exception.

These findings suggest that time span is not a proxy for hierarchical level. The regression analysis discussed earlier supports this view: hierarchical level was found to moderate leadership behaviour and leadership effectiveness to a high degree; time span was found to moderate leadership and leadership effectiveness to only a small degree. Stratified systems theory (Jacobs and Jaques, 1987; Jaques, 1976, 1989, 1990; Jaques and Clement, 1991) therefore may be too simplistic in its portrayal of work complexity. As has been highlighted previously stratified systems theory may be too rigid and mechanistic (Kleiner, 2001) to be attuned to modern organizations. Hence more contemporary theories of complexity and management (Stacey *et al.*, 2000), leadership (Griffin, 2002; Wheatley, 1992, 1999) and organizations (Stacey, 2001; Streatfield, 2001) should be used for further research in this area.

10.5 Implications of the Research Findings for Leadership Development

The results of the research highlight the need for the development of transformational leadership behaviours at lower management levels in UK manufacturing organizations. The results also suggest that lower-level managers (and potential managers) still require the development of active transactional leadership behaviours. Higher-level managers, on the other hand, need development that concentrates on moving away from the use of active management-by-exception to the use of more constructive transactional leadership behaviour – contingent reward – using psychological reward such as recognition and praise and material reward such as performance-related pay – and transformational leadership behaviours. In considering lower-level managers for more senior positions in organizations, the use of transformational leadership

behaviours and contingent reward behaviours by these managers should be the basis for the assessment of their suitability or potential for promotion.

Furthermore, these findings provide evidence to suggest that the 'Full Range Leadership Programme' (FRLP) may need modifying to accommodate the need for the development of transactional leadership, especially active management-by-exception, in managers at middle-level and lower levels of organizations. A programme that develops transformational leadership at the cost of management-by-exception (Bass and Avolio, 1990; 1998) may not be suitable for all managers if there is a reduction in the use of active management-by-exception. This research provides evidence that a reduction in active management-by-exception may be detrimental to managers at middle-level and lower levels in an organization.

This research also provides evidence to suggest that there are also differences between what managers perceive as effective in themselves and what other people view as effective in them. This has implications for leadership development. For example, managers may be using behaviours that they feel are effective, but in reality others around them do not have the same opinion. 360-degree feedback is a useful means for managers to check that their perceptions tally with those around them. The importance of understanding different perceptions of leadership and leadership effectiveness among different people cannot be underestimated. Leadership development therefore needs to address this issue as well as other contextual elements such as culture (at organizational, industry sector and national levels).

Lastly, this research also provides an outcome of practical benefit as suggested by Kraut *et al.* (1989): a useful benchmark for leadership in the UK manufacturing sector. Individual manufacturing companies can now compare ratings they gain for the Full Range Leadership model against the UK manufacturing sector norms provided by this research to enable a diagnosis of leadership development needs.

10.6 Implications of the Research Findings for General Leadership and Management Theory

Firstly, the research findings provide evidence for differences in the use of transformational leadership and the effectiveness of transactional leadership across hierarchical levels and time spans. There are grounds, therefore, to reject the suggestion that the nature of leadership skills remains constant across organizational hierarchical levels (cf. Katz, 1974).

Secondly, the findings contradict the suggestion that a wider variety of leadership skills would be seen at higher-levels of an organization than at lower levels (Hunt and Ropo, 1998). The results of this research suggest the contrary: a wider variety of transformational and transactional skills is *both* evident *and* effective at senior-level, middle-level and lower levels than at the top level of the organization's hierarchy. It must be noted, however, that the research concerned only the 'Full Range Leadership' model and that this model has attracted criticism of its completeness (Yukl, 1999). For example, the model does not explain the nature of effective visioning and organizational mission or the place of values, culture and strategy in leadership (Gill, forthcoming). These aspects of leadership may have a greater relevance to higher-level managers than to lower-level managers.

Lastly, the results of the research also challenge the notion that little leadership is needed at the lower management levels of an organization's hierarchy (Katz and Kahn, 1966; 1978). The evidence suggests on the contrary that transformational and transactional leadership are both effective at this level.

In summary, the research found a comparative lack of transformational leadership behaviour at lower and middle levels of management and a greater effectiveness of active transactional leadership behaviours at senior-level, middle-level and lower levels compared with top-level and director-level managers in organizational hierarchies. Current theory would suggest that this pattern might be due to higher-level management work being characterised by increased complexity, change, and the creation of new organizational structures and policies. In comparison, lower-level management work is characterised by the greater need to focus on administration and technical activities and skills (cf. Brown and Jaques, 1965; Jacobs and Jaques,

1987; Jaques, 1976, 1989, 1990; Jaques and Clement, 1991; Katz and Kahn, 1966; Katz, 1955, 1974; Mintzberg, 1973, 1980; Selznick, 1957). The pattern may also reflect the move away from 'leadership *in* organizations' to 'leadership *of* organizations' (Dubin, 1979) or similarly the move from 'direct leadership' to 'organizational leadership' (Brown and Jaques, 1965; Jacobs and Jaques, 1987; Jaques, 1976, 1989, 1990; Jaques and Clement, 1991).

As was highlighted earlier complexity is defined by stratified systems theory at only a basic level centred on the time span of discretion in the manager's role. More contemporary theories of complexity and management (Stacey *et al.*, 2000), leadership (Griffin, 2002; Wheatley, 1992, 1999) and organizations (Stacey, 2001; Streatfield, 2001) should also be considered.

This limitation may explain the results concerning the category variable 'time span' not being compatible with the distinction between 'organizational leadership' and 'direct leadership' as described in stratified-systems theory (Brown and Jaques, 1965; Jacobs and Jaques, 1987; Jaques, 1976, 1989, 1990; Jaques and Clement, 1991). The distinction between 'organizational leadership' and 'direct leadership' would have been evident if there had been a clear distinction in the results between managers working to time spans of above two years (organizational leadership) and those working to time spans below two years (direct leadership) (see Table 3.2). This was not the case.

The findings of the research should contribute to the development of a more coherent and cohesive picture of leadership. Researching the moderating effects of variables such as hierarchical level, time span and rating source (self, peer, superior and subordinate) has contributed to a better contextual understanding in leadership research. This contextual understanding is absent in previous research, and its absence is a contributory factor to the disconnected and directionless state of contemporary research and theory on leadership (cf. Zaccaro and Klimoski, 2001).

10.7 Summary of the Methodology, Data Collection and Analysis Used in the Research

Firstly, the study used aggregate ratings – mean values of the multiple ratings (ratings by self, peer, superior and subordinate) – for analysis purposes. Previous research using multiple ratings also used the average scores for all individuals who responded to the questionnaire as the measure for each scale (Atwater and Yammarino, 1992; Hegarty, 1974; Shipper and Davy, 2002). Such aggregation was deemed appropriate, especially when studying managers, because it reduces random error and perceptual differences (and other effects mentioned above) among observations by others (Campion, 1988; Shipper and Davy, 2002).

Concerns regarding the use of aggregated data, however, were corroborated. Analyses based on individual rating sources (self, peer, superior and subordinate) showed results that were different from those gained from analyses of aggregated data. This supports the suggestion that using aggregated data diminishes the usefulness of the information gained from different rating sources. Differences in perception between rating sources may be lost in the analysis. As was highlighted in section 6.4, aspects of behaviour deemed to be important by one member of an organization may be different from those regarded as important by others (Alimo-Metcalfe, 1996; Borman, 1974; Bradley, 1978; Colvin, 2001; Ilgen and Feldman, 1983; Salam *et al.*, 1997). These important differences in perception are lost in the aggregation process.

Secondly, there were a number of occasions when non-parametric tests such as the Mann Whitney U-test and Spearman's ρ had to be used in place of parametric tests (analysis of variance and Pearson's r). This was due to a number of independent variables not satisfying parametric assumptions ('goodness of fit' and homogeneity of variance). Analysis using non-parametric tests is not as robust as analysis using parametric tests (Coolican, 1994).

Thirdly, as was highlighted in chapter six, this research attempted to gain organization-wide data. There are, however, two points that need to be raised here. First of all, no non-managers were used as participants in the study. True organization-wide research should include perceptions of leadership among non-

managers or employees reporting to managers at the lowest level in the organization to enable comparison between leadership of managers and leadership displayed by those who have no position or authority power. The study, however, does yield perceptions from non-managers as part of the 360-degree rating process, though the research project was aimed specifically at ratings of managers within the organizational hierarchy. A second issue is that a number of the organizations in the sample were owned by larger companies or had other sites either in the UK or globally. This means that the research did not obtain information on top-level managers in these organizations. Organization-wide data, strictly speaking, therefore was not gained for these organizations.

The research also found that two distinct groupings of organizational size provide the best return rate of surveys and a higher probability of a paper-and-pencil 360-degree response. These groupings were organizations with 30-60 employees and organizations with 100-400 employees. The response rate for these groups rarely fell below 90 percent. Furthermore, these groups had the highest percentage of 360-degree responses. This supports the premise stated in chapter six that this methodology may be best suited to conducting research in medium-sized organizations (Edwards and Gill, 2002, 2003). This is because the probability of gaining full 360-degree responses from small (below 30 employees) and large (above 400 employees) organizations is reduced.

In addition, very small organizations (below twenty employees) did not give any 360-degree responses. This is most likely due to the lack of available 'other-ratings'. For example, company 4 in the sample (see Table 8.1) was a family business run as a partnership with a small number of employees. While providing peer ratings and subordinate ratings, they did not provide superior ratings. A solution to this problem may be to seek alternative ratings such as those of customers, clients or suppliers (Edwards and Ewen 1996; Fletcher 1997; France 1997). Gaining such external perspectives would also be a useful addition to leadership research (Edwards and Gill, 2003).

The research also suffered from a clear reduction in survey returns and 360-degree responses from larger organizations. It appears that larger organizations found it difficult to track paper-and-pencil questionnaires (Chappelow 1998). If this

methodology is to be useful in leadership research, and indeed in other business and management research, electronic questionnaire formats need to be developed and made easily available and user-friendly. This would certainly encourage better response rates and a higher probability of gaining full 360-degree responses within larger organizations (Edwards and Gill, 2003).

The findings of the research also suggest that organization size is not the only factor that has a bearing on the probability of obtaining 360-degree responses. The culture of the organization also has an effect. For example, organizations that had no experience of 360-degree appraisal or feedback systems were less inclined to take part. Furthermore, those that did take part showed very low percentages of 360-degree responses. Organization 9 was one such organization (see Table 8.1). There does not seem to be a direct solution to this problem besides taking whatever data is available from organizations. Organizational culture, however, may also have an impact on the ability to obtain organization-wide data (Edwards and Gill, 2003).

Organization-wide data collection and 360-degree assessment certainly make advances and could even provide solutions to limitations in leadership research. This research, however, highlighted a number of problems in obtaining this type of data. For example, the applicability of such an approach when using quantitative methodologies may be limited to medium-sized organizations owing to difficulties encountered in small and large organizations (Edwards and Gill, 2003).

Lastly, the overall sample size for the study (n = 215 for hierarchical level and n = 253 for time span) was adequate. In addition, for this kind of empirical research a minimum sample size of 30 for each variable category is recommended (Roscoe, 1975; Sekaran, 2003). Most categories satisfied this recommendation. The exceptions were some rating sources for hierarchical level, namely self-ratings of top-level managers (n = 29), peer ratings of top-level and director-level managers combined (n = 28), peer ratings of middle-level managers (n = 24), superior ratings of top-level and director-level managers combined (n = 25), and subordinate ratings of director-level managers (n = 29). These sample sizes, however, as they are marginal, should not cause undue concern. For example, others scholars (e.g. Coolican, 1994) recommend a minimum sample size of 25 for each variable category.

More of a concern in this research was the small sample sizes separately for top-level and director-level managers in respect of superior ratings and peer ratings. These categories therefore had to be combined for analysis purposes, thereby reducing the number of hierarchical levels studied from the original five to four for these particular category ratings. Unsurprisingly, at top levels in organizations, superiors and even peers are scarce. Future research should seek more peer and superior ratings of these managers to ensure adequate category sample sizes.

10.8 Evaluation of the Research

Three criteria help to evaluate research findings. These are internal validity, external validity and reliability (Gill and Johnson, 1997).

10.8.1 Internal Validity and Reliability

Internal validity refers to whether or not a cause or stimulus actually produces what has been interpreted as an effect or response or, using terminology in this thesis, an outcome. Reliability refers to the consistency of results obtained in research. To satisfy the reliability criterion it should be possible for another researcher to replicate the original research using the same subjects and the same research design under the same conditions. Research designs such as the one used in this research, with the identification and manipulation of independent and independent variables, endow the findings of research with significant strengths of internal validity and reliability. Owing to the structured nature of this research it is comparatively easy to replicate it, potentially giving the findings a high level of reliability.

10.8.2 External Validity

External validity refers to the extent to which any research findings can be generalised or extrapolated beyond the immediate research sample or setting in which the research took place. External validity can be subdivided into population

validity and ecological validity. Population validity concerns the extent to which it is possible to generalise to a wider population. Ecological validity concerns the extent to which it is possible to generalise from the actual social context in which the research has taken place and the data were gathered to other contexts and settings, such as industrial sectors or national cultures. This form of validity is also related to how artificial or atypical the research setting is relative to 'natural' contexts typical of normal, everyday life (Gill and Johnson, 1997).

Research methodologies such as the one used in this research are often low in population validity since they may involve small numbers of subjects, who may often be volunteers (Gill and Johnson, 1997). The sample size in this research, as has already been discussed, is adequate and enables generalisability (Sekaran, 2003). Owing to the questionnaire-based nature of the research, however, most but not all participants were volunteers: some participants completed questionnaires as part of an appraisal of leadership behaviour within their organizations. It seems therefore that the population validity of these findings is adequate.

Research methodologies such as the one used in this research are commonly low in ecological validity also because of the artificial nature of the research process and the 'unnatural' context created by their structure (Gill and Johnson, 1997). Using questionnaire-based research negates the interaction that participants have with their environment. Ethnographical methodologies such as observation-based research are generally higher in ecological validity because the research is able to assess participants in their natural environment and highlight interactions with their environment. This research had little ecological validity as the subjects were from only one industrial sector in one country. Further research is needed to expand the findings from this research to other contexts and settings.

The next chapter summarises the main conclusions drawn from this chapter and highlights the limitations of this research and possible future relevant research.

Chapter 11

Conclusions, Limitations and Further Research

11.1 Outline of the Chapter

This chapter reviews the main conclusions of the thesis, the value and limitations of the research, and recommendations for future research.

11.2 Conclusions

The results of the research suggest a distinct pattern in the use and effectiveness of transformational, transactional and *laissez-faire* leadership at different levels of an organization's hierarchy:

a. The use of transformational leadership is lacking at middle-level and lower levels
b. The effectiveness of transactional leadership is less both above and below middle-level management, which shows the greatest effectiveness of its use
c. The effectiveness of transformational leadership is constant across the hierarchical levels of an organization
d. The use of transactional leadership is constant across the hierarchical levels of an organization
e. The use and ineffectiveness of *laissez-faire* leadership are constant across the hierarchical levels of an organization

The results also show a distinct pattern for the model across time spans. They suggest that:

a. The use of transformational leadership increases with longer time spans
b. Transactional leadership is effective when exhibited by managers working to time spans of one year and above, but it is not as effective when exhibited by managers working to time spans of below one year

c. The effectiveness of transformational leadership is constant across all time spans
d. The use of transactional leadership is constant across all time spans
e. The use and ineffectiveness of *laissez-faire* leadership are all constant across all time spans.

This pattern of results, however, was obtained from the analysis of aggregated data. The thesis also concludes that other variables also have an effect on the use and effectiveness of transformational, transactional and *laissez-faire* leadership. For example, analysis of different rating sources (self, peer, superior and subordinate) led to interesting and important results.

Models based on these findings are provided, with evidential support from previous research and theory. There remains, however, some contention within previous research that these findings do not completely obviate. The thesis provides evidence to suggest that different perceptions (from different rating sources) may explain differing views with regard to the use and effectiveness of leadership in research studies but have little effect in explaining differences between previous research. As has been suggested above, this appears more likely to be attributable to organizational or industry sector culture.

The thesis also suggests that each hierarchical level and time span has a unique set of predictors of extra effort and leadership effectiveness. This research adds further to knowledge in this area by providing sets of predictors for follower satisfaction that are unique for each hierarchical level and time span.

The findings also add to knowledge about leadership by providing new data and conclusions on the effectiveness of transactional and the ineffectiveness of *laissez-faire* leadership across hierarchical levels. Moreover, the research has provided a more comprehensive investigation than previous research in this area by obtaining data for five hierarchical levels and from multiple rating sources (self, peer, superior and subordinate-ratings), in most cases 360-degree assessment. No other research is known to have obtained and used such in-depth data.

Furthermore, evidence is provided to challenge previous findings that effective leaders typically display both transformational and transactional leadership behaviours. Whether both forms of behaviour are effective is dependent upon the perception of different rating sources (self, peer, superior and subordinate). For example, subordinates' ratings suggest that only senior-level, middle-level and lower-level managers appear to be significantly effective when displaying both transactional and transformational leadership behaviours. Yet superiors' ratings suggest that only top-level and director-level managers are effective when displaying both transactional and transformational leadership behaviours.

In addition, the research provides evidence to support a three-factor structure for the 'Full Range Leadership' model. The model that emerged from the analysis, however, is a little different from others that have been suggested. The suggested model comprises:

a. Active constructive leadership (attributed charisma, idealised influence, inspirational motivation, intellectual stimulation, individualised consideration and contingent reward)
b. Active management-by-exception
c. Passive-avoidant leadership (passive management-by-exception and *laissez-faire* leadership)

These findings lend support to those who suggest that there is a lack of distinction between passive management-by-exception and *laissez-faire* leadership and that they should form a single higher-order factor. The findings also provide evidence to support previous empirical findings that suggest that active management-by-exception forms a separate factor and that contingent reward is highly positively correlated with transformational leadership.

There is evidence too that supports concerns about the generalisability of the Full Range Leadership model and suggestions of differences of leadership in general across hierarchical levels in organizations. This thesis concludes that hierarchical level and rating source (self, peer, superior and subordinate) have a strong moderating effect, and time span a slight moderating effect, on transformational, transactional and *laissez-faire* leadership. Organizational size has no moderating

effect on the Full Range Leadership model. Recommendations reflecting the findings are made regarding the 'Full Range Leadership Programme' (FRLP). The programme should be modified to better suit the leadership requirements of managers at different hierarchical levels of an organization.

The thesis has also provided evidence to question firstly the distinction between 'organizational leadership' and 'direct leadership' as described in stratified systems theory and secondly the grouping of contingent reward and active management-by-exception under the umbrella of transactional leadership as advocated by the Full Range Leadership model.

There are, however, several limitations associated with the research described in the thesis. These limitations are discussed below.

11.3 Limitations of the Research and Recommendations for Further Research

This research has limited ecological validity because it had limited scope. Participants were from only one sector in one country. Further research therefore will need to extend sampling to other organizational sectors and cultural groups. Furthermore, study of the nature of contextual influences on the transformational leadership process (Pawar and Eastman, 1997; Antonakis *et al.*, 2003) would benefit from multivariate analysis to identify the number of contextual variables that affect transformational leadership behaviours and their comparative moderating strength.

There are also concerns regarding the 'effectiveness' scale used in the MLQ. Items in this scale may be influenced by implicit leadership theories (Lord *et al.*, 1984; Meindl, 1990) or by 'halo effect'. Implicit leadership theory refers to personal views on the meaning of 'effective' leadership. For example, if participants in this research believed that leadership is 'striking a deal for services rendered', then they are likely to have judged that contingent reward explains the performance of a leader. But if they believed leadership is mainly an inspirational process, then they are likely to have judged contingent reward as of little or no consequence (Bass, 1990). The halo

effect refers to the tendency to allow the favourable attributes of an individual to influence judgement of their other attributes (Fletcher, 1997).

More explicit effectiveness scales and other forms of effectiveness (e.g. financial targets, goal accomplishment, etc.) need to be used in future research. The measures of leadership effectiveness in this study represent individuals' perceptions of leadership effectiveness rather than objectively measured performance outcomes (e.g. team performance).

There has been criticism of the transformational leadership literature overemphasising dyadic processes: most theory and research concentrate on leader influence on individuals and not leader influence on group or organizational processes (Yukl, 1999). This study does not respond to this criticism. The research obtained information concerning transformational, transactional and *laissez-faire* leadership and effectiveness in individual managers. Measures are now available, however, that take account of leadership from group perspectives (e.g. the Team Multifactor Leadership Questionnaire [TMLQ] [Avolio *et al.* 1999b]) and organizational perspectives (e.g. the Leadership Quotient [LQ] [Pasternack *et al.*, 2001] and the Leadership Audit [Gill and Edwards, 2004; The Leadership Trust, 2002]). Further research would benefit from using such tools for comparison purposes.

To gain a fuller organization-wide perspective, further research would benefit from obtaining perceptions of leadership among non-managerial professional and 'blue-collar' workers. This would enable comparison of managerial and non-managerial leadership ability and effectiveness. Furthermore, the categorisation of hierarchical level (e.g. senior-level, middle-level and lower) may mean different things in different organizations (Hunt, 1991) and different research projects, though this research did mimimise the adverse impact of different interpretations by using a consensus approach. Nevertheless, qualitative analysis of the meaning of the terms that refer to particular hierarchical levels such as 'lower', 'middle' and 'senior' across different organizations is therefore recommended.

Furthermore, the research was limited in part owing to small sample sizes for top-level and director-level managers in respect of superior ratings and peer ratings.

These categories therefore had to be combined for analysis purposes, thereby reducing the number of hierarchical levels studied from the original five to four for these particular category ratings. Unsurprisingly, at top levels in organizations, superiors and even peers are scarce. Future research should seek more peer and superior ratings of these managers to ensure adequate category sample sizes.

In addition, research in this area in future would benefit from gaining a 'distance' perspective (e.g. Alimo-Metcalfe and Alban-Metcalfe, 2001; Antonakis and Atwater, 2002). For example, top-level managers in this study appear not to be effective when exhibiting inspirational motivation. This may not be the case, however, if ratings of top-level leadership behaviour were gained from sources other than direct reports, i.e. from organizational members lower down the organization (by two levels and more) or from external contacts such as shareholders, customers and suppliers. A useful direction for future research would be to assess top-level leadership behaviour by ratings from all organizational stakeholders. Higgs (2002) suggests that there are at least two types of perceptions of leadership: nearby leadership (that perceived by immediate direct reports or subordinates) and distant leadership (that perceived by staff throughout the organization as exhibited by top-level managers such as a chairman or CEO). An extension of this research to investigate perceptions of top-level leadership from across the whole organization would enable a more detailed analysis of this distinction.

A new model of transformational, transactional and *laissez-faire* leadership has emerged from this research that comprises active constructive leadership (attributed charisma, idealised influence, inspirational motivation, intellectual stimulation, individualised consideration and contingent reward), active management-by-exception and passive-avoidant leadership (passive management-by-exception and *laissez-faire* leadership). This model needs to be further researched. For example, the method of entering the data into the database in this research unfortunately made it impossible to analyse lower-order factor structures. Only higher-order factor structures therefore were investigated. This limits the conclusions that can be drawn from this research. For example, contingent reward theoretically is not associated with other transformational leadership dimensions that are humanistic and developmental in nature: it is transactional. An analysis of lower-order factors may produce different findings. For instance, contingent reward comprises both material

reward (e.g. money, performance-related pay) and psychological reward (e.g. praise, recognition, intrinsic satisfaction associated with carrying out the work itself and with achievement), and an analysis of these lower-order factors may find that psychological reward is more akin to the other transformational leadership dimensions and material reward is more akin to active management-by-exception. This would be worthwhile investigating.

In comparing this research to previous research it seems that culture plays an important moderating role in the effectiveness of different leadership behaviours. There is evidence from a comparison of the research findings in this thesis with those of other investigations that organizational and industry culture may play a larger role than national culture does in understanding the effectiveness of leadership behaviour. Further research should investigate this to find out whether this is the case.

Lastly, complexity is defined by stratified systems theory at only a basic level centred on time span of discretion of the manager's role. More contemporary theories of complexity and management (Stacey *et al.*, 2000), leadership (Griffin, 2002; Wheatley, 1992, 1999) and organizations (Stacey, 2001; Streatfield, 2001) should be used as the basis for further research in this area.

11.4 Personal Reflections on the Research and Resulting Thesis

I was offered the opportunity in 1998 to carry out research for a PhD part-time as part of my job as a research assistant in the Research Centre for Leadership Studies at The Leadership Trust. I remember feeling confident of completing the research within four years. After a year this confidence was replaced by confusion. My literature review has become extensive, and distilling the huge amount of information into a manageable piece of work as a basis for my research proved to be a daunting challenge. I learnt that a powerful skill in academic work is the ability to summarise large amounts of information into concise statements. I have still not mastered this ability but I believe I have improved considerably during my studies.

I have heard a number of PhD students describe the PhD process as a 'roller coaster' experience with emotional 'ups' and 'downs' at various stages of the process. I certainly subscribe to this view. As a result I have developed in many areas during my PhD studies, in particular presentations skills, through numerous conference and seminar presentations, statistical analysis, and writing ability. A challenge for many part-time PhD students is achieving an acceptable balance between a full-time job, personal life and their PhD studies. I am very grateful to The Leadership Trust Foundation and Professor Roger Gill for giving me the space within my job role to conduct my research and produce this thesis.

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Appendix 1: The self-rating demographics sheet

PARTICIPANT INFORMATION SHEET

1 Age: _____

2 Gender:_____

3 Country of origin:

England ____

Scotland ____

Wales ____

N. Ireland ____

Eire ____

Other (please specify) _____

4 How many people are in the team you lead? _____

5 Which of the following best describes your position in the organization's hierarchy?

CEO/CHAIRMAN/MANAGING DIRECTOR ____

DIRECTOR ____

SENIOR MANAGEMENT ____

MIDDLE MANAGEMENT ____

LOWER MANAGEMENT ____

(Please tick the *one* that is most appropriate)

6 Considering all tasks/projects you are currently working on, what is the longest time span involved (please state in years, months and/or days)?

_____

Appendix 3 continued

7 Please rate your **organization** on the following (see below for a definition of mechanistic and organic organizations):

Mechanistic 1 2 3 4 5 Organic

8 Please rate the **team, department or group** you directly manage on the following (see below for a definition of mechanistic and organic organizations):

Mechanistic 1 2 3 4 5 Organic

Mechanistic organizations		**Organic organizations**
High, many and sharp differentiations	***Specialisation***	Low, no hard boundaries, relatively few different jobs
High, methods spelled out	***Standardisation***	Low, individuals decide own methods
Means/process	***Orientation of members***	Goals
By superior	***Conflict resolution***	Interaction
Hierarchical, based on implied contractual relation	***Pattern of authority control and communication***	Wide net-based, emphasizing common commitment
At top of organization	***Locus of superior competence***	Wherever there is skill and competence
Vertical	***Interaction***	Lateral
Directions, orders	***Communication content***	Advice, information, consultation, consensus
To organization	***Loyalty***	To project and group
From organizational position	***Prestige***	From personal contribution

Source: Mullins, L.J. 1996. ***Management and organizational behaviour, fourth edition.*** London: Pitman Publishing. P379.

Appendix 2: The other-rating demographics sheet

RATER INFORMATION SHEET

1 Which of the following best describes the position in the organization's hierarchy of the person you are rating?

CEO/CHAIRMAN/MANAGING DIRECTOR _____

DIRECTOR _____

SENIOR MANAGEMENT _____

MIDDLE MANAGEMENT _____

LOWER MANAGEMENT _____

(Please tick the *one* that is most appropriate)

Appendix 3: The organization information sheet

ORGANIZATION INFORMATION SHEET

1 Organization Name:_____

2 What product/service does your organization provide? _____

_____

3 Number of employees: _____

4 Turnover (optional): _____

5 Does your organization use any of the following manufacturing procedures (please tick as appropriate)?

CONTINUOUS PRODUCTION _____

BATCH PRODUCTION _____

UNIT PRODUCTION _____

6 Is your organization:

REGIONAL _____

NATIONAL _____

MULTINATIONAL _____

GLOBAL _____

Thank you for your assistance.

Appendix 4: The electronic mail correspondence to potential participating organizations

Dear Sir/madam

I am seeking manufacturing companies in the UK to take part in a research project. The project constitutes part of the required work for submission to the University of Strathclyde Graduate School of Business for the degree of Doctor of Philosophy and will investigate leadership in the management of manufacturing organizations. It will provide information on the leadership behaviour of managers, together with how effective and satisfying that behaviour is, as viewed by the managers themselves, their direct superiors, their colleagues and their subordinates.

Participants in the research will receive a leadership behaviour report at the end of the project that will highlight leadership behaviour on an individual, group and organizational basis. The results on a group level will be categorised by management level and department. In addition the
report will cross-reference the results from your organization with the average shown in the research population and a general sample of UK managers. This will enable participant organizations to benchmark themselves and to highlight areas for possible leadership development initiatives. The report will ensure that results are kept completely confidential.

Please find attached a document that outlines the project in more detail. If you would like to put your organization forward for the research project or you would like to discuss the research in more detail please feel free to contact me as below.

Yours faithfully

Gareth Edwards
Project Co-ordinator & Research Assistant
The Research Centre for Leadership Studies
The Leadership Trust Foundation
Ross-on-Wye HR9 7YH
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Please read the attached.

Appendix 5: The information to organizations described as an attachment in appendix 4

Investigating leadership behaviour of managers in manufacturing organizations in the UK.

Information to participating organizations

Contents

Appendix 5 continued.

1 Overview of the research

The research project constitutes part of the required work for submission to the University of Strathclyde Graduate School of Business for the degree of Doctor of Philosophy. It will gain information that will be invaluable in providing a solid empirical framework of how the concept of leadership differs across an organization's management team.

The research project will investigate relationships and differences in leadership behaviour throughout your organization's management team. It will provide information on the leadership behaviour of your managers, together with how effective and satisfying that behaviour is, as viewed by the managers themselves, their direct superiors, their colleagues and their subordinates. If your organization participates, you will receive a report on the research (the contents of this report are discussed in further detail in section two of this document).

1.1 Management or leadership?

For some years management and business academics have debated the nature of the concepts of management and leadership and whether these concepts are related or mutually exclusive. Some contemporary writers have suggested the concepts are mutually exclusive and leaders are needed in organizations, not managers. Others, on the other hand, suggest that leadership is one of the many roles of management and that both are needed, often referred to in popular literature as leader-managers.

This conceptual discussion is where this research project originated, and the information your organization will provide will go at least part way in resolving this debate. This in turn will assist in developing a better understanding of what it means to be appointed a manager and how people can carry out the role in the most effective manner.

Appendix 5 continued.

1.2 Transformational and transactional leadership

This theory of leadership proposes there are seven dimensions that describe leadership behaviour, based on numerous research projects. This theory has been useful in understanding the leadership behaviour of managers in organizations. A summary of these seven dimensions is given in table 1. This study, therefore, will use this theory in providing information about the leadership behaviour of your organization's managers, which will contribute to a more comprehensive understanding of how the concepts of management and leadership are viewed in today's society.

Table 1: Definitions of the seven dimensions of transformational and transactional leadership

Dimension	Definition
Transformational Leadership	
Attributed Charisma	You are seen by others as charismatic
Idealised Influence	You display charisma by expressing confidence in the vision, personally taking full responsibility for decisions and actions, showing purposefulness, persistence and trust, emphasising accomplishments, and gaining respect, trust and confidence as a result of demonstrating out-of-the-ordinary ability.
Inspirational Motivation	You communicate a clear vision, align others' personal goals and those of the organization, treat threats and problems as opportunities, and use appealing words and symbols.
Individualised Consideration	You show concern for the individual by identifying his or her unique abilities and needs, providing matching challenges and opportunities to learn, delegating, coaching and providing feedback.
Intellectual Stimulation	You question the *status quo* and encourage imagination, creativity and use of intuition as well as logic.
Transactional Leadership	
Contingent Reward	You set performance objectives and standards, provide feedback on progress, and exchange rewards and recognition (e.g. money or praise) for achievement.
Management-by-Exception	You set performance and standards, either wait for problems to arise or actively monitor progress, and then correct deviations and errors.
Laissez-faire	You avoid taking a stand, ignore problems, do not follow up, and refrain from intervening.

Source: Gill, R.W.T. 1997. ***A cross-cultural comparison of the leadership styles and behaviour of managers in the UK, USA and Southeast Asia.*** Unpublished Working Paper, No. LT-RG-97-8. Ross-on-Wye, Herefordshire: The Leadership Trust Foundation.

Appendix 5 continued.

1.3 The multifactor leadership questionnaire (MLQ)

A questionnaire has been developed to assess each of the seven dimensions of transformational and transactional leadership theory – the Multifactor Leadership Questionnaire (MLQ). This is the questionnaire that will be used to ascertain the required information from your organization. If you would like further information on this theory of leadership, or indeed any other aspect of management and leadership theory and research, please contact the research co-ordinator.

The research version of the MLQ is a 43-item questionnaire with a five-point rating scale. The items relate to the seven dimensions of leadership behaviour in table 1 (above). The questionnaire also rates effectiveness, satisfaction with the manager's leadership behaviour and his/her methods, and the level of extra effort provided by others in relation to the manager's leadership behaviour. The questionnaire and demographics sheet will only take around 10-15 minutes for each participant to complete.

1.4 Why manufacturing organizations?

The manufacturing industry has been targeted for two reasons. Firstly, the research project will investigate leadership behaviour at different hierarchical levels. I therefore need to eliminate any other factor that may have a bearing on leadership behaviour, for example, organizational sector or culture. Secondly, manufacturing organizations tend to have a well-structured hierarchy in place.

Appendix 5 continued.

2 Benefits to your organization

Your organization will benefit from this research in several ways:

- **INSIGHT-** the research will provide your organization with an exclusive insight into the leadership behaviour of those in your management team who participate in the research project. Your organization's results will also be compared to a set of scores from a general UK management sample and to the project sample of UK manufacturing managers enabling you to benchmark you organization.
- **LEADERSHIP DEVELOPMENT –** The research will also provide you with information that you may choose to incorporate into a leadership development action plan for your organization. This information will include how your managers perceive leadership at differing levels of your organization and whether they think that leadership behaviour is effective and satisfactory.
- **PUBLICITY –** Once complete, the research will be put forward for publication in a reputable academic journal and reported in mainstream management magazines. Your organization will be given the opportunity to be listed as a contributor, enabling customers and clients to see your commitment to training and development of your employees, especially leadership and management development.

2.1 Your organization's end of research report

The report your organization will receive at the end of the research will be a representation of the perception of leadership behaviour of the managers who participated in the research. The will have four categories of hierarchical level – CEO's/chairmen/directors, senior-level managers, middle-level managers and lower level managers. If your organization is not of a size that can incorporate these levels adequately a more general report will be produced. No one person will have details displayed**. The report will ensure that results are kept completely confidential.** The graphs will also be categorised by differing perceptions – self and other ratings. There will also be opportunities to look at leadership behaviour by department.

Appendix 5 continued.

In addition to this helpful insight into perceptions of leadership behaviour the report will cross reference the results from your organization with the average gained from the research population and a general sample of UK managers. This enables your organization to benchmark itself against other organizations in the same sector and country.

The research co-ordinator will be on hand after the research is complete to assist in developing action plans for training and development and interpreting benchmarks, if requested.

Appendix 5 continued.

3 Procedure

The procedure is quite simple. Your organization will provide the research co-ordinator with a list of managers who are willing to take part in the project. The term 'manager' means anyone who has been invested with responsibility for a group of people and/or a specific task. This includes chairman, chief executive officer, director, manager, supervisor, assistant manager, or foreman. It is important that questionnaires are completed at **each level of your organization** (including the top level manager – Chairman, Chief Executive or Managing Director - and a management representative of the lowest level in your management hierarchy – supervisors, etc.), and by as many managers as possible.

Each manager will also need a questionnaire completed by <u>one superior</u> (a line manager), <u>one peer</u> (a colleague at the same or similar level in the organization with whom the manager works quite closely), and <u>one subordinate</u> (a person they manage). These raters should be chosen randomly and confidentially wherever possible. Your organization will provide the details of the three raters along with the list of participating managers.

Each participant and rater will also need to complete a demographics sheet along with the Leadership Questionnaire. Details of the information that will be sent to each participant and rater is highlighted in the next section of this manuscript.

Once the participants and raters have completed the questionnaires and demographics sheets they will need to send them back to the research co-ordinator in the pre-paid envelope provided.

Appendix 5 continued.

4 Contents of the research pack

Each participant and rater will be sent a research pack by the research co-ordinator, which will include the following:

1 X self-rating and/or other rating questionnaire

1 X self-rating and/or other rating demographics sheet

1 X pre-paid envelope

If the study pack you receive has any information missing please contact the study co-ordinator as soon as possible.

Appendix 5 continued.

5 Expectations of the research

The information your organization provides will be placed alongside information from other organizations taking part in the study **(all information will be treated with the strictest of confidence and will not be imparted to any other individuals or organizations)**. Once all the information has been collected, it will be analysed by the research co-ordinator to investigate relationships and differences in leadership behaviour throughout levels of organizational hierarchy. The analysed data will then contribute towards the development of a comprehensive model of leadership behaviour of managers.

Appendix 5 continued.

6 Confidentiality

I, Gareth Edwards (the project co-ordinator) agree to total confidentiality when receiving and using information from all organizations participating in this research.

The information your organization provides to me will be held in the strictest of confidence and will not be passed on to any other individual or organization unless specifically permitted by the organization concerned.

Appendix 5 continued.

7 Contact details of the research co-ordinator

Mr Gareth Edwards

Project Co-ordinator & Research Assistant

Research & Development

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Please contact the research co-ordinator at any time for more information or to discuss any issues arising from the study.