

A QUANTITATIVE EVALUATION OF THE REFORMULATED 1996
PATH-GOAL THEORY OF WORK UNIT LEADERSHIP VIA
STRUCTURAL EQUATION MODELLING

WILLIAM BRIAN HOWIESON

MPhil MBA BSc

DOCTOR OF PHILOSOPHY

THE UNIVERSITY OF EDINBURGH

2008

To Tanya: my wife

ad vitam aeternaum

“Since I have the liberty of being somewhat autobiographical in this essay, I would like to take this opportunity to share with the reader four assertions that have impressed me and have helped me to formulate the philosophy of science that guides my theoretical and empirical efforts:

- All theories, no matter how good at explaining a set of phenomena, are ultimately incorrect and consequently will undergo modification over time (Paraphrased from Mackenzie & House 1977, p 13).
- A theory, which cannot be mortally endangered, cannot be alive (From personal communication to J R Platt by W Ruston 1964).
- The fate of the better theories is to become explanations that hold for some phenomena in some limited conditions (Statement originally by Mackenzie, repeated in Mackenzie & House 1977, p13).
- A good theory is one that holds together long enough to get you to a better theory (D O Hebb 1967, p21).

The virtue of internalizing the spirit of these assertions is that if one does so one will never be compelled to defend one's own theory, which inevitably will be shown to be false. I believe the 1971 Path-Goal Theory of Leadership has led to better theories, namely the 1976 Theory of Charismatic Leadership, the reformulated 1996 Path-Goal Theory of Work Unit Leadership, and the Value Based Theory of Leadership. Hopefully, the ‘1996 Theory’ will be subjected to empirical tests and a further improved theory will be formulated at some future time”.

Robert J House (1996)

DECLARATION

In accordance with University regulations, I declare that:

- This Thesis has been composed by myself.
- This Thesis is my own work.
- This Thesis has not been submitted for any other Degree or Professional Qualification except as specified.

Signature.....

CONTENTS

SECTION	PAGE NUMBER
Declaration	ii
Contents	iii
List of Figures	xii
List of Tables	xiv
Acknowledgements	xvi
Abstract	xvii
BACKGROUND THEORY	
<u>CHAPTER 1: INTRODUCTION</u>	1
1.1 Introductory Remarks	1
1.2 The Nature of Leadership	4
1.3 Definitions of Leadership	8
1.4 Leadership Effectiveness	11
1.5 Level of Conceptualization of Leadership	12
1.6 Overview of Major Research Approaches to Leadership	14
1.6.1 Classic Studies of Leadership	14
1.6.2 Traditional Theories of Leadership	17
1.6.3 Modern Approaches to Leadership	22
1.7 Path-Goal Theory	28
1.7.1 Contingency Theories: More than the Situation	28
1.7.2 Origin of Path-Goal Theory	28
1.8 Research Objective	31

SECTION	PAGE NUMBER
1.9 Research Strategy	31
1.9.1 Classifying the Research	31
1.9.2 A Structure to the Research	31
1.10 Summary of Chapter 1	34
<u>CHAPTER 2: ORIGIN AND HISTORY OF PATH-GOAL THEORY</u>	37
2.1 Introductory Remarks	37
2.2 The Origin of Path-Goal Theory	37
2.2.1 Scope of Path-Goal Theory	39
2.3 The Path-Goal Theory of Leader Effectiveness	42
2.3.1 Theoretical Background	42
2.3.2 A Basic Theory of Motivation	43
2.3.3 Expectancy Theory of Motivation	46
2.3.4 The Relationship between Expectancy Theory of Motivation and Path-Goal Leadership	49
2.3.5 Propositions	52
2.3.6 Hypothesis	54
2.3.7 Reconciliation of Prior Findings	57
2.3.7 Conclusions from the Path-Goal Theory of Leader Effectiveness	58
2.4 Path-Goal Theory of Leadership	60
2.4.1 Origin	60
2.4.2 General Propositions	63
2.4.3 Situational Moderator Variables	64
2.4.4 Empirical Support	67
2.4.5 Conclusion	70
2.5 Summary of Chapter 2	72
<u>CHAPTER 3: THE PATH-GOAL MODEL</u>	74
3.1 Introductory Remarks	74
3.2 An Exchange Theory of Leadership	74

SECTION	PAGE NUMBER
3.2.1 The Role of the Leader	75
3.2.2 The Path-Goal Linkage	76
3.3 A Plethora of Variables	77
3.3.1 The Legacy	78
3.4 Summary of Chapter 3	81
 FOCAL THEORY	
<u>CHAPTER 4: THE PATH-GOAL MODEL: AN OVERVIEW OF THE EXTANT RESEARCH</u>	84
4.1 Introductory Remarks	84
4.2 Research to Test the Theory	87
4.2.1 Overview	87
4.2.2 Supportive Results	89
4.2.3 Mixed and Non-supportive Results	91
4.2.4 Efforts to Reconcile the Theory with Mixed Results	95
4.3 Intervening Variables	101
4.4 Criticisms and Conceptual Weaknesses	102
4.5 Lessons Learned	104
4.6 Concerns for the Future	106
4.7 Summary of Chapter 4	108
 <u>CHAPTER 5: THE 1996 PATH-GOAL THEORY OF WORK UNIT LEADERSHIP</u>	 110
5.1 Introductory Remarks	110
5.2 Axioms	111
5.3 The Independent Variables of the 1996 Path-Goal Theory of Leadership: Leader Behaviours	112
5.3.1 Path-Goal Clarifying Behaviour	112
5.3.2 Achievement-Oriented Leader Behaviour	116
5.3.3 Work Facilitation Behaviour	118

SECTION	PAGE NUMBER
5.3.4 Supportive Leader Behaviour	120
5.3.5 Interaction Facilitation Behaviour	121
5.3.6 Group Oriented Decision Process Behaviour	122
5.3.7 Representation and Networking Behaviour	124
5.3.8 Value-Based Leader Behaviour	125
5.4 The 1996 Theory: 'The Value Added'.	130
5.5 Summary of Chapter 5	133

CHAPTER 6: RESEARCH METHODOLOGY

6.1 Introductory Remarks	137
6.2 Analysis of Previous Research Methodology used to test Path-Goal Theory	137
6.2.1 The Independent Variable: Leader Behaviours and the Scales Employed to Measure Them	137
6.2.2 The Situational Moderator Variable	141
6.2.3 The Intervening Variable	142
6.2.4 The Dependent Variable	143
6.2.5 Lessons Learned from the Research Methodology	144
6.3 Constraints to the Research Methodology	145
6.4 The Research Methodology	145
6.4.1 The Context	146
6.4.2 The Independent Variable: Relevant Leader Behaviours	149
6.4.3 The Situational Moderator Variable: The Task Demand Questionnaire	150
6.4.4 The Leader Behaviour Questionnaire	151
6.4.5 The Task Demand Questionnaire	151
6.4.6 The Unit Performance Indicator Questionnaire	152
6.4.6 Modeling the Independent Variable, the Situational Moderator Variable and the Dependent Variable	153
6.5 Quantitative and Qualitative Techniques to be Employed	154
6.5.1 Quantitative Research Methods	154
6.5.2 Qualitative Research Methods	155

SECTION	PAGE NUMBER
6.5.3 Advantages and Disadvantages	156
6.5.4 Structural Equation Modelling	158
6.6 Summary of Chapter 6	168
 DATA THEORY	
 <u>CHAPTER 7: ESTABLISHING THE RELEVANT LEADER BEHAVIOURS (THE INDEPENDENT VARIABLE) AND TASK DEMANDS (THE SITUATIONAL MODERATOR VARIABLE)</u>	
7.1 Introductory Remarks	172
7.2 Design, Delivery and Analysis of the Leader Behaviour Questionnaire One	173
7.2.1 Design of Leader Behaviour Questionnaire One	173
7.2.2 Delivery of Leader Behaviour Questionnaire One	173
7.2.3 Analysis of Leader Behaviour Questionnaire One	174
7.3 Design, Delivery and Analysis of Task Demand Questionnaire One	178
7.3.1 The Task Demand Questionnaire	178
7.3.2 Design of Task Demand Questionnaire One	178
7.3.3 Delivery of Task Demand Questionnaire One	179
7.3.4 Analysis of Task Demand Questionnaire One	180
7.4 Design, Delivery and Analysis of Task Demand Questionnaire Two	184
7.4.1 Design of Task Demand Questionnaire Two	184
7.4.2 Delivery of Task Demand Questionnaire Two	185
7.4.3 Analysis of Task Demand Questionnaire Two	185
7.5 Data Summary	198
7.6 Summary of Chapter 7	199
 <u>CHAPTER 8: ANALYSIS AND DISCUSSION OF THE TASK DEMAND QUESTIONNAIRE AND THE LEADER BEHAVIOUR QUESTIONNAIRE</u>	
8.1 Introductory Remarks	201
8.2 SEM Techniques and Modelling Theory	203

SECTION	PAGE NUMBER
8.2.1 SEM Techniques	203
8.2.2 Theoretical Basis for Model Specification and Causality	208
8.2.3 Confirmatory Factor Analysis and SEM	209
8.2.4 Variables for the Study	215
8.2.5 Propositions for the Study	216
8.2.6 Modelling Theory	217
8.3 Research Sample	223
8.4 Design and Delivery of Leader Behaviour Questionnaire Two	224
8.4.1 Design of Leader Behaviour Questionnaire Two	224
8.4.2 Delivery of Leader Behaviour Questionnaire Two	226
8.5 Design and Delivery of Task Demand Questionnaire Three	227
8.5.1 Design of Task Demand Questionnaire Three	227
8.5.2 Delivery of Task Demand Questionnaire Three	228
8.6 Design and Administration of Performance Questionnaire	229
8.7 The Modelling Process	231
8.7.1 A Two Step approach	231
8.7.2 Modifying the Model to Obtain Superior Goodness of Fit	233
8.8 Research Results	236
8.9 Presentation of Results	236
8.9.1 Situational Moderator Variable: Management of Change	241
8.9.2 Situational Moderator Variable: Career Guidance/Personal Development of Subordinates	245
8.9.3 Situational Moderator Variable: Welfare/Discipline/Moral Issues	249
8.10 Discussion of Results	249
8.10.1 The Regression Coefficients	249
8.10.2 What do the Variables Represent?	250
8.10.3 Discussion	251
8.11 Summary of Chapter 8	260

SECTION	PAGE NUMBER
CONTRIBUTION	
<u>CHAPTER 9: CONCLUSION</u>	263
9.1 Introductory Remarks	263
9.2 Restatement of Research Objective	263
9.3 Summary of the Research	264
9.4 Conclusions from Research	264
9.4.1 Theoretical	264
9.4.2 Methodological	269
9.4.3 Managerial	272
9.5 Limitations of Research	278
9.6 Recommendations and Areas for Future Research	278
9.6.1 Leader Behaviour and Level	278
9.6.2 Contemporary Theories of Motivation	279
9.6.3 Interactions	280
9.6.4 Comparisons/Contrasts	280
9.6.5 Other Leader Behaviours	280
9.6.6 Performance or Satisfaction	280
9.6.7 A Qualitative Approach?	281
9.7 Where Next?	283
9.8 Summary of Chapter 9	290

SECTION	PAGE NUMBER
ANNEXES:	292
A. The Leader Behaviour Description Questionnaire	297
B. Pilot Research Methodology	302
C. Leader Behaviour Questionnaire One	303
D. Leader Behaviour Questionnaire One: Additional Data	308
E. Task Demand Questionnaire One: Letter of Request	315
F. Task Demand Questionnaire One: Additional Data	317
G. Task Demand Questionnaire Two: Letter of Request	320
H. Task Demand Questionnaire Two: Additional Data	325
I. Summary Data about Average Ranks for Two Groups	337
J. Leader Behaviour Questionnaire Two and Task Demand Questionnaire Three	339
K. The Unit Performance Indicator Questionnaire	346
 PUBLISHED PAPERS AS PART OF RESEARCH	 347
 BIBLIOGRAPHY	 390

LIST OF FIGURES

FIGURE	TITLE	PAGE
1.0	Levels of Conceptualisation for Leadership	13
1.1	A Simple Model of Path-Goal Theory	30
2.0	Directive Leadership Behaviour as an Independent Variable	41
2.1	Supportive Leadership Behaviour as an Independent Variable	41
2.2	A Simple Model of Expectancy Theory.	47
2.3	Effective Leader Behaviours	71
3.0	Path-Goal Theory — The Extant Model	78
4.0	A Comprehensive Path-Goal Model	100
6.0	The Reformulated 1996 Path-Goal Theory of Work Unit Leadership	150
6.1	The Research Methodology	153
6.2	Latent Variables	160
6.3	Correlation of Latent Variables	160
6.4	Regression of Latent Variables	161
6.5	Observed Variables	162
6.6	The Structural Equation Model	163
8.0	Latent Variables and Observed Variables	202
8.1	SEM Analysis	203
8.2	Relationship Among Measured Variables	204
8.3	Path Diagrams	206
8.4	Structural Model	210
8.5	Theoretical Model	213
8.6	Path Diagram	214
8.7	Proposed Model for Main Study	215
8.8	The Research Sample	224
8.9	Observed Variables	225
8.10	Observed Variables	228
8.11	Observed Variables	230
8.12	Structural Equation Model	235
8.13	Structural Model for Supportive Leader Behaviour and Management of Change	236
8.14	Structural Model for Path-Goal Leader Behaviour and Management of Change	238
8.15	Structural Model for Interaction Facilitation Leader Behaviour and Management of Change	239
8.16	Structural Model for Work Facilitation Leader Behaviour and Management of Change	240
8.17	Structural Model for Supportive Leader Behaviour and Career Guidance/Personal Development of Subordinates	241
8.18	Structural Model for Path-Goal Leader Behaviour and Career Guidance/Personal Development of Subordinates	242
8.19	Structural Model for Interaction Facilitation Leader Career Guidance/Personal Development of Subordinates	244
8.20	Structural Model for Work Facilitation Leader Behaviour Career Guidance/Personal Development of Subordinates	245

FIGURE	TITLE	PAGE
8.21	Structural Model for Supportive Leader Behaviour and Welfare/Discipline/Morale Issues	246
8.22	Structural Model for Path-Goal Leader Behaviour and Welfare/Discipline/Morale Issues	247
8.23	Structural Model for Work Facilitation Leader Behaviour Career Guidance/Personal Development of Subordinates	248
8.24	SEM of Path-Goal Theory	253
9.0	A Model of Path Goal Theory	265
9.1	An Alternative Model of Path Goal Theory	265

LIST OF TABLES

TABLE	TITLE	PAGE
1.0	A Simple History of Leadership Theory	6
1.1	Research Strategy	33
4.0	Summary Data from Published Research	88
7.1	Comparison of Royal Air Force Rank and Civilian Equivalent	174
7.2	Response Rate by Rank	174
7.3	Leader Behaviour by Rank Order	175
7.4	Scoring by Path-Goal Leader Behaviour	175
7.5	Scoring by Achievement-Orientated Leader Behaviour	175
7.6	Scoring by Supportive Leader Behaviour	175
7.7	Scoring by Work Facilitation Leader Behaviour	176
7.8	Scoring by Interaction Facilitation Leader Behaviour	176
7.9	Scoring by Group-Orientated Decision Process Leader Behaviour	176
7.10	Scoring by Representation and Networking Leader Behaviour	176
7.11	Scoring by Value-Based Leader Behaviour	176
7.12	Preferred Leader Behaviours by Rank	177
7.13	Comparison of Royal Air Force Rank and Civilian Equivalent	179
7.14	Description of Operating Domains	180
7.15	Principal Task Demands of Officers: Comparison by Functional Area	183
7.16	Principal Task Demands of SNCOs: Comparison by Functional Area	183
7.17	Descriptive Statistics: Frequencies	186
7.18	Management of Change: Simple versus Complex	188
7.19	Management of Change: Routine versus Challenging	188
7.20	Management of Change: Varied versus Repetitive	188
7.21	Introduction of Training Programmes: Simple versus Complex	189
7.22	Introduction of Training Programmes: Routine versus Challenging	189
7.23	Introduction of Training Programmes: Varied versus Repetitive	189
7.24	Welfare/Discipline/Morale: Simple versus Complex	190
7.25	Welfare/Discipline/Morale: Routine versus Challenging	190
7.26	Welfare/Discipline/Morale: Varied versus Repetitive	190
7.27	Career Guidance/Personal Development of Subordinates: Simple versus Complex	191
7.28	Career Guidance/Personal Development of Subordinates: Routine versus Challenging	191
7.29	Career Guidance/Personal Development of Subordinates: Varied versus Repetitive	191
7.30	Test Statistics and p -Values	196
8.0	Variables for Main Study	215
8.1	Comparison of Royal Air Force Rank and Civilian Equivalent	224
8.2	Goodness of Fit Statistics	237
8.3	Goodness of Fit Statistics	238
8.4	Goodness of Fit Statistics	239
8.5	Goodness of Fit Statistics	240
8.6	Goodness of Fit Statistics	241
8.7	Goodness of Fit Statistics	243
8.8	Goodness of Fit Statistics	244

FIGURE	TITLE	PAGE
8.9	Goodness of Fit Statistics	245
8.10	Goodness of Fit Statistics	246
8.11	Goodness of Fit Statistics	247
8.12	Goodness of Fit Statistics	248
8.13	Regression Coefficients for SM _v , I _v , and D _v .	257
9.0	Rank Order of Leader Behaviour	273
D-1	Cross Tabulation of Rank versus Path-Goal	308
D-2	Cross Tabulation of Rank versus Achievement Orientated	308
D-3	Cross Tabulation of Rank versus Supportive	309
D-4	Cross Tabulation of Rank versus Work Facilitation	310
D-5	Cross Tabulation of Rank versus Interaction Facilitation	311
D-6	Cross Tabulation of Rank versus Group	312
D-7	Cross Tabulation of Rank versus Representing and Networking	313
D-8	Cross Tabulation of Rank versus Value-Based	314
F-1	Task Demands in Senior Officers: Comparison by Functional Area	317
F-2	Task Demands in Junior Officers: Comparison by Functional Area	318
F-3	Task Demands in SNCOs: Comparison by Functional Area	319
H-1	Simple versus Complex	325
H-2	Routine versus Challenging	326
H-3	Varied versus Competitive	327
H-4	Simple versus Complex	328
H-5	Routine versus Challenging	329
H-6	Varied versus Competitive	330
H-7	Simple versus Complex	331
H-8	Routine versus Challenging	332
H-9	Varied versus Competitive	333
H-10	Simple versus Complex	334
H-11	Routine versus Challenging	335
H-12	Varied versus Competitive	336
I-1	Summary Data for Ranks for 2 Groups	337

ACKNOWLEDGEMENTS

I became interested in the path-goal theory of leadership in 1994, whilst studying for an MBA Degree. To try to understand the theory in greater depth, I contacted its author, Professor Robert J House at Wharton School of Management, the University of Pennsylvania.

After several discussions with Robert House, I decided to try to study this theory at PhD-level and it has been a great personal and professional experience to work under his tutelage. I have now met Bob on several occasions and he has been instrumental in this piece of work reaching completion. He has offered his unequivocal support with this thesis, and I place on record my sincere gratitude to him for his help throughout this project.

I must also record my thanks to Professor Paul Hanges at the University of Maryland for his helpful advice and comments with Structural Equation Modelling. In addition, I wish to thank Professors Richard Kerley and David Hatherley — my supervisors — for their support with this study, from conception to completion.

I must also thank Air Commodore Peter Gray, formerly Director of the Defence Leadership Centre, and all staff at the RAF Leadership Centre, the Royal Air Force College Cranwell, for their help in making this project 'happen', particularly in administering the questionnaires and facilitating interviews when required.

Finally, this piece of work is for my wife, Dr Tanya Thiagarajah: a true companion and stalwart in this sometimes mad and chaotic world of ours.

ABSTRACT

In 1996, Professor Robert J House published a reformulated *Path-Goal Theory of Work Unit Leadership*, based on his earlier 1971 and 1974 theories. Path-goal leadership attempts to explain the impact that leader behaviour has on subordinate motivation, satisfaction and performance.

The aim of this context-specific study is to evaluate this reformulated '1996 Theory' via Structural Equation Modelling with engineers from the Royal Air Force as the primary data source.

This thesis offers a revised methodology to test path-goal leadership. In detail, three moderator variables are modelled with four independent variables to establish association with two dependent variables. In addition, five propositions from the '1996 Theory' are examined. The analysis suggests that: the moderator influences preference for a particular type of leadership behaviour (by the subordinate); leader behaviour has an impact on subordinate satisfaction; leader behaviour affects satisfaction directly and performance indirectly; subordinate satisfaction has a direct affect on subordinate performance; and performance is influenced by the type of task demand.

It is considered that there is association between the variables; however, the direction of this association is not known and it is difficult to predict accurately. Without further research, which is replicated and revalidated with other cohorts, causality in the leader behaviour — outcome variable paradigm cannot be argued.

Due to time constraints, the research has several limitations. Not all propositions cited in the '1996 Theory' are tested and several other variables are not examined. Finally, recommendations are made for future study, particularly replication with other cohorts in the public, private and third sectors to ensure validity. This will help in determining causality with leader behaviour and motivation, satisfaction and performance.

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTORY REMARKS

Leadership has been written about, formally researched and informally discussed more than any other single management topic and despite all the attention given to leadership, there is still considerable controversy (Luthans, 2001). For example, some organizational behaviour (OB) theorists do not even recognize leadership; as Gemmill & Oakley (1992, p113) state: “The social construct of leadership is viewed as a myth that functions to reinforce existing social beliefs and structures, about the necessity of hierarchy and leaders in organizations.” Indeed, in another article, Bennis (1999) makes the point that effective leadership cannot exist without the full inclusion and co-operation of employees and subordinates.¹

Throughout history, the difference between success and failure (whether in war, business, Government, or even a game of football) has been attributed to leadership.² For example, a recent Gallup survey indicates that most employees believe that it is the leader, not the organization, which guides the culture and creates the situations where workers are happy and successful.³

¹ The majority of the leadership literature, while ostensibly focused on the effects of leaders, has hitherto neglected the important role of followers in defining and shaping the latitudes of leaders' actions.

² Ancient writers such as Confucius, Aristotle, Socrates and Plato emphasised the importance of leadership as a prime shaper of societies (for example, see Kakabadse & Kakabadse (1999, p1)).

³ See *The Economist* August 8th 1998: 'It's the Manager, Stupid'.

At present, leadership is one of the most talked about issues in business and organisation. It is hard to turn on the television, open a newspaper or attend a conference without coming across numerous references to leaders, leadership and 'leading'. A search of the World Wide Web in Spring 2006 revealed 475 000 000 results for the word 'leadership' alone and similar searches of the Ebsco business and management publications database reveal an exponential increase in the number of published articles on leadership, from 136 in 1970-71, to 258 in 1980-81, 1,105 in 1990-91, and a staggering 10,062 in 2001-02 (an average of 419 articles per month) (Storey, 2004). The recent focus on leadership is an international phenomenon, as is the increased investment in leadership and management development. In the US, for example, Fulmer (1997) estimated an annual corporate expenditure of \$45 billion in 1997 (up from \$10 billion one decade before) and Sorenson (2002) identified 900 college or university leadership programmes (double that of 4 years earlier), offering over 100 specialist degrees and a wide range of related activities. Similar trends are occurring in the UK and Europe. Leadership is regarded as the key 'enabler' in the European Foundation for Quality Management (EFQM) Business Excellence Model (EFQM, 2000) and has become a central focus for numerous other public, private and voluntary sector development initiatives. Recent years have seen centres of excellence in leadership established for nearly all parts of the public sector, including health, defence, education and police.

However, regardless of all the attention given to leadership and its recognized importance, it does remain a 'black box' or unexplainable concept.⁴ It is known to exist and to have a

⁴ Although the phenomenon of leadership has been around since antiquity (Bass, 1990), the systematic social scientific study of leadership did not begin until the early 1930s; the resulting contributions have been cumulative, and a great deal is known about leadership phenomena. However, many questions remain unanswered; for example, to this day, the dominant proportion of the more than 3,000 studies listed by Bass (1990) is primarily concerned with the relationship between leaders and their immediate followers, and largely

tremendous influence on human performance, but its inner workings and specific dimensions cannot precisely be spelt out, and despite these inherent difficulties, many attempts have been made over the years to define leadership. Almost everyone who studies or writes about leadership interprets it differently.⁵ Furthermore, although many specific definitions can be cited, most of these definitions depend on the theoretical orientation taken; besides influence, leadership has been defined in terms of traits, role relationships, occupation of an administrative position, group processes, personality, compliance, particular behaviours, persuasion, power, goal achievement, interaction, role differentiation, and/or a combination of two or more of these.

Perhaps then, as good a definition (of leadership) as any comes from a Fortune article, which states: “When you boil it all down, contemporary leadership seems to be a matter of aligning people towards common goals and empowering them to take the actions needed to reach them.”⁶

The aim of this chapter then is to introduce one of the most researched subjects in the field of behavioural science, that of leadership. Before introducing path-goal theory (the subject

ignores the kind of organisation and culture in which leaders function, the relationships between leaders and superiors, external constituencies, peers, and the kind of product or service provided by the leader’s organisation. Moreover, the leadership literature is based on a limiting set of assumptions, mostly reflecting Western industrialised culture. Almost all of the prevailing theories of leadership — and about 98% of the empirical evidence at hand — are rather distinctly American in character: individualistic rather than collectivistic, stressing follower responsibilities rather than rights, assuming hedonism rather than commitment to duty or altruistic motivation, assuming centrality of work and democratic value orientation, and emphasising assumptions of rationality rather than asceticism, religion, or superstition.

⁵ Finding out what makes the visionary hero, the super human or the great man (or woman) tick has become an obsession: the hope is that once these attributes are isolated, they can in turn be replicated and through training, be ‘inculcated’ in others.

⁶ See Stratford Sherman, ‘How tomorrow’s best leaders are learning their stuff’, *Fortune* November 27, 1995, pp 91-92.

matter for this thesis), the chapter will examine: the nature of leadership; definitions of leadership; leadership effectiveness; levels of conceptualisation of leadership; a brief overview of the major research approaches to leadership; and contingency approaches to leadership. In addition, the research objective and research strategy will be introduced before a summary of chapter 1 is provided.

This 'background theory' will, therefore, describe what developments and controversies have hitherto interested the leading practitioners in the research field.

1.2 THE NATURE OF LEADERSHIP

Leadership is a subject that has generated interest among scholars and laypeople alike: the term connotes images of powerful, dynamic individuals who command victorious armies, direct corporate empires, or shape the futures of nations. Indeed, much of the description of history is of the story of military, political, religious and social leaders — the exploits of these brave and clever leaders are the essence of many legends and myths. Perhaps then, the widespread fascination with leadership may be because it is such a mysterious process, as well as one that touches everyone's life. For example, why did certain leaders (Ghandi, Mohammed and Mao Tse-tung) inspire such intense fervour and dedication; how did certain leaders (Julius Caesar, Charlemagne and Alexander the Great) build great empires; why were certain leaders (Winston Churchill and Indira Ghandi) suddenly deposed, despite their apparent power and record of successful accomplishments; why did some rather undistinguished people (Adolf Hitler and Claudius Caesar) rise to positions of great power;⁷

⁷ For an excellent analysis of this theme, see Kershaw, I. (2001): *'Hitler 1889 – 1936: Hubris'*. London: Penguin Books.

and why do some leaders have loyal followers who are willing to sacrifice their lives for their leader, whereas other leaders are so despised that their followers conspire to murder them?

Questions about leadership have long been the subject of speculation, but scientific research on leadership did not begin until the early part of the twentieth century, with the focus of much of the research being an attempt to define and analyse leadership effectiveness. Table 1.0 details a simple history of leadership theory.

GENERAL THEORY	YEAR	EXAMPLE	SPECIFIC THEORY	KEY AUTHORS
Great Man	1930	Leaders are born not made.	1.Iowa Leadership Studies	Lewin, Lippit, White
Trait	1940	Identification of personality traits of the leader.	1.Ohio State Leadership Studies 2.Early Michigan Leadership Studies	
Group/ Exchange	1950 1960 1970	Leadership is viewed more in terms of the leader's behaviour and how such behaviour affects and is affected by the group of followers.	1.Vertical Dyad Linkage Model. 2.Leader-Member Exchange. 3.Transaction Leadership.	Graen Graen & Haga Burns
Power-Influence	1960	Examines the effect of power and influence on Subordinates.		
Situation	1950 1960 1970	Emphasises the importance of contextual factors on leadership (i.e. nature of work/external environment/characteristics of followers).	1.Situational Theory.	Hersey & Blanchard
Contingency	1960 1970 1980 1990	Identifies aspects of the situation that 'moderate' the relationship of leader behaviours to leadership effectiveness.	1.Path-Goal. 2.Leadership Substitutes Theory. 3.Multiple Linkage Model. 4. Contingency Model. 5.Cognitive Resource Theory. 6.Normative Decision Theory.	House Kerr & Jermier Yukl Fielder Fielder & Garcia Vroom & Jago
Charisma	1970	Charismatic leaders are capable of having profound and extraordinary effects on followers.	1.1976 Theory of Charismatic Leadership.	House
Transformational	1980 1990 2000	Leaders shifting the values, beliefs and needs of followers.	1. Transformational Theory.	Bass
Dispersed, Informal, Emergent	2000 onwards	Informal leadership dispersed throughout organisation.	Numerous	Various

Table 1.0: A Simple History of Leadership Theory

In the research, researchers have attempted to discover what traits, abilities, behaviours, sources of power, or aspects of the situation determine how well a leader has been able to influence his/her followers and, therefore, accomplish group objectives. Moreover, the reasons why some people emerge as leaders and the determinants of the way the leader acts, are other important questions that have been investigated.

Amidst this flurry of activity, however, a number of concerns arise. There is no widely accepted definition of leadership, no common consensus on how best to develop leadership and leaders, and remarkably little evidence of the impact of leadership or leadership development on performance and productivity. Indeed, most initiatives appear to actively avoid addressing these issues and simply opt for the feel good factor of doing something about it whatever 'it' may be! Whilst action is frequently preferable to inaction, without at least some understanding of the underlying principles and assumptions about leadership and leadership development, it is likely that action may be misguided — at least reducing its possible effectiveness and at worst damaging what was there in the first place.⁸

It is argued that in this changing global environment leadership holds the answer not only to the success of individuals and organisations, but also to sectors, regions and nations. For example: "Our productivity as a nation is already lagging behind our competitors in North America and Europe. By tackling our management and leadership deficit with real vigour, we will unlock the doors to increased productivity, maximise the benefits of innovation, gain advantage from technological change and create the conditions for a radical transformation of public services." (DfES, 2002)

⁸ For an excellent example of this, see 'Leadership Development. How Government Works', a report by Audit Scotland (November 2005).

1.3 DEFINITIONS OF LEADERSHIP

The term leadership means many different things to different people; consequently, it carries extraneous connotations that create ambiguity of meaning, (Janda, 1960). In addition, confusion is caused by the use of other imprecise terms such as power, authority, management, administration, and control and supervision to describe the same phenomena. Of interest, an observation by Bennis (1959, p259) is as true today as it was when it was written almost 50 years ago: “Always, it seems, the concept of leadership eludes us or turns up in another form to taunt us again with its slipperiness and complexity so we have invented an endless proliferation of terms to deal with it and still, the concept is not sufficiently defined.” Moreover, theorists and researchers usually define leadership according to their individual perspective and the aspect of the phenomenon of most interest to them. For example, after a comprehensive review of the leadership literature, Stogdill (1974, p259) concluded that: “There are almost as many definitions of leadership, as there are persons who have attempted to define the concept”

Some representative definitions, over a quarter century, are as follows:

- leadership is: “The behaviour of an individual when he is directing the activities of a group toward a shared goal” (Hemphill & Coons, 1957, p7);
- leadership is: “The influential increment over and above mechanical compliance with the routine directives of the organisation” (Katz & Kahn, 1978, p528);

- leadership is: “The process of influencing the activities of an organised group toward goal achievement” (Rauch & Behling, 1984, p46);
- leadership is: “A process of giving purpose (meaningful direction) to collective effort, and causing willing effort to be expended to achieve purpose” (Jacobs & Jaques, 1990, p281);
- leadership is: “The process of making sense of what people are doing together so that people will understand and be committed”(Drath & Palus, 1994, p4); and
- leadership is: “The ability of an individual to influence, motivate, and enable others to contribute toward the effectiveness and success of the organization” (House *et al.*, 1999, p184).

Despite the recognition of the importance of leadership, however, there remains a certain mystery as to what leadership actually is or how to define it. At the heart of the problem of defining leadership lie two fundamental difficulties. First, like concepts such as 'love', 'freedom' and 'happiness', leadership is a complex construct open to subjective interpretation. Many people have their own intuitive understanding of what leadership is, based on a mixture of experience and learning, which is difficult to capture in a succinct definition. Second, the way in which leadership is defined and understood is strongly influenced by one's theoretical stance. There are those who view leadership as the consequence of a set of traits or characteristics possessed by leaders, whilst others view leadership as a social process that emerges from group relationships. Such divergent views will always result in a difference of opinion about the nature of leadership. Grint (2004)

identifies four problems that make consensus on a common definition of leadership highly unlikely:

- process: a lack of agreement on whether leadership is derived from the personal qualities (i.e. traits) of the leader, or whether a leader induces followership through what s/he does (i.e. a social process);
- position: is the leader in charge (i.e. with formally allocated authority) or in front (i.e. with informal influence);
- philosophy: does the leader exert an intentional, causal influence on the behaviour of followers or are their apparent actions determined by context and situation or even attributed retrospectively? and
- purity: is leadership embodied in individuals or groups and is it a purely human phenomenon?

In short, leadership is a complex phenomenon that touches on many organisational, social and personal processes. It depends on a process of influence, whereby people are inspired to work towards group goals, not through coercion, but through personal motivation.

Ultimately, however, the definition used is a matter of choice, informed by one's own predispositions, organisational situation and beliefs, but with an awareness of the underlying assumptions and implications of the particular approach.

1.4 LEADERSHIP EFFECTIVENESS

The focus of much of the research on leadership in the last 80 years has been on the determinants of leadership effectiveness.⁹ Like definitions of leadership, conceptions of leader effectiveness also differ from writer to writer. Most researchers evaluate leadership effectiveness in terms of the consequences of the leader's actions to followers and other organisational stakeholders. Many different types of outcomes have been used, including: the performance and growth of the leader's group or organisation; the group's preparedness to deal with challenges or crises; follower satisfaction with the leader; follower commitment to the group objectives; the psychological well-being and development of followers; the leader's retention of high status in the group; and the leader's advancement to higher positions of authority in the organisation. However, the most commonly used measure of leader effectiveness is the extent to which the leader's organisational unit performs its task successfully and attains its goals, whatever they may be. In some cases, objective measures of performance or goal attainment are available, such as profits, profit margin, sales increase, market share, sales relative to targeted sales, return on investment, productivity, cost per unit of output, costs in relation to budgeted expenditures, and so on. In other cases, subjective ratings of effectiveness are obtained from the leader's superiors, peers or subordinates. In addition, the attitude of followers toward the leader is another common indicator of leader effectiveness:¹⁰ For example, how well does the leader satisfy their needs and expectations; do followers like, respect and admire the leader; and are followers strongly committed to carrying out the leader's requests, or will they resist, ignore

⁹ There is a demand for this answer from both business (wanting to know the 'key predictors' of consolidated business-unit performance) and from academia (keen to find a way of measuring leadership).

¹⁰ Follower attitudes are usually measured with questionnaires or interviews.

or subvert them? Various objective measures of behaviour, such as absenteeism, voluntary turnover, grievances, complaints to higher management, requests for transfer, work slowdowns, and deliberate sabotage of equipment and facilities, serve as direct indicators of follower dissatisfaction and hostility toward the leader. Moreover, leader effectiveness is occasionally measured in terms of the leader's contribution to the quality of group processes, as perceived by followers or by outside observers. For example:

- does the leader enhance group cohesiveness, member cooperation, member motivation, problem solving, decision-making, and resolution of conflict among members?;
- does the leader contribute to the efficiency of role specialisation, the organisation of activities, the accumulation of resources, and the readiness of the group to deal with change and crisis?; and
- does the leader improve the quality of work life, build the self-confidence of followers, increase their skills, and contribute to their psychological growth and development?

1.5 LEVEL OF CONCEPTUALISATION FOR LEADERSHIP

Leadership can be conceptualised as an individual process, a dyadic process, a group process and an organizational process. Indeed, most leadership theories are focused on processes at only one of these levels, because it is very difficult to develop a multi-level theory that is also parsimonious and easy to apply (Yammarino *et al*, 2005). Which level is emphasized

will determine the type of criterion variables that are used to evaluate leadership and the type of mediating process used to explain effective leadership.¹¹ These levels can be viewed as a hierarchy, as depicted at Figure 1.1.

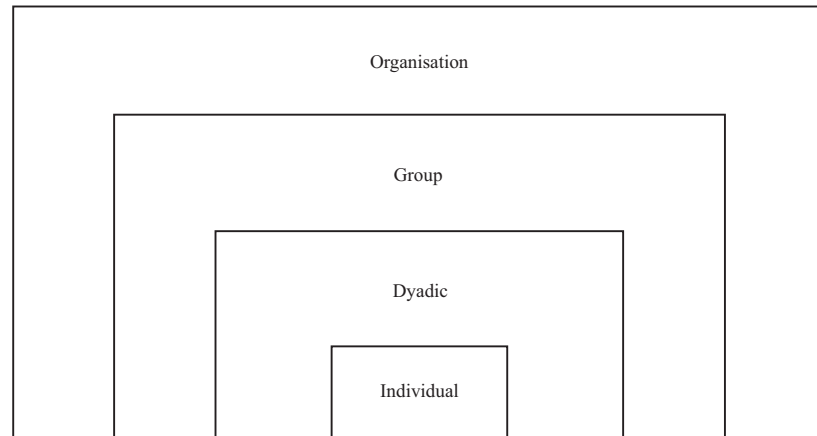


Figure 1.0: Levels of Conceptualisation for Leadership Processes

Theories conceptualised at a higher level usually assume that related processes occur at lower levels, even although they are not explicitly described. For example, in a cohesive team — with high mutual trust and cooperation — some assumptions can be made about the likely pattern of dyadic leader-member relationships, and about each individual's values, attitudes and perceptions.¹²

¹¹ In scientific research, a variable is a characteristic that can take on more than one value among members of a sample or population (e.g. sex, age, and ethnicity) and a variable must have a minimum of two values. Researchers believe that an Independent Variable (Iv) will change behaviour in the Dependent Variable (Dv) and therefore, researchers will manipulate the Iv and test to see if there is a measured change in the Dv. In addition, a Moderator Variable (Mv) can be selected to see if it affects the relationship between the primary (Iv) variable and the Dv. Finally, an Intervening Variable (InV) is a hypothetical one, whose effects are inferred from the effects of the Iv on the Dv. In the field of leadership, it can be argued that the behaviour of a leader influences the satisfaction and performance of the subordinate(s). In this case, the Iv is the behaviour of the leader (the 'cause'), the Mv is the 'relationship', and the Dv is the performance and satisfaction of subordinate (the 'effect').

¹² Path-goal theory is a dyadic theory of leadership. The dyadic approach to leadership focuses on the relationship between a leader and another individual who is usually a follower. Most dyadic theories view leadership as a 'reciprocal influence process' between the leader and another person. This approach has an implicit assumption that leadership effectiveness cannot be understood without examining how a leader and follower influence each other over time: key issues in this approach are how to develop a cooperative and trusting

1.6 OVERVIEW OF THE MAJOR RESEARCH APPROACHES

1.6.1 CLASSIC STUDIES OF LEADERSHIP

The Iowa, Ohio State and Michigan Studies are three of the earliest leadership studies.

THE IOWA LEADERSHIP STUDIES

A series of pioneering leadership studies conducted in the late 1930s by Ronald Lippitt and Ralph F White (under the general direction of Kurt Lewin) at the University of Iowa has had a lasting impact in leadership research. Lewin is recognised as the father of group dynamics, and as an important cognitive theorist. In the initial studies, 'hobby clubs' for 10-year-old boys were formed. Each club was submitted to three different styles of leadership: authoritarian, democratic and laissez-faire. The authoritarian leader was very directive and allowed no participation. This leader tended to give individual attention when praising and criticizing, but tried to be very or impersonal rather than openly hostile. The democratic leader encouraged group discussion and decision-making. This leader tried to be 'objective' in giving praise or criticism and to be one of the group in spirit. The laissez-faire leader gave complete freedom to the group — this leader essentially provided no leadership. The experiments were designed primarily to examine patterns of aggressive behaviour. However, an important by-product was the insight that was gained into the

relationship with the follower, and how to influence the follower to be more motivated and committed. Indeed, much of the research on power and influence tactics is also conceptualised in terms of dyadic processes and it is interesting to note that most theories of leadership effectiveness are conceptualized primarily at the dyadic level. These theories usually acknowledge that group and organizational processes are involved in leadership, but they do not explicitly describe the processes.

productive behaviour of a group.¹³ Overall, sweeping generalisations based on the Lippit and White studies are dangerous and pre-adolescent boys making masks and carving up soap are a long way from adults in complex, modern organisations. In addition, from the viewpoint of today's behavioural science research methodology, many of the variables were not controlled. Nevertheless, these leadership studies have important historical significance: they were the first attempts to determine — experimentally — what effects styles of leadership have on a group. The Iowa studies are too often automatically discounted or at least marginalized because they were experimentally crude. The value of the studies, however, was that they were the first to analyse leadership employing a structured methodology, and more importantly, they showed that different styles of leadership could produce different, complex reactions from the same or similar groups.

THE OHIO STATE LEADERSHIP STUDIES

At the end of World War II, the Bureau of Business Research at Ohio State University initiated a series of studies on leadership. An interdisciplinary team of researchers from psychology, sociology, and economics developed and used a Leader Behaviour Description Questionnaire (LBDQ) to analyse leadership in numerous types of groups and situations.¹⁴

Studies were made of Air Force Commanders and members of bomber crews; officers, non-

¹³ For example, the researchers found that the boys subjected to the autocratic leaders reacted in one of two ways: either aggressively or apathetically. Both the aggressive and apathetic behaviours were deemed to be reactions to the frustration caused by the autocratic leader. The researchers also pointed out that the apathetic groups exhibited outburst of aggression when the autocratic leader left the room or when a transition was made to a freer leadership atmosphere. The laissez-faire leadership climate actually produced the greatest number of aggressive acts from the group. The democratically-led group fell between the extremely aggressive group and the apathetic group under the autocratic leader.

¹⁴ Questionnaire research on effective leadership behaviour has been dominated by the influence of the Ohio State University Leadership Studies and Annex A is dedicated to an analysis of the LBDQ.

commissioned personnel, and civilian administrators in the Navy Department; manufacturing supervisors; executives of regional cooperatives; college administrators; teachers, principals, and school superintendents; and leaders of various student and civilian groups. The Ohio State studies started with the premise that no satisfactory definition of leadership existed. The Ohio State group was determined to study leadership, regardless of definition or of whether it was effective or ineffective. In the first step, the LBDQ was administered in a wide variety of situations. In order to examine how the leader was described, the answers to the questionnaire were then subjected to factor analysis.¹⁵ The outcome was amazingly consistent: the same two dimensions of leadership behaviour continually emerged from the questionnaire data. They were consideration and initiating structure. Leader initiating structure (LIS) and leader consideration (LC) are very similar to the time honoured military commander's function of mission and concern with the welfare of the troops.¹⁶ In simple terms, the Ohio State factors are task or goal orientation (LIS) and recognition of individual needs and relationships (LC).¹⁷ The two dimensions are separate and distinct from each other and the Ohio State studies certainly have value for the study of leadership. They were the first to point out the importance of both task and human dimensions in leadership and this two-dimensional approach lessened the gap between the

¹⁵ Factor analysis is a statistical approach that can be used to analyse interrelationships among a large number of variables and to explain these variables in terms of their common underlying dimensions (factors). The statistical approach involves finding a way of condensing the information contained in a number of original variables into a smaller set of dimensions (factors) with a minimum loss of information.

¹⁶ Of interest, when Colin Powell (considered to be one of the most effective and admired leaders of recent years) speaks on his own leadership process, he uses this two-dimensional approach.

¹⁷ LIS include activities such as planning, organizing and defining the tasks and work of people, for example, how work is done in an organization. LC addresses the social and emotional needs of individuals; for example, their recognition, work satisfaction, self-esteem and influencing their performance. Other researchers have conceptualised these two dimensions as effectiveness and efficiency (Barnard, 1938); goal achievement and group maintenance (Cartwright & Zander, 1960); instrumental and expressive needs, (Etzioni, 1961); and system-orientated or person-oriented behaviours (Stogdill, 1962).

strict task orientation (of the scientific management movement) and the human relations emphasis. Indeed, Halpin (1966) stated that one of the major findings, resulting from the LBDQ data, was that: "Effective leadership behaviour tends most often to be associated with high performance on both dimensions."

THE EARLY MICHIGAN LEADERSHIP STUDIES

At about the same time as the Ohio State studies were being conducted, a group of researchers from the Survey Research Centre at the University of Michigan began their studies of leadership. In the original study at the Prudential Insurance Company, results showed that supervisors of high-producing sections were significantly more likely to be general — rather than close — in their supervisory styles and employee-centred (i.e. having a genuine concern for their people). The general employee-centred supervisor, described here, became the standard-bearer for the traditional human relations approach to leadership and the results of the Prudential Studies were always cited when human relations advocates were challenged to prove their theories.

1.6.2 TRADITIONAL THEORIES OF LEADERSHIP

THE GREAT MAN THEORY

The leadership of great men has shaped history; for example, without Winston Churchill, the British would have given up in 1940. Indeed, Carlyle's (1841) work on heroes tended to reinforce the concept of the leader as a person who is endowed with unique qualities that capture the imagination of the masses. The hero would contribute somehow, no matter

where he was found.¹⁸ For example, Dowd (1936) maintained that: "There is no such thing as leadership by the masses. The individuals in every society possess different degrees of intelligence, energy, and moral force and in whatever direction the masses may be influenced to go, they are always led by the superior few". Military leaders, such as General Douglas MacArthur, and political figures such as President John F Kennedy are treated similarly. Dr Martin Luther King is considered a 'great man' whose leadership inspired the black civil rights movement. Moreover, influenced by Galton's (1869) study of the hereditary background of great men, several theorists have attempted to explain leadership based on inheritance. For example, Woods (1913) studied 14 nations — over periods of 5 to 10 centuries — and found that the conditions of each reign approximated to the ruler's capabilities. Woods argued that the man makes the nation and shapes it in accordance with his abilities. Furthermore, Wiggam (1931) advanced the proposition that the survival of the fittest (and intermarriage among them) produced an aristocratic class that differed biologically from the lower classes.

TRAIT APPROACH

After the Great Man theory, one of the earliest approaches to studying leadership was the trait approach. Systematic research concerned with leadership first focused on the search for individual characteristics that universally differentiate leaders from non-leaders. This research was largely theoretical: a large number of personal characteristics were investigated such as gender, height, physical energy and appearance as well as psychological traits and motives such as authoritarianism, intelligence, need for achievement, and the

¹⁸ Despite the examples of Joan of Arc, Elizabeth I and Catherine the Great, great women were often ignored in this approach to leadership.

need for power. The dominant part of this literature was published between 1930 and 1950. In influential reviews of the trait literature, Gibb (1947) and Stogdill (1948) identified several studies in which traits were associated with measures of leader effectiveness, with correlations as high as 0.50. Unfortunately, such findings were seldom replicated in multiple studies, and it appeared to scholars of the time that there were few, if any, universal traits associated with effective leadership. Consequently, there developed among the community of leadership scholars a near consensus that the search for universal traits was futile. One problem with early trait research was that there was little empirically substantiated personality theory to guide the search for leadership traits. Consequently, there were few replicative investigations of the same traits and it is possible that many of the measures had limited validity. Because of the lack of theory and valid measurement instruments, both the traits studied and the way they were operationalised varied widely among investigators. Further, neither specific situational demands of leaders nor the degree to which the situation permitted the behavioural expression of personality inclinations were taken into account. Finally, trait studies were almost entirely based on samples of adolescents, supervisors and lower-level managers, rather than individuals in significant positions of leadership, such as high-level managers and chief executives with overall responsibility for organizational performance.

THE LEADER BEHAVIOUR PARADIGM

Following the disenchantment with traits, there ensued a period of almost 30 years during which leaders were studied either by observing their behaviour in laboratory settings or by asking individuals in field settings to describe the behaviour of individuals in positions of

authority, and relating these descriptions to various criteria of leader effectiveness. Three influential groups of investigators pursued the quest for explanations of leader effectiveness in this manner. These were Robert Bales and his associates at Harvard, members of the Ohio State Leadership Centre, and members of the Institute for Social Research at the University of Michigan. Research conducted within this paradigm became known as the behavioural school of leadership. One of the major empirical contributions from the behavioural school was the identification of two broad classes of leader behaviours — task-oriented and person-oriented behaviours — which were identified by repeated factor analyses conducted by the Ohio State group, interviews by the Michigan group, and observation of emergent leaders in laboratories by the Harvard group. A second major contribution of the behavioural paradigm was a more refined and detailed specification of task- and person-oriented behaviours. Unfortunately, there was no pattern of leader behaviour, which was found to be consistently associated with subordinates' satisfaction or any criteria of supervisor or manager effectiveness (House, 1971; and Larson, Hunt & Osborn, 1974). Research conducted within the leader behaviour paradigm shares several similarities with early research on leader traits:

- the research was based almost exclusively on observations of individuals who functioned at lower organizational levels and whose roles primarily concerned supervision;
- behavioural studies were frequently based on questionnaires that sought to elicit subordinates' recall of the behaviour of their superiors (presumably reflecting global

historical patterns of behaviour and relationships between leaders and followers) as well as specific recently enacted behaviours;

- the research of the behavioural school was largely inductive and lacked theoretical orientation; and
- many of the leader behaviour questionnaires were of questionable validity.

Whilst behavioural theories introduced the notion of different leadership styles, they gave little guidance as to what constitutes effective leadership behaviours in different situations. Indeed, most researchers today conclude that no one leadership style is right for every manager under all circumstances. Instead, situational theories were developed to indicate that the style to be used is dependent upon such factors as the situation, the people, the task, the organisation, and other environmental variables.

SITUATIONAL APPROACH

The situation approach to leadership began to receive increased attention in leadership theory from the 1950s onwards. The situational approach was called initially *Zeitgeist* (a German word meaning *spirit of the time*): the leader was viewed as a product of the time and the situation. Therefore, the person with the particular qualities or traits (that a situation requires) will emerge as the leader. In detail, the situational approach emphasizes the importance of contextual factors such as the nature of the work performed by the leader's unit, the nature of the external environment, and the characteristics of followers. Situational leadership theory has two major and important subcategories:

- One line of research is an attempt to discover the extent to which leadership processes are the same or unique across different types organisation, levels of management and cultures. The primary research method is a comparative study of two or more situations. The dependent variables may be managerial perceptions and attitudes, managerial activities and behaviour patterns, or influence processes.
- The other subcategory of situational research attempts to identify aspects of the situation that 'moderate' the relationship of leader behaviour (or trait) to leadership effectiveness. The assumption is that different behaviour patterns (or trait patterns) will be effective in different situations and that the same behaviour pattern (or trait pattern) is not optimal in all situations. Theories describing this relationship are called contingency theories of leadership and aspects of the situation that enhance or nullify the effects of a leader's traits or behaviours are called 'situational moderator variables'.

1.6.3 MODERN APPROACHES TO LEADERSHIP

James MacGregor Burns was the first to put forward the concept of 'transforming leadership'. To him, transforming leadership is: "A relationship of mutual stimulation and elevation that converts followers into leaders and may convert leaders into moral agents" (Burns, 1978). He went on to suggest that "Transforming leadership occurs when one or more persons engage with others in such a way that leaders and followers raise one another to higher levels of motivation and morality". At the heart of this approach is the moral dimension of leadership and an emphasis on the leaders' ability to motivate and empower

his/her followers. Burn's ideas were subsequently developed into the concept of 'transformational leadership' where the leader transforms followers: "The goal of transformational leadership is to 'transform' people and organisations in a literal sense — to change them in mind and heart; enlarge vision, insight, and understanding; clarify purposes; make behaviour congruent with beliefs, principles, or values; and bring about changes that are permanent, self-perpetuating, and momentum building" (Bass and Avolio, 1994). The transformational approach has been widely embraced within all types of organisations as a way of transcending organisational and human limitations and dealing with change. It is frequently contrasted with more traditional 'transactional leadership', where the leader gains commitment from followers based on a straightforward exchange of for example, pay and security in return for reliable work.

The concept of the 'charismatic leader', although introduced earlier (Weber, 1947; and House, 1977), became popular in the 1980s/90s when charisma was viewed as an antidote to the demoralising effects of organisational restructuring, competition and redundancies dominant at the time. The charismatic leader was seen as someone who could rebuild morale and offer a positive vision for the future. This approach, in effect, combines both notions of the transformational leader as well as earlier trait and 'great man' theories. Researchers have taken different positions, but overall four major characteristics of charismatic leaders can be identified (Northouse, 2004, p71):

- a dominant personality, desire to influence others and self confidence;
- strong role model behaviour and competence;

- articulation of ideological goals with moral overtones; and
- high expectation of followers and confidence that they will meet these expectations.

Despite the attention, confidence in this approach to leadership is rapidly declining. A number of high profile corporate scandals — plus the tendency of charismatic leaders to desert organisations after making their changes (often leaving even more significant challenges) — has highlighted that this may not be a sustainable way to lead. Because of the way which charismatic leadership presents the leader as a saviour, it is now often referred to as 'heroic leadership'. There is a resistance to this view of the leader within many industries and organisations are seeking alternatives that develop quieter, less individualistic leadership (Mintzberg, 1999; and Badaracco, 2002).

The notion of the 'servant leader' has been around for some time. Like Burn's early conceptions about transforming leadership, the emphasis is on the moral and ethical dimensions of leadership. The difference, however, is that the servant leader follows his/her path out of a desire to serve rather than out of a desire to lead: "The servant-leader is servant first...it begins with the natural feeling that one wants to serve, to serve first. Then conscious choice brings one to aspire to lead. He or she is sharply different from the person who is leader first, perhaps because of the need to assuage an unusual power drive or to acquire material possessions." (Greenleaf, 1970). The focus on serving a greater purpose has made this approach popular within the church and non-profit sector but has had limited impact in more commercial sectors. A related concept that has had wider acceptance is that of 'team leadership'.

Katzenbach and Smith (1993) emphasise the importance of leaders knowing when to follow and the importance of the leader acting as a facilitator rather than director. They propose that the leader should ask questions rather than giving answers, provide opportunities for others to lead them, do real work in support of others instead of only the reverse, become a matchmaker instead of a 'central switch', and seek a common understanding instead of consensus. Belbin (1993) presents a similar image of the team leader as someone who chooses to delegate and share team roles, builds on and appreciates diversity, seeks talented people, develops colleagues, and creates a sense of mission.

An increasing awareness of the importance of social relations in the leadership contract, the need for a leader to be given authority by their followers and a realisation that no one individual is the ideal leader in all circumstances have given rise to a new school of leadership thought. Referred to as 'informal', 'emergent', 'dispersed' or 'distributed' leadership, this approach argues a less formalised model of leadership (where leadership responsibility is dissociated from the organisational hierarchy). It is proposed that individuals at all levels in the organisation and in all roles (not simply those with an overt management dimension) can exert leadership influence over their colleagues and thus influence the overall direction of the organisation.

A still more radical process view of leadership encourages a different approach to the identification and development of leadership within organisations. It promotes a focus on the way relationships give rise to varying identities, each defined by how they relate to others. Therefore, we should talk of a leader/follower effect rather than 'leaders' and 'followers' per se. This draws attention to the outcomes of effective leadership rather than

the necessary precursors or behaviours, and on the development and promotion of leadership skills within all people at all levels in the organisation rather than just those at the top of the hierarchy. The aim is to produce an ambience and culture that encourages high levels of integrity, creativity, imagination, care and collective ambition for excellence. The process view also draws attention to the emergent nature of leadership. It is not a fixed entity, but rather a flowing and evolving process whereby different 'leaders' may become revealed over time as a consequence of group interaction.

Despite being presented as a chronological sequence, many of the ideas presented remain popular today and there is no consistent agreement between academics or practitioners as to which is preferable or most effective. Northouse (2004) offers some useful comparisons as to how leadership is currently conceived:

- Trait versus process leadership: the trait approach proposes that leadership is a quality that resides within specific individuals, whereas the process view sees it as a phenomenon that resides in the context and behaviours of interacting people.
- Assigned versus emergent leadership: assigned leadership refers to situations where the leader has been formally assigned his/her role, whereas emergent leadership is where a leader becomes visible because of the way other group members respond to him/her.
- Leadership and power: power and leadership are related because both involve a process of influence. In organizations, it is possible to distinguish between position power (where authority is assigned by rank) and personal power (where authority is

assigned by followers). True leadership tends to rely on a power that arises from relationships and a desire of followers to be 'led'.

- Leadership and coercion: coercion is a form of power that relies on the use (or threat) of force. Classic examples of coercive leaders include Adolf Hitler, Jim Jones and David Koresh who used power for their own aims rather than the general benefit of the group. Such methods and techniques are generally not included in models of what 'good' leadership is about.
- Leadership and management: leadership and management are phenomena that have a lot in common. Both involve influence, working with people and goal achievement; however, to be successful, these two activities need to be balanced and matched to the demands of the situation.

In truth, there is no one theory that can explain all circumstances; each has its strengths and weaknesses and the choice as to which is accepted owes as much to personal beliefs and experience as to empirical evidence. The trait approach, for example, whilst problematic could prove useful when attempting to identify or recruit a leader. The behaviour approach tells leaders what they should do, rather simply focussing upon which attributes they should possess. The situational approach encourages the leader to consider the nature of the task and followers and to adapt his/her style accordingly. The transformational approach offers guidance as to the most appropriate leadership style in times of change. In addition, servant, team and distributed leadership offer alternative ways of conceiving the leadership process, the manner in which it occurs and the associated values and ethics.

1.7 PATH-GOAL THEORY

1.7.1 CONTINGENCY THEORIES: MORE THAN THE SITUATION.

The situational approach to leadership contains an underlying assumption that different situations require different types of leadership, while the contingency approach to leadership attempts to specify the conditions or situational variable that ‘moderate’ the relationship between leader behaviour and performance criteria/effectiveness. House's *A Path-Goal Theory of Leadership Effectiveness* (1971) included the interaction of leadership behaviours with situation characteristics in determining the leaders' effectiveness; in this way, the leader makes their behaviour contingent on certain aspects of the situation in order to improve leadership effectiveness.

1.7.2 ORIGIN OF PATH-GOAL THEORY

Path-goal theory is a widely recognised theoretical development from contingency approach to leadership research and is derived from the expectancy theory of motivation.¹⁹ Although Georgopoulos *et al* (1957) and his colleagues at the University of Michigan's Institute of Social Research used path-goal concepts and terminology many years before, the modern development of path-goal theory is usually attributed to Evans (1970) and House (1971), who wrote separate papers on the subject. In essence, the path-goal theory attempts to explain the impact that leader behaviour has on subordinate motivation, satisfaction and performance. Of note, the reinforcement of change in the subordinate by the leader is a prominent aspect of path-goal leadership. Georgopoulos, Mahoney, and Jones (1957) and

¹⁹ Chapter 2 offers an analysis of the expectancy theory of motivation.

Evans (1970) suggested that the successful leader shows a follower the rewards (goals) that are available to him or her. The leader also shows the follower the behaviours (paths) through which the rewards may be obtained (House, 1971). The leader clarifies the goals to the follower, as well as the paths to those goals. This clarification enhances the psychological state of the follower and arouses them to increase their efforts to perform well. Thus, the followers achieve satisfaction from the job to be done. Moreover, the leaders may enhance satisfaction with the work itself as well as provide valued extrinsic rewards, such as recommendations for pay increases that are contingent on the subordinates' performance.²⁰ Path-goal theory suggests that these various leadership behaviours can be and actually are used by the same leader in different situations. In addition, follower and situational moderator (SM_v) variables were identified. Therefore, by employing behaviour contingent on the SM_vs, the leader attempts to influence subordinates' perceptions and motivate them, which in turn leads to their satisfaction and performance. In other words, by doing the preceding, the leader attempts to make the path to subordinates' goals as smooth as possible. However, to accomplish this path-goal facilitation, the leader must use the appropriate style contingent on the situational variables present. Figure 1.1 shows a simplified model of path-goal theory.

²⁰ The leader, however, needs to be able to control the rewards that subordinates value.

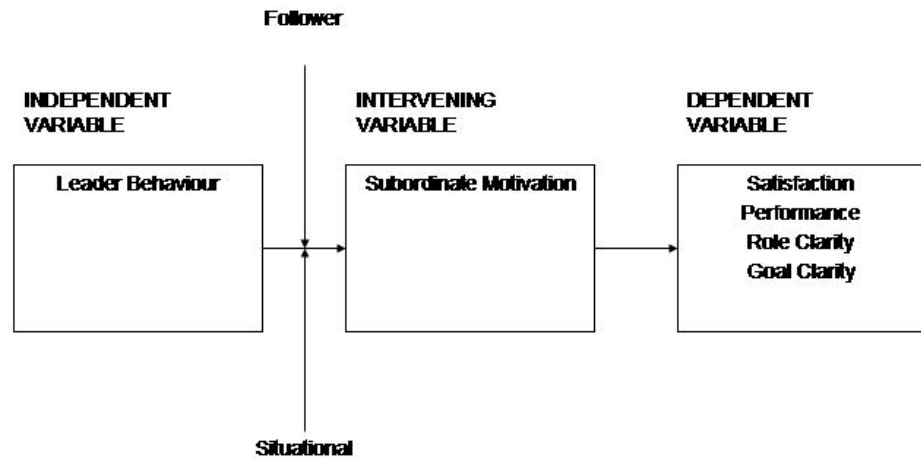


Figure 1.1: A Simple Model of Path-Goal Theory

Two seminal papers were published on path-goal theory in the 1970s: *A Path-Goal Theory of Leadership Effectiveness* (House, 1971) and *Path-Goal Theory of Leadership* (House & Mitchel, 1974). In the next 20 years, a significant amount of research was undertaken in this field and the resulting empirical tests suggested the theory was in need of reformulation. This became *The Reformulated 1996 Path-Goal Theory of Work Unit Leadership*.

1.8 RESEARCH OBJECTIVE

This study has one objective: to evaluate *The Reformulated 1996 Path-Goal Theory of Work Unit Leadership* via Structural Equation Modelling.

1.9 RESEARCH STRATEGY

1.9.1 CLASSIFYING THE RESEARCH

This research can be classified around four dimensions:

- Field of the research — Social Science.
- Purpose of the research — To evaluate and advance understanding of *The Reformulated 1996 Path-Goal Theory of Work Unit Leadership*.
- Approach to the research — Field and Survey Techniques.
- Nature of the research — Applied Research.

1.9.2 A STRUCTURE TO THE RESEARCH

The research strategy has four pillars, which allows structure to the subsequent investigation: first, background theory, followed by focal theory, then data theory and finally contribution:²¹

- **Background Theory.** The aim of the background theory is to establish what developments and controversies have hitherto interested the leading practitioners in the research field. The background theory is established via a literature review, undertaken in chapters 1, 2 & 3.
- **Focal Theory.** The second pillar of the research strategy is the focal theory. Chapters 4, 5 & 6 detail what is being researched and why. Thus, these chapters state and explain the research methodology and explain the design of the study, in terms of quantitative research techniques.
- **Data Theory.** The third pillar of the research strategy is the development of data theory. Chapters 7 & 8 are dedicated to the gathering of data, the subsequent analysis and discussion of this material.
- **Contribution.** The contribution is the final pillar of the research strategy. Here, the significance of the analysis is underlined. Therefore, in chapter 9, the study objective is re-stated, conclusions are drawn, limitations of the research stated and recommendations for areas of further study explained.

A simplified representation of this research strategy is shown in Table 1.1.

²¹ See 'How To Get a PhD' by Philips, E. M., & Pugh, D. S (1987), Oxford University Press.

RESEARCH STRATEGY			
Background Theory	Focal Theory	Data Theory	Contribution
Literature Review:	Research Methodology:	Presentation, Analysis and Discussion of Results:	Conclusions:
Chapter: 1, 2, 3	Chapter: 4, 5, 6	Chapters: 7, 8	Chapters: 9

Table 1.1: Research Strategy

1.10 SUMMARY OF CHAPTER ONE

1.10.1 INTRODUCTORY REMARKS

Leadership has probably been written about, formally researched and informally discussed more than any other single topic, and despite all the attention given to leadership, there is still considerable controversy with this subject.

1.10.2 THE NATURE OF LEADERSHIP

In the research on leadership, behavioural scientists have attempted to discover what traits, abilities, behaviours, sources of power, or aspects of the situation determine how well a leader is able to influence followers and accomplish group objectives. Moreover, the reasons why some people emerge as leaders and the determinants of the way the leader acts, are other important questions that have been investigated, but the predominant concern has been leadership effectiveness.

1.10.3 DEFINITIONS OF LEADERSHIP

There are almost as many definitions of leadership, as there are persons who have attempted to define the concept. Most definitions reflect the assumption that leadership involves a social influence process whereby one person exerts intentional influence over other people to structure the activities and relationships in a group or organisation. Otherwise, the definitions differ in many respects, including who exerts influence, the intended purpose of the influence, the manner in which influence is exerted, and the outcome of the influence

attempt. There is no 'correct' definition; it is only a matter of how useful the definition is for increasing our understanding.

1.10.4 LEADERSHIP EFFECTIVENESS

Most researchers evaluate leadership effectiveness in terms of the consequences of the leader's actions on followers and other organisation stakeholders; however, the choice of outcome variables differs considerably from researcher to researcher. Because of these complexities and the preference of different stakeholders for different criteria, a variety of representative criteria should be used in research on leadership effectiveness.

1.10.5 LEVEL OF CONCEPTUALISATION OF LEADERSHIP

Leadership can be conceptualised as an individual process, a dyadic process, a group process and an organizational process. What level is emphasized will determine the type of criterion variables that are used to evaluate leadership and the type of mediating process used to explain effective leadership.

1.10.6 MAJOR RESEARCH APPROACHES TO LEADERSHIP

Most leadership theories and studies take a very narrow perspective and examine only one aspect of the process. A general theory of leadership that explains all aspects of the process adequately has yet to be developed.

1.10.7 PATH-GOAL THEORY

Path-goal theory is a widely recognized theoretical development from the contingency approach to leadership research and is derived from the expectancy framework of motivation theory. The modern development is usually attributed to Evans (1970) and House (1971). In essence, path-goal theory attempts to explain the impact that leader behaviour has on subordinate motivation, satisfaction and performance. This approach suggests that leadership behaviours can be and actually are used by the same leader in different situations. The substantial amount of empirical research conducted to test path-goal theory suggested that the path-goal theories were in need of reformulation, namely *The Reformulated 1996 Path-Goal Theory of Work Unit Leadership*.

1.10.8 RESEARCH OBJECTIVE

This study has one objective: to evaluate *The Reformulated 1996 Path-Goal Theory of Work Unit Leadership* via Structural Equation Modelling.

1.10.9 RESEARCH STRATEGY

A research strategy offers a template to the investigation.

CHAPTER 2

THE ORIGIN AND HISTORY OF PATH-GOAL THEORY

2.1 INTRODUCTORY REMARKS

The objective of this thesis is to evaluate *The Reformulated 1996 Path-Goal Theory of Work Unit Leadership* via Structural Equation Modelling. Robert House authored the '1996 Theory' in light of considerable research and testing of *A Path-Goal Theory of Leadership Effectiveness* (1971) and *Path-Goal Theory of Leadership* (1974). The aim of this chapter is to review the 1971 and 1974 theories. In detail then, the chapter will outline the origin of path-goal theory, will examine *A Path-Goal Theory of Leadership Effectiveness* and describe *Path-Goal Theory of Leadership*. Finally, a summary of Chapter 2 will be offered.

2.2 THE ORIGIN OF PATH-GOAL THEORY

Path-goal theory was advanced from previous work undertaken on path-goal theory by Georgopoulos *et al* (1957) and from the extant research into expectancy theory of motivation (Vroom, 1964; and Porter and Lawler, 1967). In 1971, Robert J House developed 'path-goal theory' to reconcile prior findings (and anomalies) resulting from quantitative investigations into the effects of LIS and LC on subordinate satisfaction and performance.²² The findings (pre-1971) were mixed: some studies showed positive relationships between these two Ivs (LIS and LC) and subordinate satisfaction and

²² Prior to the introduction of *A Path-Goal Theory of Leader Effectiveness*, the leadership literature was dominated by concerns with — and research on — task (LIS) and person (LC) orientation, and the most frequently used measures were the Ohio State Scales (See again, Annex A).

performance (the Dvs) and some studies found either no such relationships, or a positive relationship between only one of the two leader behaviours (LIS & LC) and satisfaction and performance. Furthermore, several studies showed negative relationships between LIS and various indicators of subordinate satisfaction (Korman, 1966).

A Path-Goal Theory of Leader Effectiveness has its roots in Evans' (1970) paper, *The Effects of Supervisory Behaviour on the Path-Goal Relationship*. In this paper (Evans, 1970), the relationship between the Ohio State measures of LIS & LC and follower perceptions of path-goal relationships (expectancies and instrumentalities) is assessed.²³ Evans (1970) found support for the hypothesis that leader behaviours were positively related to follower path-goal perceptions in one organization, but not in a second organization. Evans, therefore, suggested that the effects of the two leader behaviours were likely to be contingent on the organizational context in which the leaders and followers worked. In parallel, Filley & House (1969) established a positive relationship between LIS and the satisfaction of employees (white-collar professionals) in the research and engineering departments of large manufacturing organizations. Such a relationship was not found in prior studies: the literature at that time included only reports of negative relationships between LIS and subordinate satisfaction (Korman, 1966). House (prior to the publication of his 1971 paper), therefore, recognised that the relationship between LIS and subordinate satisfaction was contingent on the degree to which subordinates required clarification of the behaviours required of them in order to perform effectively.

²³ Expectancy and Instrumentality are key dimensions in expectancy theory of motivation. These dimensions will be discussed later in this chapter. However, at this stage, 'expectancy' relates efforts to first-level outcomes (the probability that a particular action or effort will lead to a particular first level outcome), whereas instrumentality refers to the degree to which a first-level outcome will lead to a desired second-level outcome.

2.2.1 SCOPE OF PATH-GOAL THEORY

The scope of path-goal theory reflects the dominant paradigm of the study of leadership throughout the 1970s. Path-goal theory is concerned with how formally appointed superiors affect the motivation, satisfaction and performance of subordinates. It is a dyadic theory of leadership in that it does not address the effect of leaders on group or work units, but rather the effects of superiors on subordinates. Consistent with the dominant leadership paradigm of the time, path-goal leadership is primarily a theory of task- and person-orientated supervisory behaviour. Also consistent with this dominant paradigm, it does not concern the leadership of entire organizations, leadership as it affects several levels of managers and subordinates in organizations, the political behaviour of leaders, the strategic leadership of organizations, or leadership, as it relates to change. In the initial version of the theory (House, 1971, p324), it is asserted that: “The motivational function of the leader consists of increasing personal payoffs to subordinates for work-goal attainment and making the path to these payoffs easier to travel by clarifying it (the path), reducing roadblocks and pitfalls, and increasing the opportunities for personal satisfaction en-route.” The essential notion underlying path-goal theory, therefore, is that individuals, in positions of authority (i.e. superiors), will be effective — to the extent that they compliment the environment in which their subordinates work — by providing the necessary cognitive clarification to ensure that they (the subordinates) can attain work goals and that they (the subordinates) will experience intrinsic satisfaction and receive valent rewards as a result of work goal attainment. To the extent that the environment does not provide for clear causal linkages between effort and goal attainment, and between goal attainment and extrinsic rewards, it is the leader’s function to arrange such linkages. To the extent that subordinates

do not perceive such linkages when they do indeed exist, it is the function of the leader to clarify such perceptions. Finally, to the extent that subordinates lack support or resources required to accomplish work goals, it is the leader's function to provide such support and resources. Thus, consistent with Katz and Kahn's (1978, p528) definition of leadership, the role of the leader is to provide the necessary incremental function, support and resources, over and above those provided by the formal organization or the subordinate's environment, to ensure both effective subordinate satisfaction and performance. According to path-goal theory, therefore, leaders are justified in their role by being instrumental to the satisfaction and performance of subordinates.²⁴

The Ivs of path-goal theory are leader behaviours. The seminal paper in which the theory was advanced (House, 1971), made assertions about two general classes of leader behaviour: directive behaviour (similar to LIS) and supportive leadership (similar to LC). Figures 2.0 & 2.1 suggest, in simple terms, the influence of directive leadership behaviour and supportive leadership behaviour on subordinate effort respectively.

²⁴ The effect of a leader's actions on subordinate satisfaction is not necessarily the same as the effect on subordinate performance. Depending on the situation, leader behaviour may affect satisfaction and performance the same way, or both differently, or one but not the other.

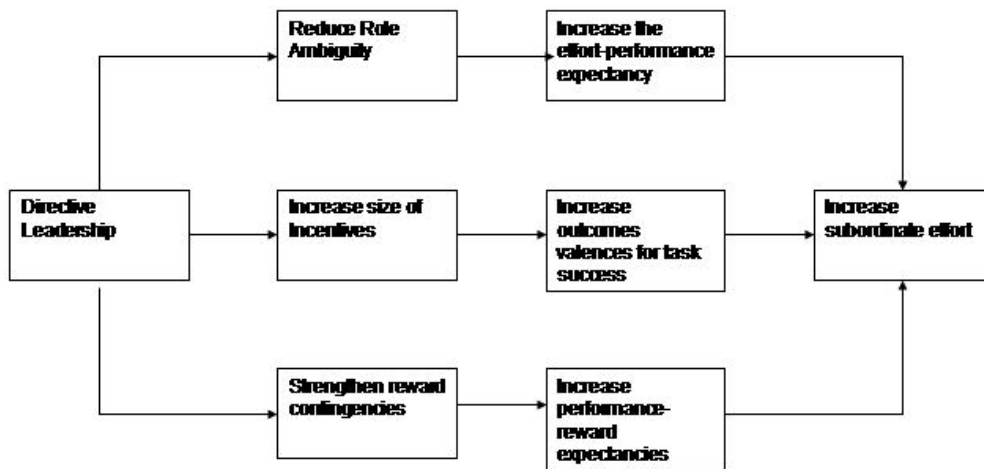


Figure 2.0: Directive Leadership Behaviour as an Independent Variable

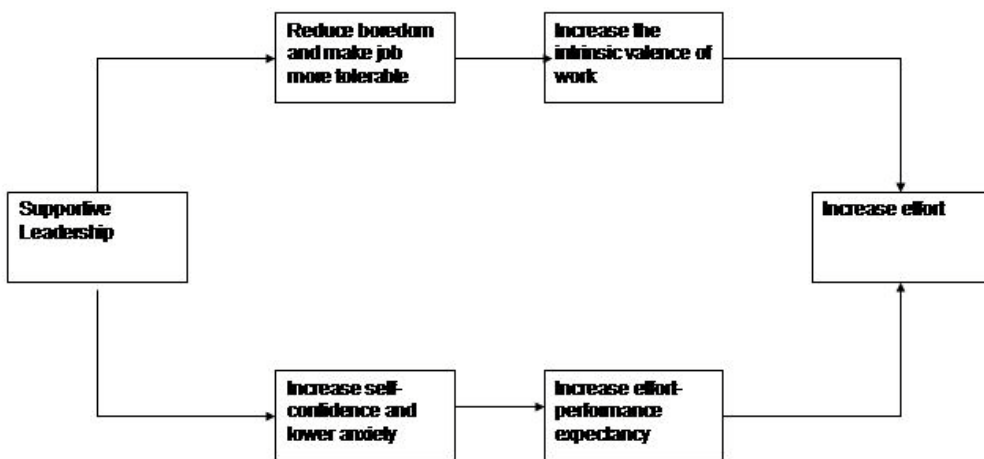


Figure 2.1: Supportive Leadership Behaviour as an Independent Variable

2.3 *A PATH-GOAL THEORY OF LEADERSHIP EFFECTIVENESS*

2.3.1 THEORETICAL BACKGROUND

The two major behavioural dimensions, which emerged from leadership research during the 1950s and 1960s, were those which sociologists termed instrumental and social-emotional (or expressive) leadership behaviour. These two behavioural dimensions are the same as LIS and LC respectively. LIS is used to describe the degree to which the leader initiates psychological structure for his/her subordinates by doing such things as assigning particular tasks, specifying procedures to be followed, clarifying his/her expectations of subordinates, and scheduling work to be done.²⁵ In contrast, LC is used to describe the degree to which the leader creates a supportive environment of psychological support, warmth, friendliness, and helpfulness, by doing such things as being friendly and approachable, looking out for the personal welfare of the group, doing little things for subordinates, and giving advance notice of change.

Research undertaken by Filley & House (1969) indicated that leaders who 'initiated structure' for subordinates were generally rated highly by their superiors (the superiors of the leaders) and had higher producing work groups than leaders who were low on LIS. In addition, Filley & House (1969) established that leaders who were considerate (showed LC behaviour) of their subordinates, had more satisfied employees. However, the evidence with respect to the relationship between LIS and satisfaction of subordinates was very mixed. For example, several studies (Filley & House, 1969; and Fleishman & Harris, 1962)

²⁵ This dimension of leader behaviour describes leaders who are similar to those prescribed by classic management theorists, that is, leaders who plan, organise, direct, and control.

showed that LIS could be resented by both unskilled and semi-skilled employees, and was a source of dissatisfaction, grievances and turnover. In juxtaposition, employees in large groups, were found either to prefer initiating structure more or to dislike it less than employees in smaller groups (Hemphill, 1950; Mass, 1950; and Vroom & Mann, 1960). In addition, Oaklander and Fleishman (1964) found LIS to be negatively correlated with inter-group conflict. Moreover, researchers found that among high-level employees, initiating structure was positively related to satisfaction, performance and perceptions of organizational effectiveness, but negatively related to role conflict and ambiguity (House *et al*, 1971a; House *et al*, 1971b; and Rizzo *et al*, 1970). In essence then, *A Path Goal Theory of Leader Effectiveness* was advanced to attempt to reconcile and integrate these conflicting results (of previous studies) under a set of general propositions.

2.3.2 BASIC THEORIES OF MOTIVATION

Most theories of motivation are developed from the 'need-drive-incentive sequence': the basic process involves needs, which set drives in motion to accomplish incentives. Drives, or motives, may be classified into primary, general, and secondary categories:

- The primary motives are unlearned and physiologically based: common primary motives are hunger, thirst, sleep, avoidance of pain, sex, and material concern.
- The general (or stimulus) motives are also unlearned but are not physiologically based: curiosity, manipulation, activity, and affection.

- Secondary motives are learned and are most relevant to the study of OB: the needs for power, achievement, affiliation, security, and status.

Besides the various needs, motivation can also be broken down into its source — extrinsic and intrinsic. Extrinsic motives are the visible consequences external to the individual (e.g. money) and usually contingently administered by others, to motivate the individual.

Intrinsic motives are internal to the individual, and are self-induced to learn, achieve, or in some way to 'better oneself'.

When the theories are focused specifically on work motivation, there are several popular approaches: content theories, process theories, and contemporary theories.

CONTENT THEORIES

The Maslow (hierarchy of needs), Herzberg (two-factor theory) and Alderfer (existence, relatedness and growth) models attempt to identify specific content factors in the employee (in the case of Maslow and Alderfer) or in the job environment (in the case of Herzberg) that are motivating. Although the content approach has surface logic, is easy to understand, and can be readily translated into practice, the research evidence points out some definite limitations. For example, there is very little research support for these models' theoretical basis and predictability, and the 'trade-off' for simplicity sacrifices the true understanding of the complexity of work motivation. On the positive side, however, the content models gave emphasis to important content factors that were hitherto ignored by the human relationists.

PROCESS THEORIES

Process theories of motivation provide a more robust theoretical explanation of work motivation. Vroom's (1964) expectancy model and the extensions and refinements advanced by Porter and Lawler (1967) help explain the important cognitive variables in motivation theory and how they relate to one another, in the complex process of work motivation (e.g. satisfaction and performance).²⁶

CONTEMPORARY THEORIES

The equity theory (of work motivation) has been around just as long as expectancy theories of work motivation. However, equity theory has received more recent attention in the organization behaviour field and its roots can be traced back to cognitive dissonance theory and exchange theory. Simply put, equity theory argues that a major input into job satisfaction and performance is the degree of equity (or inequity) that people perceive in their work situation; in other words, it is another cognitively-based motivation theory. In addition, theory developments specify that equity theory can be extended into what is commonly known as procedural justice.²⁷ equity theory explains conditions under which decision outcomes (e.g. pay levels, pay rises, and promotions) are perceived as being fair or unfair. Persons engaged in this type of thinking examine the results as opposed to how those results were achieved. Equity theory is based on a perception of distributive justice, which is an individual's cognitive evaluation regarding whether or not the amounts and

²⁶ The basic rationale behind expectancy theory is that behaviour is always purposeful and directed (first developed by Tolman *et al* (1930)), and that behaviour must be understood in terms of probabilities that a certain behaviour will lead to outcomes valued by the individual (Vroom (1964) applied Tolman's ideas to employee behaviour).

²⁷ *Procedural Justice* is concerned with the fairness of the procedure used to make a decision.

allocation of rewards in a social setting are unfair. In simple terms, distributive justice is one's belief that everyone should 'get what they deserve' and culturally, this Judeo-Christian ethic is based, in part, on the notion that divine rewards accrue to those who lead good lives and behave appropriately, even while here on earth.

2.3.3 EXPECTANCY THEORY OF MOTIVATION.

Expectancy theory (Georgopoulos, Mahoney, & Jones, 1957; and Vroom, 1964) is used to explain how a leader can influence subordinate satisfaction and effort. Expectancy theory describes work motivation in terms of a rational choice process in which a person decides how much effort to devote to the job at a given point of time. In choosing between a maximal effort and a minimal (or moderate) effort, a person considers the likelihood that task completion will result in desirable outcomes (e.g. higher pay, recognition, promotion, and sense of achievement) while avoiding undesirable outcomes (e.g. layoffs, accidents, reprimands, rejection by co-workers, and excessive stress). The perceived probability of an outcome is called an 'expectancy', and the desirability of an outcome is called its 'valence'. How all the many expectancies and valences for different outcomes and levels of effort combine to determine a person's motivation is still a matter of speculation and controversy. However, if subordinates believe that valued outcomes can be attained only by making a serious effort and they believe such an effort will succeed, then they will make the effort. The effect of a leader's behaviour is primarily to modify these perceptions and beliefs. In general, the central thrust of expectancy theory of motivation is that an individual will engage in a specific behaviour because of his/her expectations that this behaviour will result in a specific outcome with resultant valences (i.e. personal utilities or satisfactions) from this

outcome. Expectancy theory is now a leading explanation for employee behaviours such as turnover, absenteeism, joining a new organisation, career choice, performance, and leadership effectiveness. A simple model of expectancy theory is shown at Figure 2.2.

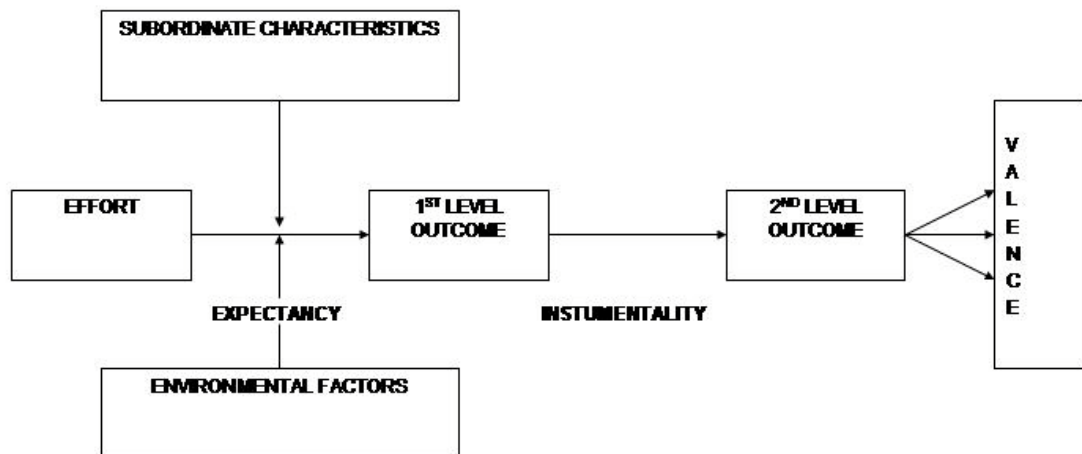


Figure 2.2: A Simple Model of Expectancy Theory

In Figure 2.2, the employee exerts effort to achieve a first-level outcome, for example, high performance on the job. He/she does this for two reasons:

- high performance may be positively valent in its own right because the employee enjoys the feeling of self-fulfilment for a job well done (intrinsic motivation); and

- the employee exerts effort in his/her belief that success at the first-level (performance) will yield a valued second-level outcome (the instrumentality is strongly positive).

By way of contrast, no effort will be forthcoming if the employee believes that no connection exists between effort and performance (e.g. "No matter how hard I try, I'll never be promoted".) In addition, prompt feedback about performance and rewards (second-level outcomes) is necessary to sustain high effort levels. Furthermore, subordinate characteristics (e.g. the ability of the employee) are an important component of the model: in other words, ability must be sufficient to attain a given level of performance. Thus, the employee must have ability to perform the task. If ability is low, no amount of effort will cause successful performance. Therefore, in general terms, performance is the product of motivation times ability. The next component of the model, which should be explained is the environmental factors (for example, the 'work environment'). The elements in this component include both hygienes and motivators.²⁸ For instance, the nature of supervision would be included in this component. The reward and performance appraisal systems would also be included in the work environment and the way work is organised is an element of the work environment. Finally, valence is defined as the personal attractiveness of different outcomes: if an outcome has a positive valence, then the employee is strongly pulled to those behaviours, which make that outcome more likely; and negative valence is attached to undesirable outcomes.

Expectancy theory has two classes of outcomes:

²⁸ For example: hygienes include salary, working conditions and company policy and administration; motivators include recognition, advancement and responsibility.

- First-level outcomes are the result of expending effort in some directed way:
important first-level outcomes at work would be job performance, coming to work early, leaving or accepting a position and working from home. These outcomes are important to organisations and they have profound effects on employees.
- Second-level outcomes occur after first-level outcomes and are the direct result of achieving or not achieving, first-level outcomes. Examples of second-level outcomes include getting a promotion, being transferred, receiving recognition, obtaining a pay rise and attending a training programme.²⁹

Instrumentality is the personal belief that first-level outcomes lead to second-level outcomes. If instrumentality is positive, then the employee believes a second-level outcome will occur given some level of performance. For example, if a worker believes that he/she will not be promoted if he/she continues to be the lowest producer in his unit, then he/she will increase his/her performance to gain the valued promotion. Negative instrumentality refers to the employee belief that a second-level outcome will not occur after a given first-level outcome.

2.3.4 THE RELATIONSHIP BETWEEN EXPECTANCY THEORY OF MOTIVATION AND PATH-GOAL LEADERSHIP

Expectancy theory of motivation was applied further by House (1971) and broken down into parts that have specific relevance for leadership using the concept of path instrumentality introduced by Evans (1968, p14): “The degree to which following a particular path (i.e. the

²⁹ It is important to note that employees assign valences to each type of second-level outcome.

behaviour of the individual) will lead to a particular outcome, is akin to the concept of 'expectancy' introduced by Vroom.” Accordingly, an individual makes probability estimates with respect to two linking points connecting behaviour with its outcomes, and subjectively places values on these outcomes. The magnitude of these probability estimates indicates the degree of path instrumentality of his/her behaviour for work-goal accomplishment and valence. This can be expressed in the following formula, and should be interpreted in concert with Figure 2.2.

$$M = IV_b + P_1 \left(IV_a + \sum_{i=1}^N (P_{2i} EV_i) \right)$$

$i = 1, \dots, n$

Where:

- M = motivation to work.
- IV_b = intrinsic valences associated with goal-directed behaviour.
- P_1 = path instrumentality of behaviour for work-goal attainment.
- IV_a = intrinsic valences associated with work-goal accomplishments.
- P_{2i} = path instrumentalities of work-goals for extrinsic valences.
- EV_i = extrinsic valences associated with work-goal accomplishments.

In work situations the individual estimates the path instrumentality, P_1 , of his/her behaviour for the accomplishment of some work goal. Here, he/she considers such factors as his/her ability to behave in an appropriate and effective manner as well as the barriers to work-goal accomplishment in the environment, and the support he/she will receive from others to accomplish the work goal. In addition, he/she estimates the path instrumentality, P_2 , of the work goal for attaining personal outcomes that have valence for him/her. For example, he/she estimates the probability that his/her superiors will recognise his/her goal accomplishment and reward him/her accordingly. He/she also considers and places subjective values on the intrinsic valence associated with work goal, IV_b , the intrinsic valence associated with the achievement of the work goal, IV_a , and the extrinsic valences associated with the personal outcomes that he/she accrues as a result of achievement in the work goal, EV_i .

The behaviour of the leader is clearly relevant to all of the independent variables in this formulation. First, the leader determines what extrinsic rewards should be associated with work-goal accomplishment, EV_i . For example, the leader has some influence over the extent to which work-goal accomplishment will be recognised as a contribution and whether it will be rewarded with financial increases, promotion, assignment of more interesting tasks or opportunities for personal growth and development. Consequently, the leader influences the magnitude of the sum of the personal outcomes available. Second, the leader, through his/her interaction with the subordinate, can increase the subordinate's path instrumentality concerning the rewards forthcoming as a result of work-goal accomplishment, P_2 . If the leader is consistent in their decision making, with respect to recognising and rewarding work-goal achievement, the leader will clarify the linkage

between work-goal achievement and rewards. Thus, if the leader consistently rewards achievement, this will most probably increase the subordinate's path instrumentality, P_2 , for valent personal outcomes. Third, through the leader's own behaviour, they can provide support for the subordinate's effort and thereby influence the probability that this effort will result in work-goal achievement, which is P_1 . Fourth, the leader influences the intrinsic valences associated with goal accomplishment, IV_a , by the way he/she delegate and assigns tasks to subordinates, which determine the amount of influence the subordinate has in goal setting and the amount of control he/she (the subordinate) is allowed in the task-directed effort. The greater the subordinate's opportunity to influence the goal and exercise control, the more intrinsically valent the work-goal accomplishment. Finally, the leader can increase the net intrinsic valences associated with goal-directed behaviour IV_b , by reducing frustrating barriers, being supportive in times of stress, permitting involvement in a wide variety of tasks, and being considerate of subordinate's needs.

2.3.5 PROPOSITIONS³⁰

House (1971) suggested the following general propositions in his interpretation of expectancy, as applied to leadership:

- The motivational functions of the leader consists of increasing personal pay-offs to subordinates for work-goal attainment, and making the path to these pay-offs easier to travel by clarifying it (work-goal attainment), reducing road blocks and pitfalls, and increasing the opportunities for personal satisfaction en route.

³⁰ A proposition is defined as a proposal for consideration (the content of a sequence that affirms or denies something and is capable of being true or false).

- In increasing path instrumentality (by clarifying path-goal relationships), the leader's behaviour will have positive motivational effects, to the extent that it reduces role ambiguity or makes possible, the exercise of externally imposed controls. Reducing role ambiguity results in increased motivation, because role ambiguity is both negatively valent to subordinates and because it is usually associated with low path instrumentality. Furthermore, externally imposed controls are motivational because they make possible the allocation of valences, contingent on desirable behaviour. Externally imposed controls result in improved performance, only to the extent that the rewards that are under the control of the leader are positively valent to the subordinates. In addition, punishments that are under the control of the leader are negatively valent to the subordinates, rewards and punishments are contingent on performance, and the contingency is clearly perceived by the subordinates. Whether performance — motivated by external controls — is satisfying to the subordinate depends on his/her unconscious needs, conscious values, and perceptions of equity in the exchange of efforts for rewards.
- Where the leader attempts to clarify path-goal relationships that are redundant with existing conditions, that is, where path-goal relationships are apparent because of the routine of the tasks, attempts by the leader to clarify path-goal relationships will result in increased externally imposed control and will be seen by subordinates as redundant. Although such control may increase performance, it will also result in decreased satisfaction.

- Leader behaviour directed at the ‘need-satisfaction’ of subordinates will result in increased performance, to the extent that such satisfaction increases the net positive valence associated with goal-directed effort.

2.3.6 HYPOTHESES³¹

From the above general propositions, House defined several specific hypotheses concerning LIS, LC, closeness of supervision, hierarchical influence, and authoritarianism. These hypotheses did not constitute an exhaustive list of relationships between the variables, but rather, served to illustrate how his general propositions could be operationalised:

- h1: LIS increases the path instrumentality for subordinates whose roles have non-routine task demands by decreasing role ambiguity.
- h2: informal leaders, high in LIS, influence positively the subjective probabilities that other group members assign to positively valent outcomes.
- h3: LIS and LC will have differential effects, depending on whether the task is satisfying or unsatisfying to the subordinate, and whether the task-role demands are clear or ambiguous: the more satisfying the task, the less positive the relationship between consideration and subordinate satisfaction and performance. These correlations will vary from insignificant to positive, depending on task satisfaction. For unsatisfying tasks, consideration will tend to offset dissatisfaction associated with

³¹ A hypothesis is defined as a supposition made as a starting point for further investigation from known facts.

the task; for satisfying tasks, consideration will be less important. The less satisfying the task the more negative will be the relationship between structure and satisfaction and the more positive will be the relationship between structure and performance. For unsatisfying tasks, structure will be viewed as an imposition of external control and, therefore, dissatisfying, but will also be required to motivate subordinate effort toward goal achievement. The more ambiguous the task, the more positive the relationship between LIS and subordinate satisfaction and performance. When task demands are self-evident due to a high degree of routinization, or where roles are clearly defined by such factors as mechanisation, legal constraints, contracts, professional ethics, or group norms, LIS will not result in role clarification and will be unsatisfying to subordinates.

- h4: where the follower's tasks are varied and interdependent, and where teamwork norms are not developed within the group, LIS and close supervision will regulate and clarify path-goal relationships. Therefore, structure and close supervision will result in increased coordination, satisfaction and performance.
- h5: where tasks are interdependent, varied, and ambiguous, consideration will result in social support, friendliness among group members, increased cohesiveness and team effort. These social outcomes will be positively valent to the members and thus increase the net sum of positive valences associated with interdependent jobs requiring cooperation and team spirit.

- h6: where tasks and/or the environment are frustrating and stress inducing, consideration will result in increased social support for followers and thus reduce negative valence associated with task-orientated behaviour.
- h7: where stress is from sources external to the work unit and tasks are ambiguous, structure will result in increased-ego protection, security, and satisfaction. In this instance, structure serves as an 'umbrella', which protects followers from externally imposed stress.
- h8: among hierarchically dependent employees — under leaders with high upward influence — consideration will be positively related to satisfaction and performance of subordinates. Among independent employees, or under leaders with low upward influence, consideration will have a lower positive relationship to subordinate satisfaction and performance. Leader influence permits the leader to have more control over rewards for subordinates and thereby permits the leader to make subordinate valences contingent on performance and to make the outcomes of work-goal attainment more valent or less valent.
- h9: under conditions of authoritarian or punitive leadership, both LIS and leader hierarchical influence will be negatively related to subordinate satisfaction. Under such conditions, subordinates will see both structure and influence as bases of authoritarian power.

2.3.7 RECONCILIATION OF PRIOR FINDINGS

The utility of the '1971 Theory' is its ability to reconcile what appeared to be conflicting results of prior research. For example, *A Path Goal Theory of Leader Effectiveness* offered an explanation for the positive correlations between LIS and satisfaction among the high occupational-level groups studied by House *et al* (1970, 1971a, and 1971b). The theory also explained the negative relationships found at lower occupational levels, by Fleishman & Harris (1962). If it can be assumed that lower level jobs are generally more routine, that their path-goal relationships are usually self-evident, and that the job itself is not intrinsically satisfying, then it can be hypothesised that LIS would be viewed by subordinates as being directed at keeping them working at unsatisfying activities. Although such control is likely to increase productivity by preventing work restrictions or slowdowns, it is also a source of dissatisfaction to employees. Another hypothesis derived from this theory explained the findings concerning the moderating effect of consideration in some studies and not in others. Where the path is not viewed as satisfying, that is, for lower level jobs, it can be hypothesised that consideration serves as a source of extrinsic social satisfaction and support to the employee, thus making the path easier to travel. Consequently for Fleishman & Harris' (1962) blue-collar workers, LC moderated the unsatisfying effects of leader structure; whereas, for higher-level jobs, where the path was intrinsically satisfying, the need for such support was lower and consequently consideration would be expected to have little or no moderating effect on the relationship between initiating structure and consideration. Similarly in the 'International Harvester Study' revealed by Fleishman (1971), high LIS was found to be related to foreman ratings of proficiency, but also higher grievances; high leader consideration was found to be related to

lower proficiency ratings, a tendency more pronounced in production than in other departments. The specific variable that was subsequently discovered to account for the differential relations across departments was pressure for output. If it can be assumed that the tasks in the production department were less satisfying, then it follows that under conditions of high pressure for output, LIS would be viewed as an externally imposed form of control. Such control would be more acceptable to higher managers, but resented by the subordinates on whom it was imposed. LC is more likely to serve as a stress-reducer as tasks become more satisfying and pressure for output increases. Thus the differential relationship found across types of departments can be explained in terms of differences in task satisfaction; that is, path valence and pressure for production differences. This explanation is directly deducible from the theory and again illustrates the ability of the theory to accommodate and explain otherwise confusing empirical findings.

2.3.8 CONCLUSIONS FROM *A PATH GOAL THEORY OF LEADER EFFECTIVENESS*

A Path-Goal Theory of Leader Effectiveness reconciled apparently conflicting findings from previous research. It also provided an integrated explanation of the results of findings about authoritarianism in leader hierarchical influence, closeness of supervision, initiating structure and consideration. The theory was tested by correlation tests of eight hypotheses derived from general propositions; the tests were somewhat weak, in that the theoretical constructs — such as intrinsic task satisfaction and ambiguity of task-role demands — were inferred from situational measures of task autonomy and job scope and from occupational characteristics of the populations studied. These inferences make the tests susceptible to the error of rejecting a valid hypothesis, so the tests are conservative ones. A further

limitation is inherently in cross-sectional survey research, which can rule out invalid hypotheses, but cannot establish causal relationships among the variables. However, the findings, when viewed collectively, generally support the theory. Among high occupational groups, LIS was generally positively related to subordinate satisfaction and performance. This relationship was accounted for in terms of variance in subordinate role ambiguity, which was shown to have a negative correlation within initiating structure. The relationship between leader structure, subordinate role ambiguity, and satisfaction, although significant and in the theoretically predicted direction, were quite low, probably because it was not possible to control for contaminating variables that would be expected to suppress these relationships. The relationships between LIS and LC and subordinate satisfaction and performance varied significantly and widely in the directions predicted when moderated by job scope. When moderated by task autonomy, the theoretical predictions were supported by one sample and not supported by another which raised a question about the appropriateness of task autonomy as an indicator of ambiguity of task role-role demands and satisfaction among blue-collar workers as well as a question about the validity of the general proposition from which the hypothesis was derived.

On balance, the ability of the theory to reconcile and integrate earlier findings, together with moderate-to-strong support for seven of the eight hypothesis tested (two of which were replicated in the second study) suggested that the theory showed promise and warranted further testing with more direct measurement of the theoretical constructs using experimental as well as correlational methods.

2.4 *PATH-GOAL THEORY OF LEADERSHIP*

2.4.1 ORIGIN

Although still in its infancy, House & Mitchell (1974) further advanced path-goal theory in their paper, *Path Goal Theory of Leadership*. Their main argument was that subordinates are motivated by leader behaviour to the extent that this behaviour influences expectancy, instrumentality, valence and ultimately, goal attractiveness. In addition, House and Mitchell (1974, p82) offered a new development in the research on dyadic theories of leadership: “While the state of theorising about leadership in terms of subordinates' paths and goals is in its infancy, we believe it is promising for two reasons. First, it suggests effects of leader behaviour that have not yet been investigated but which appear to be fruitful areas of inquiry. And, second, it suggests — with some precision — the situational factors on which the effects of leader behaviour are contingent”.

The initial theoretical work by Evans (1970) asserted that leaders would be effective by making rewards available to subordinates and by making these rewards contingent on the subordinate's accomplishment of specific goals. Evans argued that one of the strategic functions of the leader was to clarify (for subordinates) the kind of behaviour that leads to goal accomplishment and valued rewards — this function might be referred to as ‘path clarification’. Evans (1970) also argued that the leader increases the rewards available to subordinates by being supportive toward subordinates, i.e. by being concerned about their status, welfare and comfort. Leader supportiveness is in itself a reward that the leader has at his or her disposal, and the judicious use of this reward increases the motivation of

subordinates. Moreover, Evans studied the relationship between the behaviour of the leader and the subordinates' expectations that effort leads to rewards and he also studied the resulting impact on ratings of the subordinates' performance. He found that when subordinates viewed leaders as being supportive (considerate of their needs), and when these superiors provided directions and guidance to the subordinates, there was a positive relationship between leader behaviour and subordinates' performance ratings. However, leader behaviour was only related to subordinates' performance when the leader's behaviour was also related to the subordinates' expectation that their effort would result in desired rewards. Thus, Evans' findings suggested that the major impact of a leader on the performance of subordinates was to clarify the path to desired rewards and make such rewards contingent on effective performance. Stimulated by this line of reasoning, House (1971) explained the effects of two specific kinds of leader behaviour on the satisfaction of subordinates, the subordinates' acceptance of the leader, the expectations of subordinates that effort will result in effective performance, and that effective performance is the path to rewards. In advancing path-goal theory further, House & Mitchell (1974) added two more leader behaviours to House's (1971) theory. The four leader behaviours included in the '1974 Theory' are:

- Supportive leadership. Characterised by a friendly and approachable leader who shows concern for the status, well-being and needs of subordinates (such a leader does little things to make the work more pleasant, treats members as equals and is friendly and approachable).

- Directive leadership. Characterised by a leader who lets subordinates know what is expected of them, gives specific guidance as to what should be done and how it should be done, makes his or her part in the group understood, schedules work to be done, maintains definite standards of performance and asks that group members follow standard rules and regulations.
- Participative leadership. Characterised by a leader who consults with subordinates, solicits their suggestions and takes these suggestions seriously into consideration before making a decision.
- Achievement-oriented leadership. Sets challenging goals, expects subordinates to perform at their highest level, continuously seeks improvement in performance and shows a high degree of confidence that the subordinates will assume responsibility, put forth effort and accomplish challenging goals (this kind of leader constantly emphasises excellence in performance and simultaneously displays confidence that subordinates will meet high standards of excellence).

A number of studies suggest that these different leadership behaviours can be shown by the same leader in various situations. For example, a leader may show directiveness toward subordinates in some instances and be participative or supportive in other instances (House & Dessler, 1974; and Hill & Hughes, 1974). Thus, the traditional method of characterising a leader as either highly supportive or highly directive is invalid; rather, it can be concluded that leaders can vary their behaviour in a particular fashion in supervising their subordinates.

2.4.2 GENERAL PROPOSITIONS

Path-Goal Theory of Leadership has two general propositions: first, leader behaviour is acceptable and satisfying to subordinates to the extent that the subordinates see such behaviour as either an immediate source of satisfaction or as instrumental to future satisfaction; and second, the leader's behaviour will be motivational (i.e. it will increase subordinate effort) to the extent that such behaviour makes satisfaction of subordinate's needs contingent on effective performance and such behaviour complements the environment of subordinates by providing the coaching, guidance, support and rewards necessary for effective performance. These two propositions suggest that the leader has several strategic functions:

- to recognise and/or arouse subordinates' needs for outcomes over which the leader has come control;
- to increase personal payoffs to subordinates for work-goal attainment;
- to make the path for those payoffs easier to travel by coaching and direction;
- to help subordinates clarify expectancies;
- to reduce frustrating barriers; and
- to increase the opportunities for personal satisfaction contingent on effective performance.

2.4.3 SITUATIONAL MODERATOR VARIABLES

According to path-goal leadership, the effect of leader behaviour on subordinate satisfaction and performance depends on aspects of the situation, including task characteristics and subordinate characteristics. These SMVs determine both the potential for increased subordinate motivation and the manner in which the leader must act to improve motivation. Situational variables also influence subordinate preferences for a particular pattern of leadership behaviour, thereby influencing the impact of the leader on subordinate satisfaction.

House and Mitchell (1974) suggested two SMVs in their paper: follower and situational, with which the subordinates must cope with, in order to accomplish the work goals and to satisfy their needs.

2.4.3.1. Follower. Runyon (1973) and Mitchell *et al* (1975) show that subordinates' score on a measure called Locus of Control (LofC) moderates the relationship between participative leadership style and subordinate satisfaction. The LofC measure reflects the degree to which an individual sees the environment as systematically responding to his or her behaviour. People who believe that what happens to them occurs because of their behaviour are called internals; people who believe that what happens to them occurs because of luck or chance are called externals. Mitchell's (1975) findings suggest that internals are more satisfied with a participative leadership style and externals are more satisfied with a directive style. A second characteristic of subordinates on which the effects of leader behaviour are contingent is subordinates' perception of their own ability, with

respect to their assigned tasks. The higher the degree of perceived ability relative to task demands, the less the subordinate will view leader directive behaviour as acceptable.

Where the subordinate's perceived ability is high, such behaviour is likely to have little positive effect on the motivation of the subordinate and to be perceived as excessively close control. Thus, the acceptability of the leader's behaviour is determined in part by the characteristics of the subordinates.

2.4.3.2. Situational. This variable consists of those factors that are not within the control of the subordinate but which are important to satisfaction or the ability to perform effectively. The theory asserts that effects of the leader's behaviour on the psychological states of subordinates are contingent on other parts of the subordinates' environment that are relevant to subordinate motivation. Three broad classifications of this second SMv are the characteristics of the subordinates' tasks, the formal authority system of the organisation, and the primary work group. Assessment of the environmental conditions makes it possible to predict the kind and amount of influence that specific leader behaviours will have on the motivation of subordinates. Any of these three environmental factors can act upon the subordinate in any of three ways:

- to serve as stimuli that motivate and direct the subordinate to perform necessary task operations;
- to constrain variability in behaviour;³² and

³² Constraints may help the subordinate by clarifying expectancies that effort leads to rewards

- environmental factors may serve as rewards for achieving desired performance. For example, it is possible for the subordinate to receive the necessary cues to do the job (and the needed rewards for satisfaction) from sources other than the leader (e.g. co-workers in the primary work group).

Thus, the effect of the leader on subordinates' motivation will be a function of how deficient the environment is with respect to motivational stimuli, constraints or rewards. Moreover, with respect to the environment, the theory also asserts that when goals and paths to desired goals are apparent, because of the routine nature of the task, attempts by the leader to clarify paths and goals will be both redundant and seen by subordinates as imposing unnecessary, close control. Although such control may increase performance by preventing soldiering or malingering, it also will result in decreased satisfaction. Further, with respect to the work environment, the theory asserts that the more dissatisfying the task, the more the subordinates will resent leader behaviour directed at increasing productivity or enforcing compliance to organisational rules and procedures. Finally, with respect to environmental variables, the theory states that leader behaviour will be motivational to the extent that it helps subordinates cope with environmental uncertainties, threats from others or sources of frustration. Such leader behaviour is predicted to increase subordinates' satisfaction with the job context and to be motivational to the extent that it increases the subordinates' expectations that their effort will lead to valued rewards.

or by preventing the subordinate from experiencing conflict and confusion. Constraints also may be counterproductive to the extent that they restrict initiative or prevent increases in effort from being associated positively with rewards.

2.4.4 EMPIRICAL SUPPORT

The '1974 Theory' has been tested in a limited number of studies, which have generated considerable empirical support for their ideas. A brief review of these studies follows.

2.4.4.1. Supportive Leadership. The theory hypothesises that supportive leadership will have its most positive effect on satisfaction for subordinates who work on stressful, frustrating or dissatisfying tasks. This hypothesis was tested in 10 samples of employees (House & Dessler, 1974; and Szaladyi & Simms, 1974), and in only one of these studies was the hypothesis disconfirmed (Szaladyi & Simms, 1974). Despite some inconsistency in research on supportive leadership, the evidence is sufficiently positive to suggest that managers should be alert to the critical need for supportive leadership under conditions where tasks are dissatisfying, frustrating or stressful to subordinates.

2.4.4.2. Directive Leadership. Leader directiveness has a positive correlation with the satisfaction and expectancies of subordinates who are engaged in ambiguous tasks and has a negative correlation with satisfaction and expectancies of subordinates engaged in clear tasks. This suggests that when task demands are ambiguous or when the organisation procedures, rules and policies are not clear, a leader behaving in a directive manner complements the tasks (and the organisation) by providing the necessary guidance and psychological structure for subordinates. However, when task demands are clear to subordinates, leader directiveness is seen more as a hindrance.

2.4.4.3. Participative Leadership. In theorising about the effects of participative leadership, it is necessary to ask about the specific characteristics of both the subordinates

and their situation, which would cause participative leadership to be viewed as satisfying and instrumental to effective performance. House (1974) suggested that where participative leadership is positively related to satisfaction, regardless of the predispositions of subordinates, the tasks of the subjects appear to be ambiguous and ego-involving. In the studies in which the subjects' personalities or predispositions moderate the effect of participative leadership, the tasks of the subjects are inferred to be highly routine and/or non-ego-involving. House (1974) reasoned from this analysis that the task may have an overriding effect on the relationship between leader participation and subordinate responses, and that individual predispositions or personality characteristics of subordinates may have an effect only under some tasks. It was assumed that when task demands are ambiguous, subordinates would have a need to reduce the ambiguity. Further, it was assumed that when task demands are ambiguous, participative problem solving between the leader and the subordinate would result in more effective decisions than when the task demands are unambiguous. Finally, it was assumed that when the subordinates are ego-involved in their tasks, they are more likely to want to have a say in the decisions that affect them. Given these assumptions, the following hypotheses were formulated to account for the conflicting findings reviewed above:

- when subjects are highly ego-involved in a decision or a task and the decision or task demands are ambiguous, participative leadership will have a positive effect on the satisfaction and motivation of the subordinate, regardless of the subordinate's predisposition toward self-control, authoritarianism or need for independence; and

- when subordinates are not ego-involved in their tasks and when task demands are clear, subordinate who are not authoritarian and who have high needs for independence and self-control will respond favourably to leader participation and their opposite personality types will respond less favourably.

2.4.4.4. Achievement-Orientated Leadership. The theory hypothesized that achievement-oriented leadership will cause subordinates to strive for higher standards of performance and to have more confidence in their ability to meet challenging goals. A study by House, Valency & Van der Krabben (1974), provided a partial test of this hypothesis among white collar employees in service organisations. For subordinates performing ambiguous, non-repetitive tasks, House, Valency & Van der Krabben (1974) found a positive relationship between the amount of achievement orientation of the leader and subordinates' expectancy that their effort would result in effective performance. Stated less technically, for subordinates performing ambiguous, non-repetitive tasks, the higher the achievement orientation of the leader, the more the subordinates were confident that their efforts would pay off in effective performance. For subordinates performing moderately unambiguous and repetitive tasks, there was no significant relationship between achievement-oriented leadership and subordinate expectancies that their effort would lead to effective performance. Two plausible interpretations may be used to explain these data. First, people who select ambiguous, non-repetitive tasks may be different in personality from those who select a repetitive job and may, therefore, be more responsive to an achievement-oriented leader. Second, achievement orientation only affects expectancies in ambiguous situations because there is more flexibility and autonomy in such tasks. Therefore,

subordinates in such tasks are more likely to be able to change in response to such leadership style.

2.4.5 CONCLUSION

House and Mitchell (1974) described a useful theoretical framework for understanding the effect of leadership behaviour on subordinate satisfaction and motivation. At the time of publication (i.e. 1974), some researchers (Vroom, 1964; and Fielder, 1967) presented rather complex attempts at matching certain types of leaders with certain types of situations. A *Path Goal Theory of Leadership* went one step further: it not only suggested what type of style may be most effective in a given situation, it also attempted to explain why it was most effective. This is shown diagrammatically in Figure 2.3.

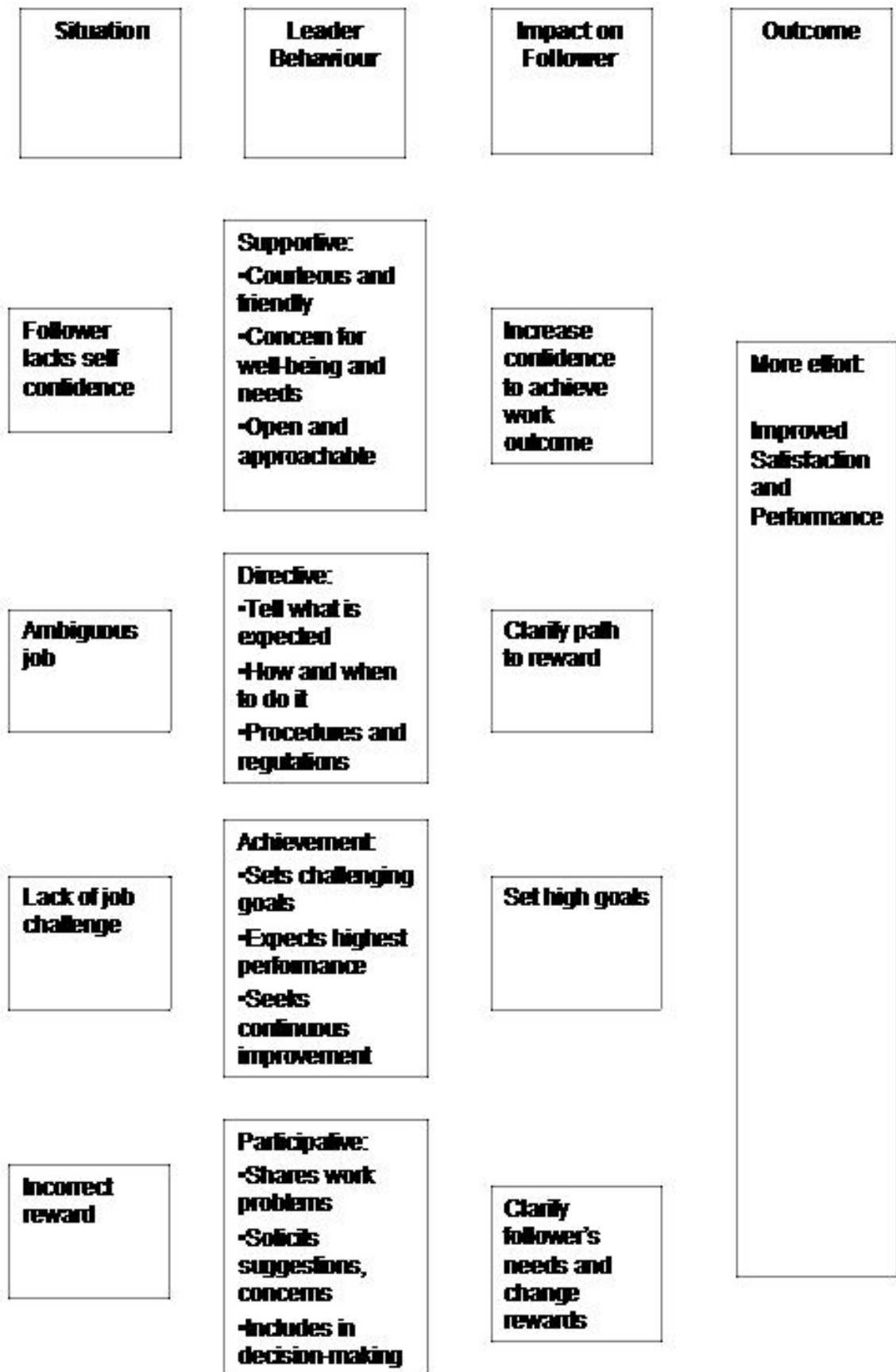


Figure 2.3: Effective Leader Behaviours

2.5 SUMMARY OF CHAPTER 2

2.5.1 THE ORIGIN AND SCOPE OF PATH-GOAL THEORY

Path-goal theory is concerned with how formally appointed superiors affect the motivation and satisfaction of subordinates. It is a dyadic theory of supervision in that it does not address the effect of leaders on group or work units, but rather the effects of superiors on subordinates. The essential notion underlying path-goal theory is that individuals — in positions of authority — will be effective by providing the necessary cognitive clarification to ensure that subordinates can attain work goals and that they (subordinates) will experience intrinsic satisfaction and receive valent rewards as a result of work goal attainment. The seminal paper in which the theory was advanced (House, 1971), made assertions about two general classes of leader behaviour: directive behaviour (similar to initiating structure) and supportive leadership (similar to consideration).

2.5.2 A PATH-GOAL THEORY OF LEADERSHIP EFFECTIVENESS

Expectancy theory of motivation was further extended by House and broken down into parts that have specific relevance for leadership using the concept of path instrumentality. *A Path-Goal Theory of Leader Effectiveness* reconciled conflicting findings from previous research.

2.5.3 PATH-GOAL THEORY OF LEADERSHIP

House and Mitchell (1974) further advanced path-goal theory into the *Path Goal Theory of Leadership*. They added two more leader behaviours to House's (1971) theory. The four kinds of leader behaviour included in the theory are: directive leadership; supportive leadership; participative leadership; and achievement-oriented leadership.

Path-Goal Theory of Leadership has two SMVs: follower and situational, with which subordinates must cope with in order to accomplish the work goals and to satisfy their needs. House and Mitchell's theory was tested in a limited number of studies, which generated considerable empirical support for their ideas and also suggested areas where the theory required revision. Path-goal theory attempts to explain which leadership behaviour is most effective in given situations.

CHAPTER 3

THE PATH-GOAL MODEL

3.1 INTRODUCTORY REMARKS

In the previous chapter, the two seminal papers on path-goal theory (*A Path-Goal Theory of Leadership Effectiveness* and *Path-Goal Theory of Leadership*) were introduced. The aim of this chapter is to advance the analysis and understanding of path-goal theory to develop the 'path-goal model'. To do this, the chapter will summarise both the role of the leader and the path-goal linkage, present the path-goal model, and suggest its legacy. The chapter will conclude with a summary.

3.2 AN EXCHANGE THEORY OF LEADERSHIP

Path-Goal theory is an exchange theory of leadership: it attempts to explain why contingent reward works and how contingent reward influences the motivation and satisfaction of subordinates. In its earliest version (Georgopolous, Mahoney & Jones, 1957), it focused on the need for leaders to: "Point out the paths to successful effort" (Bass, 1965, p. 150). Path instrumentalities are the subordinate's subjective estimates that his or her performance will lead to the accomplishment of the goal and that achievement of the goal will result in ends desired by the subordinate. The leader enhances the subordinate's motivation, satisfaction and performance by clarifying and enhancing path instrumentalities (Yukl & Van Fleet, 1982).

3.2.1 THE ROLE OF THE LEADER

Leaders can affect a subordinate's efforts in several ways in the path-goal process: they can clarify the subordinate's role, that is, what they expect the subordinate to do; they can make the rewards to the subordinate more dependent on his or her satisfactory performance; and they can increase the size and value of the rewards. In addition, specific leadership behaviours, which contribute to the follower's attainment of the goal are: providing support to the follower; alleviating boredom and frustration with work, especially in times of stress; coaching; providing direction; and fostering the follower's expectations that his or her efforts will lead to the successful completion of the task (Fiedler & House, 1988). However, House and Mitchell (1974) recognised that path-goal leadership, as such, was only needed and useful in certain circumstances. The leader needs to complement only what is missing in a situation to enhance the subordinate's motivation, satisfaction, and performance. What is missing (regarded as SMvs: follower and situational) is determined by the competence and the motivation of the subordinate, the environment, and the task (Fiedler & House, 1988). Thus, the subordinate's productivity is enhanced if the leader provides needed structure to clarify means and ends if they are missing or unclear to the subordinate. Given clear tasks and roles, the leader contributes to continued productivity by consideration, support, and attention to the subordinates' personal and interpersonal needs for satisfying relationships (Fiedler & House, 1988). If what is missing can be supplied in other ways by the organisation, such as through policies, regulations, improved communications, channels of information, contingent reward schemes, counselling services, and so on, 'substitutes' for the leadership may result in the same outcomes that would have been expected from appropriate leadership.

3.2.2 THE PATH-GOAL LINKAGE

The exchange involved in path-goal theory is seen when subordinates perceive high productivity to be an easy 'path' to attain personal goals and, as a consequence, they are productive. For example, directive leadership is needed only if the task is complex, difficult, or ambiguous and its goals are unclear. Whether the subordinates are self-reinforcing and have a great need for autonomy, growth, achievement, or affection will also make a difference. On the other hand, if subordinates are faced with simple but boring or dangerous tasks, a leader may do better by being supportive and considerate rather than directive. Too much motivation among subordinates, evidenced by a state of high anxiety, may call for calming support from the leader rather than any talk about contingent (uncertain) rewards that will increase such anxiety.

Path-goal theory has stimulated the search for an explanation of how the nature of the subordinate's task systematically affects whether leader behaviour makes a contribution to the subordinate's satisfaction and performance. The requirements of the task systematically moderate how different leadership behaviours affect what happens in the group. According to Mitchell (1979), path-goal theory calls for the leader to provide subordinates with coaching, guidance, and the rewards necessary for satisfaction and effective performance necessitated by the subordinates' abilities to meet the particular task requirements and attain the designated goals.³³ The focus of this approach is on ways for the leader to influence subordinates' perceptions of the clarity of the paths-to-goals and the desirability of the goals

³³ The characteristics of the task that make a difference include its structure, clarity, provisions for the subordinate's use of discretion, routineness, variety, complexity, difficulty and interdependencies, and automation.

themselves. Leadership behaviour that is best suited for increasing motivation, therefore, depends on the subordinate's personal characteristics and the demands of the task and valued rewards should be awarded contingent on effective performance. Path-goal theory has been widely tested and modified to account for the impact of the task on optimum leader-subordinate relations. Currently, it suggests that to obtain the subordinate's effective satisfaction and performance, the leader must provide structure if it is missing and must supply rewards that are contingent on the adequate performance of the subordinate. However, the efficacy in doing so will depend on such personal characteristics as the subordinates' need for clarity.

3.3 A PLETHORA OF VARIABLES

Path-goal theory was intended to reconcile prior conflicting findings concerning task- and person-orientated leader behaviour. The theory specified a number of SMVs of relationships between task- and person-orientated leadership and their effects. While initially promising, the theory — when tested empirically — met with mixed results. Wofford and Liska's (1993) meta-analysis of 120 tests of path-goal theory hypotheses showed that support for the theory was significantly greater than chance. However, the overall results were quite mixed and disappointing.³⁴

Of note, recent reviewers of the history of path-goal theory have all concluded that it has not been adequately tested.³⁵ This is perhaps because it is a complex theory that specifies four leader behaviours, five situational and follower moderators, five intervening variables

³⁴ Chapter 4 offers a review of the extant research.

³⁵ See *Leadership Quarterly* special issue 7(3), 1996, particularly the papers by Evans and Schriesheim & Nielder.

(follower expectancies and valences), and two dependent variables (follower satisfaction and performance). This is shown generally at Figure 3.0.

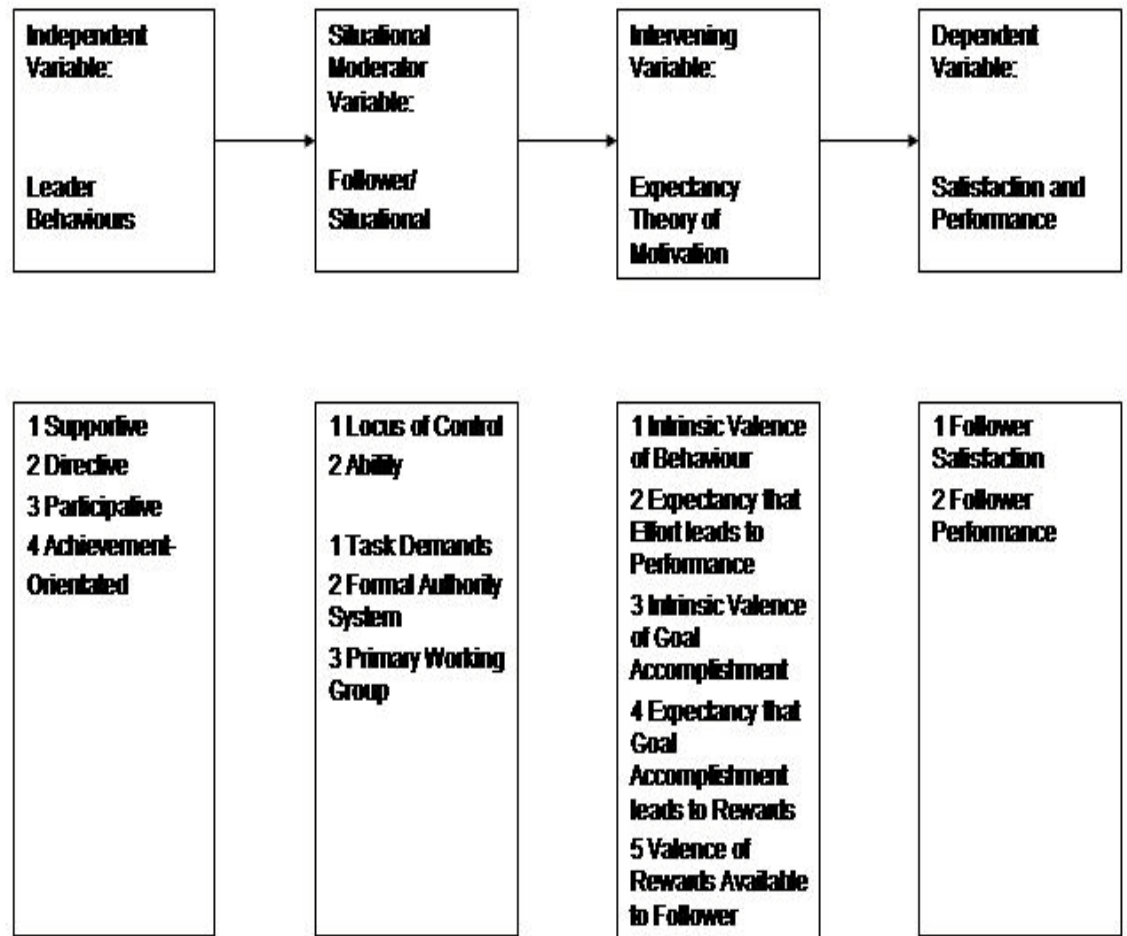


Figure 3.0: Path-Goal Theory — The Extant Model

3.3.1 THE LEGACY

At the time of writing, it has been 36 years since the original publication of *A Path-Goal Theory of Leader Effectiveness* (House, 1971). Path-goal theory has given us a two-fold

legacy. First, the framework for analysis of leadership — in terms of substitutes for leadership offered by Kerr and Jermier (1978) — grew out of early work conducted by House, Filley & Kerr (1971b). Substitutes theory is an extension of path-goal theory, in that it elaborates (in substantial detail) many of the moderating variables suggested by path-goal theory, and is widely cited in the organisational behavioural literature and represented in most organisational behaviour textbooks. Second, path-goal theory led to the foundation of the *1976 Theory of Charismatic Leadership* (House, 1977). In contrast to earlier leadership theory — which primarily addressed the effects of leaders on follower cognitions and behaviours — charismatic leadership theory primarily addresses the effects of leaders on followers' valences, emotions, non-conscious motivation and self-esteem.

In summary, from the initial development by Evans in 1968, the theory developed into a contingency form (House, 1971) and into a general diagnostic model (Kerr & Jermier, 1978). Once path-goal theory had focused upon transactional calculative forms of leadership (the impact on subordinates' expectancies and, to a lesser extent, the provision of valued rewards), the gap in terms of the leader's role in need arousal became clear. This, together with Burns' (1978) work on transformational leadership led to the development of better theories: the charismatic and transformational theories of leadership (House, 1977; and Bass, 1985); these take path-goal theory to its logical transcendental limit. The development of the path-goal theory was a triumph of the theory building process. An examination of the components of the underlying motivation model led House to question what aspects of leader behaviour might affect these components; this led him to his breaking with the traditional dimensions of LIS and LC to the richer set of directive, supportive, achievement-oriented, and participative (House & Mitchell, 1974). The second

contribution of this theory building process was the second question that House asked: “What alternative ways could be provided for the individual to be high in the components of motivation?” Unlike Fiedler’s (1967) contingency theory, which was driven by empiricism, House was led to the contingency aspects of his theory by both inconsistent empirical findings and theoretical insight. Aspects of the job, organization, and individual could affect the individual’s motivation and preferences for leader behaviours.

3.4 SUMMARY OF CHAPTER 3

3.4.1 AN EXCHANGE THEORY OF LEADERSHIP

Path-goal theory is an exchange theory of leadership: it attempts to explain why contingent reward works and how contingent reward influences the motivation and satisfaction of subordinates. Path instrumentalities are the subordinate's subjective estimates that his or her performance will lead to the accomplishment of the goal and that achievement of the goal will result in ends desired by the subordinate. The leader enhances the subordinate's motivation, performance, and satisfaction by clarifying and enhancing path instrumentalities.

3.4.2 THE ROLE OF THE LEADER

Leaders can affect a subordinate's efforts in several ways in the path-goal process: they can clarify the subordinate's role, that is, what they expect the subordinate to do; they can make the rewards to the subordinate more dependent on his or her satisfactory performance; and they can increase the size and value of the rewards. The leader needs to complement only what is missing in a situation to enhance the subordinate's motivation, satisfaction, and performance.

3.4.3 THE PATH-GOAL LINKAGE

The exchange involved in path-goal theory is seen when subordinates perceive high productivity to be an easy 'path' to attain personal goals and, consequently, they are

productive. The requirements of the task systematically moderate how different leadership behaviours affect what happens in the group.

Path-goal theory has been widely tested and modified to account for the impact of the task on optimum leader-subordinate relations. Currently, it suggests that to obtain the subordinate's effective satisfaction and performance, the leader must provide structure if it is missing and must supply rewards that are contingent on the adequate performance of the subordinate.

3.4.4 THE EXTANT MODEL

While initially promising, the theory (House & Mitchell (1974)) — when tested empirically — met with mixed results. Wofford and Liska's (1993) meta-analysis of 120 tests of path-goal theory hypotheses showed that support for the theory was significantly greater than chance. However, the overall results were quite mixed and disappointing. Moreover, recent reviewers of the history of path-goal theory have all concluded that it has not been adequately tested. This is perhaps because it is a complex theory that specifies four leader behaviours, a number of situational and follower trait moderators, five intervening variables (follower expectancies and valences), and two dependent variables (follower satisfaction and performance).

3.4.5 THE LEGACY

Path-goal theory has given us a two-fold legacy: first, the framework for analysis of leadership — in terms of substitutes for leadership — grew out of early work conducted by

House, Filley & Kerr (1971); and second, path-goal theory led to the foundation of the *Theory of Charismatic Leadership* (House 1977).

CHAPTER 4

PATH-GOAL THEORY: AN OVERVIEW OF THE EXTANT RESEARCH

4.1 INTRODUCTORY REMARKS

Perhaps one of the most obvious testaments to the impact of any theory is the amount of research which it stimulates (Schriesheim & Neider, 1996). Given that well over 100 studies have been published on path-goal-theory since its development, its significance as an important contribution to the study of leadership cannot be disputed. Indeed, every major textbook in the field of OB includes path-goal theory or path-goal propositions in discussing leadership effectiveness, and after 25 years of critical examination, path-goal still stands as the premier theory of dyadic supervision in the field of leadership (Jermier, 1996).³⁶

Unfortunately, research on the theory has yielded generally inconsistent findings and has been plagued with methodological shortcomings (Schriesheim *et al*, 2006). Of note, the predominant opinion of reviewers is that the theory has not been tested adequately and cannot be assessed conclusively based on the research evidence (Bass, 1990; Wofford & Liska, 1993; Yukl, 2002; and Schriesheim *et al*, 2006). Path-goal theory, however, has made a significant contribution to the field of leadership. Although it emerged during a time when most leadership theorists had not yet turned their attention to the strategic leadership of organizations, to the political behaviour of leaders, or to the possibility of transformative leadership (that radically changes individuals and organizations), it did have a subtext which may have subtly moved its audiences to new heights of humanistic

³⁶ According to Social Sciences Citation Index, House (1971) has been cited over 300 times since it was published.

inspiration (Jermier, 1996). For example, it was the earliest leadership theory that convincingly specified multiple leader behaviours. Despite previous attempts to identify important varieties of leader behaviour, many theorists — at the time — gravitated toward simplistic one- and two-dimensional models of leadership, usually emphasizing task (LIS) and relationship-oriented (LC) leader behaviour (Jermier, 1996). Path-goal theory specified four conceptually distinct varieties of leader behaviour, denying what was taken-for-granted about the exclusiveness and primacy of task and relationship-oriented behaviours by including participative and achievement-oriented behaviours (House, 1974). In addition, path-goal theory stated that leadership was, in essence, a dyadic more than a group phenomenon. Hitherto, leaders were theorized to impact differentially the motivations of individuals by affecting valences and expectations. They (leaders) also impacted the satisfactions of individual subordinates and the degrees to which individuals accepted the leader. This denied what was taken-for-granted about the uniformity and consistency of group leadership and opened the field up to considering individualizing approaches to managerial leadership. In addition, path-goal theory accelerated the move toward contingency approaches in OB research by identifying more complex combinations of variables that moderated the effects of leader behaviours. Research then emerged that showed not only the limitations of ‘one-best way’ thinking, but also the potential for refining explanations by examining how combinations of situational variables moderated the effects of leader behaviours. This laid to rest the idea that leadership effects were anything simple. Finally, and most importantly, path-goal theory laid the groundwork for considering situations where behaviours of leaders were of little or no consequence: it stated that leader behaviour would be motivational to/for subordinates to the extent that it complements the work environment and supplements it with what is otherwise lacking.

Although this statement suggested that there are situations where leadership is irrelevant, House (1971) stopped short of elaborating this theme. But, questioning of the primary, taken-for-granted assumption in leadership research that *some* form of leader behaviour would always have important effects captured the attention of others who thought the role of formal leaders was often overblown. The idea gained momentum, resonating through the field of OB, as reflected in the work of Calder (1977), Pfeffer (1977), Kerr and Jermier (1978), Meindl, Erlich, & Dukerich (1985) and others. Ironically, a major feature of the path-goal theory of leadership that made it interesting was that it bordered on denying the importance of leader behaviours in certain situations, thereby questioning the fundamental assumption in the field thus far (Jermier, 1996).

This chapter does not offer a meta-analysis of the research on path-goal theory. For this, the reader is directed to Bass (1990) and Wofford & Liska (1993). This chapter introduces the second pillar of the research strategy, namely the 'focal theory': what is being researched and why. The aim of this chapter is to provide a summary of the research up to the publication of *The Reformulated 1996 Path-Goal Theory of Work Unit Leadership*. To achieve this aim, the chapter will: detail the research to test the theory thus far; describe the intervening variables; highlight the criticisms and conceptual weaknesses; summarise the lessons learned; and suggest 'concerns for the future'. A summary of the chapter will then be presented.

4.2 RESEARCH TO TEST THE THEORY

4.2.1 OVERVIEW

Research conducted to test path-goal theory has yielded mixed results. Although the theory specifically articulated the role of motivation as the InV between leader behaviour and subordinate satisfaction and performance, most tests of path-goal theory have focused on the direct effects — under different contingencies — of leader behaviour on satisfaction and performance (i.e. the Iv and the Dv respectively).³⁷

These tests have been very restrictive in the kinds of leader behaviours examined, the SMvs examined and the Dvs studied. Summary data — from the bulk of the published research testing path-goal theory — is presented in Table 4.0 below (reproduced from Evans, 1987).

³⁷ Reference should be made again to Figure 3.0: 'The Extant Model'.

VARIABLE	QUANTITY
Independent Variable (Iv): <ul style="list-style-type: none"> • Instrumental/directive • Supportive/considerate • Participative • Upward influence • Contingent reward • Contingent punishment • Other 	29 27 4 1 1 1 7
Moderator Variable (Mv): <ul style="list-style-type: none"> • Characteristic of Task • Role Ambiguity • Task Independence • Autonomy • Group or Organization size or cohesion • Subordinate expertise or education • Upward influence • Leader expertise • Other 	20 5 3 2 3 2 1 1 8
Dependent Variable (Dv) <ul style="list-style-type: none"> • Performance • Turnover • Satisfaction • Work satisfaction • Extrinsic satisfaction • Intrinsic satisfaction • Overall satisfaction • Effort • E₁ • E₂ • Role ambiguity • Role conflict • Other 	13 3 10 9 5 7 7 5 4 2 6 1 5

Table 4.0: Summary Data

Table 4.0 indicates how restricted the research efforts have been. For example, nearly all the studies have focused on two leader behaviours (directive (29) and supportive (27)) as they interacted with the characteristics of the task (20) to affect performance (13) or, more likely, satisfaction (38). The number of studies that have examined components of the motivation theories is small (4). The number of studies that have included individual characteristics of the subordinate as moderators is minimal (4), and only two studies (Schuler, 1976; and Weed, Mitchell, & Smyser, 1976) have looked at joint task and individual characteristics as situational moderators. As Bass (1990, p. 628) critically notes:

“It is not surprising that a wide array of empirical results, sometimes contradictory, have emerged from the one hundred or more published surveys and experiments that tested various propositions derived from path-goal theory”. Indeed, in light of the absence of studies testing the critical motivational hypotheses of the theory, it is hard to argue that the theory has undergone reasonable testing. It has not.

4.2.2 SUPPORTIVE RESULTS

Most of the investigations of path-goal theory have concentrated on exploring relationships between leadership behaviours and outcome measures (satisfaction) while studying the impact of different moderator variables (such as the characteristics of the task). House (1971), for example, found preliminary support for the contention that situational variables may moderate the relationship of directive leader behaviour as well as supportive leader behaviour and such effectiveness measures as subordinate job satisfaction. Schriesheim and DeNisi (1981) provided further support that the characteristics of the task variables such as variety, feedback, and social interaction moderated the relationship between directive leader behaviour and satisfaction. Likewise, in a meta-analysis of over 40 studies, Indvik (1986) found support for the basic propositions of the theory, particularly with respect to the role of directive leader behaviour, moderated by the characteristics of the task, on employee satisfaction. Furthermore, Schriesheim and Schriesheim (1980) found that supportive leader behaviour appears to be strongly related to employee satisfaction levels regardless of situational characteristics. This finding is also consistent with the meta-analyses conducted by Fisher and Edwards (1988) and Wofford and Liska (1993) both finding support for a positive relationship between supportive leader behaviour and

subordinate job satisfaction. In addition, the hypothesis that directive leader behaviour increases subordinate satisfaction for unstructured tasks, but not for structured tasks, was supported in the majority of the studies (Bass, 1990). The hypothesis that supportive behaviour increases role clarity and performance for unstructured tasks but not structured tasks was supported, although only weakly. The research indicates that the effect of supportive behaviour on subordinate satisfaction is only weakly moderated by task structure.

Earlier, House (1971) found support *a posteriori*³⁸ in several studies.³⁹ In specific *a priori*⁴⁰ tests of the theory, House found that the satisfaction of subordinates was associated with the extent to which the leader's directive behaviour reduced role ambiguity. Likewise, Meheut and Siegel (1973) observed that directive leader behaviour was positively related to the subordinates' satisfaction with management by objectives.⁴¹ At the same time, as the scope of the subordinates' task decreased, the leader's support correlated more with the subordinate's satisfaction and performance. Also consistent were direct tests of the theory by Dessler (1973), who found that with the leader's supportive behaviour held constant, directive leader behaviour correlated less with the subordinates' satisfaction and role clarity as the ambiguity of the task decreased.

³⁸ *a posteriori*. Adjective (of reasoning) inductive, empirical; proceeding from effects to causes.

³⁹ The studies were by Fleishman, Harris, and Butt (1955); Halpin (1954); Mulder, van Eck, and de Jong (1971); Mulder and Stemerding (1963); Rush (1957); and Sales (1971).

⁴⁰ *a priori*. Adjective (of reasoning) deductive; proceeding from causes to effects.

⁴¹ Management by Objectives (MBO) is a management philosophy which tries to ensure that the best management techniques and approaches are adopted by all members of a management team, and which stresses clear aims and objectives, good communications, support and guidance, performance assessment and recognition of good performance.

4.2.3 MIXED AND NONSUPPORTIVE RESULTS

Despite the intuitively appealing nature of path-goal theory, its empirical tests have been plagued with difficulties. For example, Schriesheim and Kerr (1974, 1977) and Schriesheim, House, and Kerr (1976) suggested that some of the Ohio State Leadership Scales (which have frequently been used to test the theory) were confounds measures, and Schriesheim and Von Glinow (1977) first demonstrated instrumentation effects in tests of the path-goal theory.⁴² Thus, the variation in the way in which key path-goal constructs are operationalised clearly explains some of the inconsistencies obtained in tests of the theory. This point has, in fact, been emphasized in recent reviews by Bass (1990), Wofford & Liska (1993), and Schriesheim *et al*, 2006. Coupled with this issue, is the additional consideration that most investigations utilised 'self-report measures' to assess both leader behaviours and dependent variables and, therefore, serious common method variance concerns may be raised.

Wofford and Liska (1993) reviewed 120 survey studies on path-goal theory and conducted a meta-analysis of the results. They found little support for the hypothesis that the characteristics of the task moderates the effect of directive behaviour on outcomes such as role clarity and subordinate performance. Of note, most studies found a positive effect of supportive leadership on satisfaction, regardless of the situation. However, not enough studies have yet been conducted to provide an adequate test of the hypothesis that participative leader behaviour increases satisfaction more when the task is unstructured and subordinates desire autonomy. Podsakoff *et al* (1995) also conducted an extensive review of

⁴² Different instruments can yield different results.

the research on moderator variables in path-goal theory. Despite this quantity of research, the results were all inconclusive:

- not enough studies were available to provide an adequate test of hypotheses about situational moderators of participative and achievement-oriented leadership;
- most propositions about situational moderators of directive leadership were not supported;
- there was some evidence that directive leadership correlated more strongly with satisfaction for subordinates with low ability, but only an indirect test of the proposition was possible;
- there was little or no moderating effect of the situation on the relationship between leader supportive behaviour and subordinate satisfaction with the leader; and
- as in the earlier research, most studies found a positive effect of supportive leadership on satisfaction, regardless of the situation.

From another study, Szilagyi and Sims (1974) obtained data from 53 administrative, 240 professional, 117 technical, and 231 service personnel at multiple levels of occupational skills in a hospital. Although the results supported path-goal propositions — concerning the characteristics of the task and the relationship between directive leader behaviour and subordinate satisfaction — the results failed to do so for the relationship between directive leader behaviour and subordinate performance. Similarly, Stinson and Johnson (1975)

tested hypotheses that the correlations between directive leader behaviour and satisfaction were more positive under conditions of low task structure, low task repetitiveness, and high task autonomy than under high task structure, high task repetitiveness, and low task autonomy. Supportive leader behaviour and the subordinates' satisfaction and role clarity were expected to be more positively related under structured, repetitive, dependent conditions than under unstructured, unrepitive, autonomous conditions. The subjects were military officers, civil service personnel, and project engineers and the results were consistent with path-goal theory with respect to supportive leader behaviour but tended to be contrary to the theory regarding directive leader behaviour. Likewise, Seers and Graen (1984) found that satisfaction and performance outcomes depended directly on the characteristics of the task, as well as on the subordinates' need for growth. Wolcott (1984) tested path-goal predictions for library supervisors and the performance of their reference librarians and cataloguers; however, and contrary to path-goal predictions, directive leader behaviour contributed to better performance when the task structure was already high than when it was low. The librarians' high educational level and low need for independence were seen to be possible explanations for the results. Generally, directive leader behaviour increases tensions, especially when supportive leader behaviour is low (Miles & Petty, 1977; and Schriesheim & Murphy, 1976). This is especially true when directive leader behaviour continues to contain coercive, threatening items, along with direction and order-giving (Bass, 1990). Furthermore, in a first study, Greene (1979a) showed that, as expected, directive leader behaviour was correlated positively with the satisfaction and performance of 119 engineers, scientists, or technicians if they faced tasks with little structure. But such directive leader behaviour was negatively correlated with satisfaction (and minimally with performance) when the tasks were more structured. Considerate or supportive leadership,

as expected from the theory, increased the correlation with intrinsic satisfaction (but not with performance or intrinsic satisfaction) as the task structure increased. In a second study, Greene (1979b) tested several assumptions about causation that underlie the theory: the findings supported the theory, except, again, for the hypotheses concerning the subordinates' performance. Downey, Sheridan, and Slocum (1975) found only partial support for the path-goal predictions, and Siegel (1973) and Szilagyi and Sims (1974) found none. Dessler and Valenzi (1977) failed to find moderator effects across supervisory levels. Mitchell (1979) concluded that the findings were stronger for the supportive hypothesis than for the directive hypothesis and stronger for satisfaction as a criterion than for performance. Indvik (1985, 1986a) completed a meta-analysis of 48 path-goal studies involving 11 862 respondents: as expected, when structure was absent from the work environment, directive 'structuring' leadership behaviour contributed to the intrinsic motivation of subordinates, their satisfaction with the leader, and their overall satisfaction, but, surprisingly, it failed to add to role clarity. However, contrary to expectations, directive, structuring leadership contributed to the subordinates' performance when the structure was high but not when the structure was low. Considerate, supportive leadership behaviour in a highly structured work setting, did enhance motivation, satisfaction, performance, and role clarity, as expected. In a related meta-analytic report, Indvik (1986b) concluded that participative leadership provided the most overall satisfaction to subordinates who preferred and experienced a low task structure. Furthermore, when the task structure was high, achievement-oriented leadership behaviour was related to increased intrinsic satisfaction among subordinates but decreased extrinsic satisfaction and performance for those subordinates with a high need for achievement.

4.2.4 EFFORTS TO RECONCILE THE THEORY WITH THE MIXED AND NONSUPPORTIVE RESULTS

In the research — hitherto — on path-goal theory, the measures of leadership behaviour are obtained most often from the Leader Behaviour Description Questionnaire (Form XII (LBDQ-XII)) and less so from the Supervisory Behaviour Description Questionnaire (SBDQ).⁴³ Schriesheim and Von Glinow (1977) first noted that path-goal predictions of job satisfaction were less likely to be supported when a more coercive measure, such as the SBDQ scale of the initiation of structure was used. Schriesheim and VonGlinow (1977) then demonstrated, with 230 maintenance workers, that if a coercion-loaded scale was used, reverse results were obtained for the path-goal predictions for job satisfaction. But when coercion-free scales (the LBDQ and the LBDQ-XII)(or items from them) were employed, path-goal predictions were confirmed if task structure and role clarity were used to moderate the relationship between directive and supportive leader behaviour and employees' job satisfaction. A second source of contradictory findings resulted from the fact that leaders tend to be more directive when it is easier for them to do so, such as when roles are clear, conditions are structured, and jobs are routine (Bass *et al*, 1975). But such structuring would seem to be redundant for productivity when conditions were already structured. Rather, it would seem that such direction is needed more when conditions are unstructured; for in such unstructured situations, it might be argued that the group wants some direction from the leader, not just the leader's sympathy. Nevertheless, Indvik's (1985, 1986a) previously mentioned meta-analysis proved otherwise: directive leadership contributed to subordinate performance when structure was high, not when it was low.

⁴³ Reference should be made again to Annex A.

The leader's personality also needs to be taken into account in the structured situation, given Farrow and Bass's (1977) finding that highly directive leaders tend primarily to be satisfied authoritarians. In addition, the subordinates' personality needs to be considered. Griffin (1979) proposed a set of prescriptions combining path-goal theory and the subordinates' need for achievement and self-actualisation. Griffin called for achievement-oriented, consultative leadership for self-actualising subordinates with 'big' jobs. But for self-actualisers in routine jobs of little scope, supportive leadership (consideration without consultation) was required. For 'big' jobs performed by occupants who are uninterested in self-actualisation, directive leadership (structuring without threat) was seen as most needed. For occupants of routine jobs who have no need for self-actualisation, maintenance leadership behaviour (management by exception) was suggested. Schriesheim and Schriesheim (1980) added other subordinate variables that were likely to act as path-goal moderators of the leader-outcome relationships; these variables included the subordinates' need for affiliation, authoritarianism, ability, training, and experience relative to the demands of the task and their internalisation of professional norms and standards. Similarly, Abdel-Halim (1981) found that the subordinates' LofC (internal or external) had important effects on the path-goal leader-outcome relationships associated with the ambiguity of the role and the complexity of the job. Algattan (1985) examined the extent to which the scope of the subordinates' task, strength of the need for growth, and LofC moderated leader-outcome relationships for two periods, two months apart. At each time period, if the subordinates' LofC was external, the scope of their tasks and the strength of their need for growth increased the extent to which both participative and directive leadership contributed to their satisfaction and performance. But if the subordinates' LofC was internal, task-oriented leadership was of more importance to their satisfaction and

performance. However, a cross-lagged analysis of the correlations for the two time periods failed to support the existence of causality in the relationships. Furthermore, Craig (1983) attempted to show the importance of subordinates' self-esteem to path-goal leader-outcome relationships but failed to find the expected interactions. Wolcott (1984) found no effect on the relationships from differences in the subordinates' need for independence. Keller (1987) argued that the discomfort of role ambiguity may differ from one subordinate to another: some people who may want to clarify and structure their roles themselves are unlikely to be enthusiastic about a directive leader even if the task is unstructured or ambiguous.

Subordinates with high levels of education, such as R&D professionals, who may have internalised professional norms (that provide them with role clarity) may not need or want the leader to initiate structure. Some subordinates may actually enjoy the unstructured nature of a task; they may have a low need for clarity and prefer to create their own structure. Thus, compared to task structure, the subordinates' need or lack of need for clarity was seen to be a more important moderator of the correlations between directive leader behaviour and the subordinates' satisfaction and performance. In a survey of 477 professionals employed in four R&D organisations, Keller (1987) employed Rizzo, House, and Lirtzman's (1970) role-ambiguity scale to measure the subordinate's perceived task clarity, as well as Ivancevich and Donnelly's (1974) scale to measure the subordinate's 'felt' need for clarity on the job. He found that the need for clarity had a moderating effect on the directive leader-satisfaction relationship for both concurrent data and data gathered one year later. The higher a subordinate's felt need for clarity, the stronger was the relationship between the directive leader behaviour and the subordinate's job satisfaction. The subordinate's need for clarity was similarly found to moderate the initiation of structure-performance relationship in the largest of the R&D organisations. But, as proposed, the

actual clarity of the task for the subordinates, as such, failed to serve as a moderator for these leader-outcome relationships. In the same way, Kroll and Pringle (1985) failed to find the expected effects of the leader's directiveness on the satisfaction of 43 middle managers in marketing. Kroll and Pringle explained the results by noting that managers rated the ambiguous situation as a positive experience, particularly if they judged the amount of direction they received to be the amount they actually desired. Later, using data from a survey of 467 non-academic staff at a university, Indvik (1988) completed tests of 17 hypotheses that involved directive, supportive, participative, and achievement-oriented leadership behaviour and the expectancies that increased effort would improve performance and that such improved performance would yield valued outcomes. Also measured were intrinsic satisfaction with work, extrinsic satisfaction with pay and promotion, and satisfaction with one's superior. The subordinate's performance was appraised by the superior. Indvik examined the task structure, norms of the work group, and organisational formalisation as situational moderators of the relations between leadership behaviour and subordinate outcomes. Personal subordinate moderators included the need for achievement and preference for environmental structure. Hierarchical stepwise regression analyses provided support for only 7 of the 17 hypotheses tested.⁴⁴ Moderators that had significant effects included the subordinates' preference for structure and need for achievement.⁴⁵ However, Indvik concluded that generally, because of its low reliability, the subordinates'

⁴⁴ In a stepwise regression analysis, predictors are added according to their contribution to the overall prediction of outcomes. In a hierarchical regression, they are added in a predetermined order. The order used was based on path-goal propositions.

⁴⁵ Almost all the studies rely on self-support data with respect to the moderator variables. Such moderator variables may reflect social desirability response bias. That is, respondents may be unwilling to describe their jobs, themselves, or their environment in socially undesirable terms. To do so would imply that they are stuck in bad jobs, are 'undesirable' persons, or work for undesirable organisations, which in turn reflect badly on themselves. Adequate tests of the theory should include independent measures of moderator variables (exceptions to this concern individual differences).

preference for structure had a weak moderating effect on the relations of leadership behaviour to subordinate outcomes. Directive and achievement-oriented leadership behaviours were too highly correlated with each other to be distinguishable. Indvik recommended that future studies should measure transformational leadership behaviour instead of the transactional leadership behaviours, on which path-goal research has concentrated, for it is likely that transformational leadership behaviour is more sensitive to task structure and the characteristics of subordinates.⁴⁶ Finally, Neider and Schriesheim (1988) constructed a comprehensive path-goal model, shown in Figure 4.0, which attempts to incorporate much of the consistent findings about the process and the variables of consequence.

⁴⁶ This recommendation is advanced by Schriesheim *et al*, 2006.

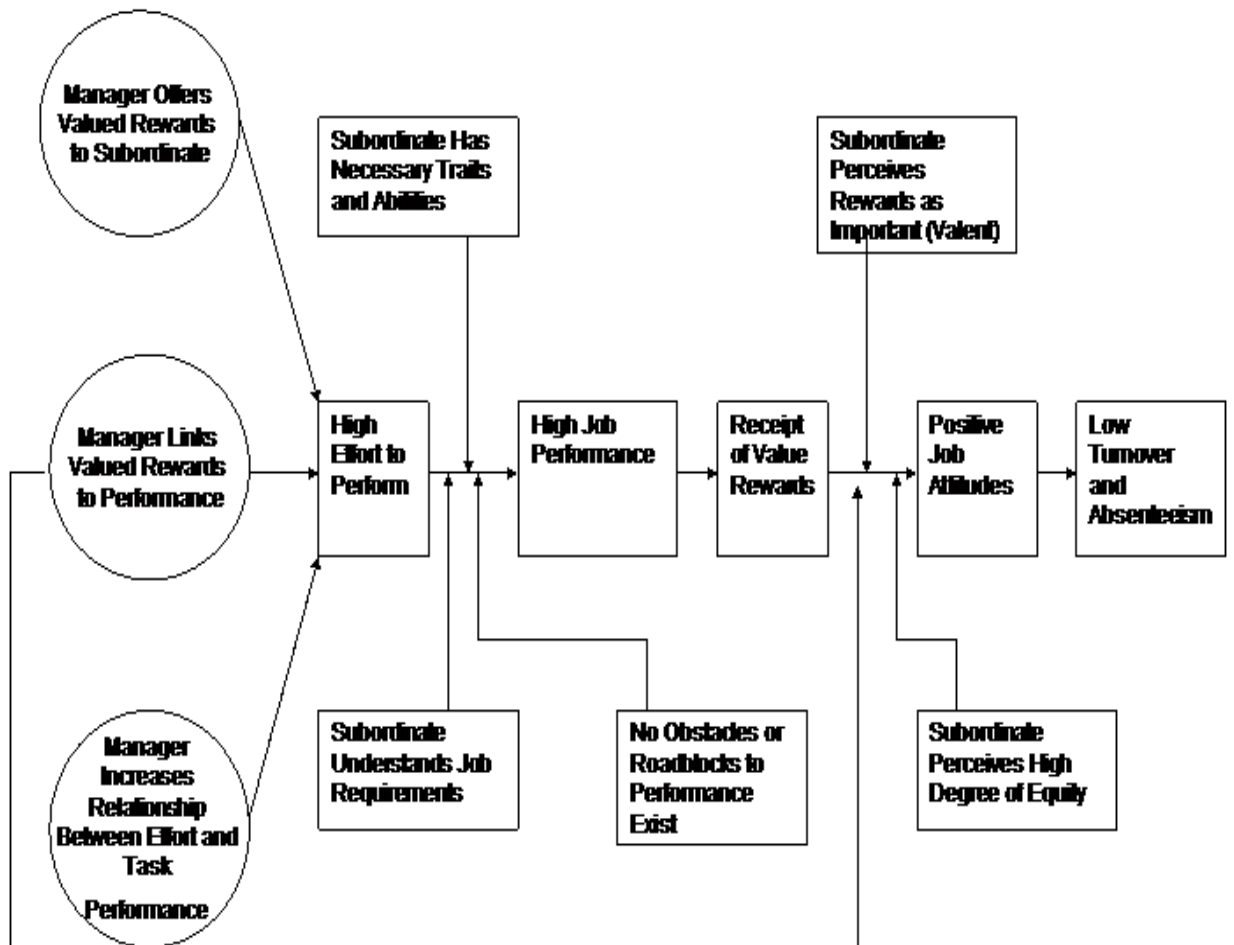


Figure 4.0: A Comprehensive Path-Goal Model

In this model, the manager stimulates the subordinate's effort by offering valued rewards and linking them to the subordinate's effort and performance. How much the effort yields high performance depends on the subordinate's knowledge, skills, and abilities, as well as on the absence of hurdles to performing the job. The rewards received by the subordinate, if valued and equitable, create satisfaction and encourage the subordinate to remain on the job.

4.3 INTERVENING VARIABLES

Another problem with tests of the theory is that the InVs have seldom been assessed. Path-goal theory asserts that leaders have a direct influence on these variables and that these variables, in turn, influence subordinate satisfaction and performance. Most of the tests of the theory have assessed the effects of observed leader behaviour on follower's satisfaction and performance. While the original theory predicted effects of leader behaviour on these variables, adequate operationalisation of these predictions requires that other potential sources of variance in satisfaction and performance be controlled. Because there are so many additional InVs, which may effect satisfaction and performance, the prevailing literature does not include adequately controlled tests of the prediction of path-goal theory, with the exception of tests, which use satisfaction with supervision as a dependent variable. When performance is measured, other causes of performance should be controlled in order for tests of the theory to be adequate. In addition, almost all of the tests of the theory are based on concurrent variation rather than longitudinal tests. In the seminal paper, House (1971, p 337) suggested experimental as well as correlational tests of the theory

The point to be stressed here is that there have been many cognitive gaps between the theory and its tests. The conclusion to be drawn from this analysis is that methodological problems associated with prior tests of the theory render these tests not directly applicable to the theory. Consequently, there are so many possible interpretations of the empirical findings that it is impossible to assess the validity of the theory at this time.

4.4 CRITICISMS AND CONCEPTUAL WEAKNESSES

Path-goal theory assumes implicitly that leaders can accurately assess key follower (LofC and ability) and situational (task structure, formal authority system and primary working group) factors. However, it is entirely possible that two leaders in the same situation may reach very different conclusions about the followers' level of knowledge, maturity, strength of leader-follower relationships, degree of task structure, or the level of role ambiguity being experienced by followers (Yukl, 2002). These differences in perception could lead these two leaders to reach different conclusions about the situation, which may in turn cause them to take very different actions in response to the situation. Furthermore, Bass (1990) suggested that the fact that leaders' perceptions may cause them to act in a manner not prescribed by a particular contingency theory, may be an underlying reason why contingency theories of leadership have reported conflicting findings, particularly in field settings. Another reason path-goal theory has generally found mixed support in field settings, concerns the fact that they are all fairly limited in scope: many of the factors that affect leader and follower behaviours in work group, team, or volunteer committee settings are not present in laboratory studies but often play a substantial role in field studies. For example, House's (1971) model does not take into account how levels of stress, organizational culture and climate, working conditions, technology, economic conditions, or type of organizational design affect the leadership process.

Path-goal theory also has some conceptual deficiencies that limit its utility. In general, the greatest weakness is the use of expectancy theory as the primary basis for explaining leader influence. This rational decision model provides an overly complex and seemingly

unrealistic description of human behaviour (Behling & Starke, 1973; Mitchell, 1974; and Schriesheim & Kerr, 1977). For example, expectancy theory does not take into account emotional reactions to decision dilemmas (such as denial or distortion of relevant information about expectancies and valences), and expectancy theory does not incorporate some important aspects of human motivation such as self-concepts, and expectancy theory limits the explanation of leadership influence to changes in subordinate perceptions about the likely outcomes of different actions. Another conceptual limitation is the reliance on broad categories of leader behaviour that do not correspond closely to the mediating processes. It is easier to make a link between leader behaviour and subordinate motivation by using specific behaviours such as clarifying role expectations, recognising accomplishments, giving contingent rewards, modelling appropriate behaviours for subordinates to imitate, and communicating high expectations about subordinate performance. The theory continues to treat each type of leadership behaviour separately without addressing likely interactions among the behaviours or interactions with more than one type of situational variable (Osborn, 1974). For example, the theory says that directive leadership will be beneficial when the task is unstructured, but directive leadership may not be beneficial for an unstructured task if there is another situational determinant of subordinate role clarity, such as a high level of professional training and experience. It is also assumed that role ambiguity will cause a person to have an unrealistically low expectancy, and that leader behaviour resulting in greater clarity will automatically increase expectancies. However, clarification of the subordinate's role sometimes makes it evident that successful task performance and the attainment of specific task goals are more difficult than the subordinate initially believed (Yukl, 1989). It is further assumed that role ambiguity is determined primarily by the characteristic of the task, but a more appropriate moderator

variable is an employee's ability and experience in relation to the task. The same, supposedly unstructured task may be clear to an experienced subordinate but ambiguous to an inexperienced subordinate.

Yukl (2002) also suggests some serious conceptual deficiencies that limit its utility:

- it is assumed that role ambiguity is unpleasant to an employee, but some people seem to like a job in which duties and procedures are not specified in detail and there is ample opportunity to define their own work;
- the theory focuses on the motivational functions of leaders but does not explicitly consider other ways that a leader can affect subordinate performance, such as training subordinates to increase their skills, obtaining necessary resources, and organizing their work more effectively;⁴⁷ and
- the theory focuses on a few aspects of leader behaviour and ignores other important aspects.

4.5 LESSONS LEARNED

There are several lessons to be learned from this analysis. Measures that only approximate constructs of a theory should not be used to test the theory; rather, with each new theory advanced, it will likely be necessary to develop and validate measures specifically designed to test the theory. Further, the few longitudinal tests of the theory do not control for

⁴⁷ By doing things to influence these other intervening variables, a leader can improve performance beyond the level possible just from increasing subordinate effort.

extraneous situational variables or correlated measurement error. While these are demanding criteria, it is important that they be met if the field of OB is to establish valid empirical foundations. The only way to test for causal effects of leader behaviour is to conduct controlled laboratory or quasi field experimentation. The effects of historical context present another lesson learned from the history of path-goal theory. At the time path-goal theory was developed, valence-expectancy theory of motivation (Vroom, 1964) was the prevailing motivational theory of the day. Path-goal theory of leadership took as its underlying axioms the propositions of valence-expectancy theory. Since then, it is now accepted that individuals are not nearly as rational or cognitively calculating as valence-expectancy theory would have us believe. Viewing path-goal theory in this historical context merely reminds us that theories of the day reflect other theories of the day. Indeed, for 25 years — from the early 1950s to the mid-1970s — students of leadership were trapped in the limited person- and task-orientation paradigm of leadership. This paradigm, coupled with the prevailing rationality assumptions underlying motivation theory, resulted in several theories that ignored the effects of non-conscious motives, affect, symbolic leader behaviour, and leader behaviour that appealed to emotions of followers. Several leadership researchers/scholars have subsequently become aware of the importance of these variables, which were largely overlooked or ignored until the mid-1970s (House 1977; Burns 1978; Bass 1985; Bennis & Nanus 1985; Conger & Kanungo 1987; and Sashkin 1988). Even today (2007), there are still not theories of leadership for major organisational change, political behaviour, or strategic competitive organisational performance. Clearly, social scientists need to escape the boundaries of prevailing paradigms and to question prevailing wisdom.

4.6 CONCERNS FOR THE FUTURE

Before the publication of the '1996 Theory', path-goal theory was in grave danger: scanning the scientific journals, which publish theory and empirical research on leadership, there was a distinct lack of research on the path-goal theory of leadership, especially after 1980. There are undoubtedly numerous reasons for this occurrence:

- Critical reviews (Schriesheim & Kerr, 1977) may have made it more difficult for research to be published in the Path-goal leadership domain.
- Path-goal theory lost some inherent appeal or 'glamour' (due to the passage of time and the advancement of new leadership approaches).
- Path-goal theory had not been improved upon since 1974.

Indeed, Miner (1980, p351) notes that the originators of the path-goal theory (Evans and House) have: "Contributed little to the development of the theory in recent years." The original theory and its revisions were stated in broad and general terms, in the belief that this would facilitate its modification and extension over time. However, despite some attempts at adding boundary conditions and 'sharpening' the theory's precision (Evans, 1974), path-goal theory has remained too 'sketchy' and in need of elaboration (Behling & Schriesheim, 1976; Miner, 1980; and Schriesheim & Kerr, 1977). Thus, it is surmised that scholars generally feel uncomfortable in refining, extending, and testing the path-goal framework, partly because the easiest relationships had already been tested and partly

because of the difficulty in developing meaningful extensions of or modifications to the theory.

4.7 SUMMARY OF CHAPTER 4

4.7.1 Path-goal theory has made a significant impact to the field of leadership: it was the earliest leadership theory that convincingly specified multiple leader behaviours; it stated that leadership was, in essence, a dyadic more than a group phenomenon; it accelerated the move toward contingency approaches in OB research; and it laid the groundwork for considering situations where behaviours of leaders were of little or no consequence.

Unfortunately, research on the theory has yielded generally inconsistent findings and has been plagued with methodological shortcomings. The predominant opinion of reviewers is that the theory has not been tested adequately and cannot be assessed conclusively based on the research evidence.

4.7.2 Research conducted to test path-goal theory has yielded mixed results. Although the theory specifically articulated the role of motivation as the intervening variable between leader behaviour and subordinate satisfaction and performance, most tests of path-goal theory have focused on the direct effects — under different contingencies — of leader behaviour on satisfaction and performance. Indeed, these tests have been very restrictive in the kinds of leader behaviours examined, the SMVs examined and the dependent variables studied.

4.7.3 The InVs in the theory have seldom been assessed. Most of the tests of the theory have assessed the effects of observed leader behaviour on followers' performance and satisfaction. Because there are so many additional intervening variables that may effect performance and satisfaction, the prevailing literature does not include adequately

controlled tests of the prediction of path-goal theory, with the exception of tests, which use satisfaction with supervision as a dependent variable.

4.7.4 Path-Goal theory has several conceptual weaknesses. First, it assumes implicitly that leaders can accurately assess key follower and situational factors. Second, path-goal theory is limited in scope: many of the factors that affect leader and follower behaviours in work group, team, or volunteer committee settings are not present in laboratory studies but often play a substantial role in field studies. Third, path-goal theory uses expectancy theory as the primary basis for explaining leader influence: this rational decision model provides an overly complex and seemingly unrealistic description of human behaviour. Fourth, path-goal theory relies on broad categories of leader behaviour that do not correspond closely to the mediating processes. Fifth, questionable assumptions underlie some of the hypotheses.

4.7.5 There are several lessons to be learned from this analysis: measures that only approximate constructs of a theory should not be used to test the theory; the few longitudinal tests of the theory do not control for extraneous situational variables or correlated measurement error; and social scientists need to escape the boundaries of prevailing paradigms and to question prevailing wisdom.

4.7.6 There is a significant lack of recent work on the path-goal theory of leadership. This is due to critical reviews, that the theory has lost some inherent appeal, and that the path-goal theory has not been seriously improved upon since 1974.

CHAPTER 5

THE REFORMULATED 1996 PATH-GOAL THEORY OF WORK UNIT

LEADERSHIP

5.1 INTRODUCTION

The Reformulated 1996 Path-Goal Theory of Work Unit Leadership — published by Robert House in 1996 — is a theory of work unit leadership; it specifies leader behaviours, which may enhance subordinate empowerment and satisfaction and work unit and subordinate effectiveness. It addresses the effects of leaders on the motivation and abilities of immediate subordinates and the effects of leaders on work unit performance. The ‘1996 Theory’ does not advance understanding or introduce further SMvs, or InVs. It does, however, increase the four leader behaviours (Ivs) (published in the *Path-Goal Theory of Leadership*) to eight leader behaviours.

The aim of this chapter is to introduce and develop understanding of the *Reformulated 1996 Path-Goal Theory of Work Unit Leadership*. The chapter will start by explaining House’s axioms to his ‘1996 Theory’. It will then describe the leader behaviours in detail, followed by an analysis of the ‘value added’ offered by this reformulated theory. The chapter will then conclude with a summary.

5.2 AXIOMS

The axioms of the *Reformulated 1996 Path-Goal Theory of Work Unit Leadership* are propositions assumed to be true for the sake of studying the consequences that follow from them. The following axioms of the theory provide the foundation for subsequent more specific propositions (House, 1996):

- Leader behaviour is acceptable and satisfying to subordinates to the extent that the subordinates see such behaviour either as an immediate source of satisfaction or as instrumental to future satisfaction.
- Leader behaviour will enhance subordinate goal-orientated performance to the extent that such behaviour (by the leader) enhances the motivation of work unit members, enhances task-relevant abilities of work unit members, provides guidance, reduces obstacles, and provides resources required for effective performance. Leader behaviour will enhance subordinate motivation to the extent that such behaviour (by the leader) makes satisfaction of subordinate's needs and preferences contingent on effective performance, makes subordinate's tasks intrinsically satisfying, makes goal attainment intrinsically satisfying, makes rewards contingent on goal accomplishment, and complements the environment of subordinates by providing psychological structure, support and rewards necessary for effective performance.
- Leader behaviour will enhance subordinate task-relevant-abilities to the extent that the leader engages in subordinate developmental efforts or serves as a role model from which followers can learn appropriate task relevant behaviour.

- Leader behaviour will enhance work unit performance to the extent that such behaviour (by the leader) facilitates collaborative relationships among unit members, maintains positive relationships between the unit and the larger organisations in which it is embedded, ensures that adequate resources are available to the work unit, and enhances the legitimacy of the work unit in the eyes of other members of the organisation of which the work unit is a part.

The seminal theory (House, 1971) focused on the effects on leaders of subordinates' motivation, satisfaction and performance. Proposition 4 to the '1996 Theory' (see page 114) broadens the theory to include effects of leaders on the subordinates' ability to perform effectively. Moreover, Proposition 5 to the same theory (see page 115) broadens the scope of the theory to include effects on work unit performance as well as performance of individual subordinates.

5.3 THE INDEPENDENT VARIABLE OF THE REFORMULATED 1996 PATH-GOAL THEORY OF WORK UNIT LEADERSHIP: LEADER BEHAVIOURS

The reformulated theory specifies eight classes of leader behaviours that are theoretically acceptable, satisfying, facilitative and motivational for subordinates (House, 1996). The behaviours are defined below in full and propositions — concerning the effective exercise of these behaviours — are also included.⁴⁸

5.3.1 PATH-GOAL CLARIFYING BEHAVIOUR

⁴⁸ Included in these propositions are specifications of the theoretical conditions under which each class of leader behaviour is likely to be most functional or dysfunctional.

A number of leader behaviours are capable of making subordinates' needs and preferences contingent on effective performance under a select set of conditions. These include:

- clarifying subordinates performance goals;
- clarifying the means by which subordinates can effectively carry out their tasks;
- clarifying the standards by which subordinates' performance will be judged;
- clarifying the expectancies that others hold for subordinates to which the subordinate should and should not respond; and
- the judicious use of rewards and punishment, contingent on performance.

These behaviours are referred to as path-goal clarifying behaviours in that they (metaphorically) clarify subordinates' paths to goal accomplishment. The acceptability and motivational effect of path-goal clarifying behaviours depends on the tasks performed by subordinates. According to the original path-goal theory, path-goal clarifying behaviours will have the most positive effect on subordinates when subordinates' role and task demands are ambiguous and intrinsically satisfying. Moreover, according to the original path-goal theory, it was assumed that under such conditions, path-goal clarifying behaviour (by superiors) will be seen as helpful and instrumental to task performance. Thus:

Proposition 1: When the task demands of subordinates are satisfying but ambiguous, path-goal clarifying behaviour (by superiors) will be a source of clarification and subordinate satisfaction and, therefore, will be motivational.

Proposition 2: The higher the degree of subordinates' self-perceived ability — relative to task demands — the less subordinates will view path-goal clarifying behaviour by superiors as acceptable.

Proposition 3: When the task demands of subordinates are unambiguous and dissatisfying, path-goal clarifying behaviour will be dissatisfying and over controlling and will be resented and resisted and, therefore, demotivational.

Proposition 4: When subordinates are personally involved in a decision or a task and the decision or task demands are ambiguous and satisfying, participative leadership will have a positive effect on the satisfaction and motivation of subordinates.⁴⁹

There are a number of personality traits associated with preference or motivation for independence and self-directed behaviour: need for independence, (Abdel-Halim, 1981; and Vroom, 1959), authoritarianism (Vroom, 1959), achievement motivation (McClelland, 1985), and internal LofC (Mitchell, Smyser & Weed 1975; and Runyon 1973). Individuals with strong preferences for independence and self-direction will find participative

⁴⁹ Path-goal clarifying behaviours can be enacted in a non-authoritarian directive manner or in a participative manner. Whether non-authoritarian directive leadership or participative leadership will be motivational to subordinates will depend first and foremost on subordinates' level of personal involvement in their work. When individuals are highly involved in their work, they take personal responsibility for work quality, take pride in their work, and exercise initiative and creativity to ensure work is accomplished. Consequently, when highly involved in their work, individuals desire to have influence over decisions that effect their tasks or themselves at work.

leadership to be valent and individuals with strong preferences for dependence and direction from others find directive leadership to be valent (Abdel-Halim, 1981; Runyon, 1973; Tannenbaum & Allport, 1956; and Vroom, 1959). Thus, the reformulated theory asserts that:

Proposition 5: Whether non-authoritarian directive leadership or participative leadership will be most effective in providing path-goal clarification for subordinates (who are not highly ego involved in their work) will depend on the level of subordinates' preference for independence and self-directed behaviour. Specifically:

- Proposition 5a: Individuals with a low preference for independence and self-direction will find non-authoritarian directive leadership to be valent. Therefore, when task demands are ambiguous and satisfying for individuals with a low preference for independence and self-direction, directive leadership will be motivational.
- Proposition 5b: Individuals with a high preference for independence and self-direction will find participative leadership to be valent. Therefore, when task demands are ambiguous and satisfying for individuals — with a strong preference for independence and self-direction — participative leader behaviour will be motivational.

As stated above, tests of the hypotheses of the original path-goal theory concerning the effects of path-goal clarifying behaviour have yielded mixed results. Thus:

Proposition 6: Propositions 1 through 5 will be most predictive when it is possible to assess accurately the probability of attaining valued outcomes, contingent on high, medium or low levels of effort, and will be less predictive when it is impossible to make such assessments accurately.⁵⁰

5.3.2 ACHIEVEMENT ORIENTED LEADER BEHAVIOUR

Achievement-oriented leader behaviour is not merely an emphasis on performance or goal achievement. Through achievement-oriented leader behaviour, leaders stress pride in work and self-evaluation based on personal accomplishment; however, the effect of leader achievement-oriented behaviour will depend on the achievement motivation of subordinates. Achievement-motivation is a non-conscious concern for personal involvement in competition against some standard of excellence and unique accomplishment (McClelland, 1985). Individuals who are highly achievement-motivated are motivated to make accomplishments through their own personal efforts rather than through influencing others or delegation of responsibility for achievement. Individuals with high achievement-motivation, set goals that are challenging, pursue them persistently and vigorously, take intermediate levels of calculated risk, assume responsibility for goal attainment, anticipate obstacles, establish strategies for goal accomplishment and for overcoming obstacles, and seek and use feedback information (McClelland, 1985). Non-

⁵⁰ This proposition suggests that the effects of path-goal clarifying behaviour of superiors cannot be predicted from the theory when subordinates are under conditions of substantial stress, or non-reducible uncertainty. Such conditions make it impossible to formulate accurate and rational expectations of rewards contingent on effort expended. It is most likely that the theory holds under conditions of certainty or risk, and when subordinates are not highly stressed. Under such conditions, probabilities can be assessed rationally. Therefore, these conditions satisfy the underlying rationality assumptions of the theory. These represent boundary conditions for the above propositions.

conscious motivation (such as achievement-motivation) predicts spontaneous behaviour in the absence of stimuli, strength of motive arousal in the presence of stimuli, and long term (as long as 16 years) global behaviour patterns such as patterns of friendship, leadership, family relationships and leisure activities (Spangler, 1992). For subordinates who have a moderate to high level of achievement-motivation, achievement oriented leader behaviour arouses subordinates' achievement-motivation. Occupations in which the achievement motive has been found to be most predictive of performance are technical jobs, sales persons, scientists, engineers and owners of entrepreneurial firms. Individuals who are 'highly achievement-motivated' respond to achievement stimuli such as:

- tasks for which one can assume personal responsibility;
- tasks which when performed well, reflect upon the competence of the individual;
- tasks that require moderate levels of risk and, therefore, are challenging; and
- tasks that provide opportunities for development and performance feedback.

Achievement-motivated individuals do not obtain satisfaction from, and usually become frustrated by, tasks that rely on others for effective performance. Consequently, a high level of achievement-motivation is dysfunctional for higher-level managers whose effectiveness depends on effective delegation (Spangler & House 1991). Thus:

Proposition 7: Achievement-oriented leader behaviour will be effective when enacted by superiors who manage subordinates who have individual responsibility and control over their work.

Proposition 8: Achievement-oriented leader behaviour will be most motivational for subordinates who are moderately or highly achievement-motivated.

Proposition 9: Achievement-oriented leader behaviour will enhance the valence of performance and increase the intrinsic satisfaction of moderately to highly achievement-motivated subordinates.

5.3.3 WORK FACILITATION

Leader behaviours that 'facilitate work' consist of: planning, scheduling and organising work; personally co-ordinating the work of subordinates; providing mentoring, developmental experiences, guidance, coaching, counselling and feedback to assist subordinates in developing the knowledge and skills required to meet expectancies and performance standards; and reducing obstacles to the effective performance of subordinates by eliminating roadblocks, bottlenecks, providing resources and authorising subordinates to take actions and make decisions necessary to perform effectively. The conditions under which work facilitation leader behaviours are likely to be effective depend on the degree to which the technology is understood, the work demands are predictable and the external environment and changing competitive conditions are stable. Thus:

Proposition 10: When the work of the unit is free of technological uncertainty and the demands imposed upon the work unit are predictable, leader planning, scheduling, organising and the establishment of formal pre-arranged co-ordination mechanisms will facilitate the work of the unit members.

Proposition 11: When the work of the unit is characterised by technological uncertainty or the external demands imposed upon the unit are unpredictable, personal co-ordination of the work by the leader or reciprocal co-ordination by members of the work unit will facilitate work unit goal accomplishment.

Which of these two modes of co-ordination will be most effective, will depend on the level of ability to work unit members. Thus:

- Proposition 11a: When the work unit members do not have task-relevant knowledge and experience, personal co-ordination of uncertain work by the leader will facilitate work unit goal accomplishment.
- Proposition 11b: When work unit members have substantial task relevant knowledge and experience, co-ordination of uncertain work by reciprocal co-ordination among work unit members will facilitate work unit goal accomplishment.
- Proposition 11c: Under the conditions specified in Proposition 11b, work unit effectiveness will be enhanced by delegation of responsibility for reciprocal co-ordination to work unit members.

Similarly, the degree to which it is necessary to provide mentoring, developmental experiences, guidance, coaching, counselling and feedback for current performance effectiveness depends on the relevant task knowledge and experience of work unit members. It is possible that the process of clarifying path-goal relationships described above will result in making subordinates aware that effective performance is more difficult than they had believed. When this occurs, the role of the leader is to facilitate the development of subordinates or remove obstacles to their effective performance. Therefore:

Proposition 12: When work unit members lack task-relevant knowledge and experience, developmental efforts on the part of superiors will enhance work unit effectiveness.

Proposition 13: When subordinates lack the necessary task-relevant knowledge and experience, supervisory efforts to reduce obstacles faced by subordinates will facilitate work unit accomplishment.

- Proposition 13a: When subordinates have the necessary task-relevant knowledge and experience, supervisory delegation of authority to subordinates to reduce work related obstacles will facilitate work unit accomplishment.

5.3.4 SUPPORTIVE LEADER BEHAVIOUR

Supportive leader behaviour provides psychological support for subordinates. Such behaviour is especially needed under conditions in which tasks or relationships are psychologically or physically distressing. Supportive relationships increase the quality of relationships between superiors and subordinates (Graen & Cashman 1975) and decrease

subordinate stress. The following propositions are consistent with the propositions concerning supportive leader behaviour stated in the seminal path-goal theory. These propositions have been supported in a number of studies (House & Dessler 1974; Katz, 1977; and Schriesheim & Von Glinow, 1977).

Proposition 14: When subordinates' tasks or work environment are dangerous, monotonous, stressful or frustrating, supportive leader behaviour will lead to increased subordinate effort and satisfaction by enhancing the leader-subordinate relationship, lowering stress and anxiety, and compensating for the unpleasant aspects of the work.

Proposition 15: When tasks are intrinsically satisfying or environmental conditions are not stressful, supportive leader behaviour will have little effect on follower satisfaction, motivation or performance.⁵¹

5.3.5 INTERACTION FACILITATION

Interactive Facilitation leader behaviour is a behaviour that facilitates collaborative and positive interaction (for example: resolving disputes, facilitating communication, and giving the minority a chance to be heard), emphasises the importance of collaboration and teamwork, and encourages close and satisfying relationships among members. These behaviours are of special relevance when the work of group members is interdependent.

Thus:

⁵¹ These propositions have been supported in a number of studies (Downey, Sheridan & Slocum 1975, 1976; Fulk & Wendler 1982; Greene 1975; House 1971; House & Dessler 1974; Schriesheim & Von Glinow 1977; and Stinson & Johnson 1975).

Proposition 16: Leader behaviour directed toward interaction facilitation will increase work unit cohesiveness and reduce voluntary absenteeism and attrition.

- Proposition 16a: Leader behaviour directed toward interaction facilitation will increase work unit effectiveness when the work of the unit members is interdependent and the norms of the work group encourage unit members' performance.
- Proposition 16b: Leader behaviour directed toward interaction facilitation will be unnecessary — and will not increase work unit effectiveness — when the work of the unit members is not interdependent.

5.3.6 GROUP-ORIENTED DECISION PROCESS

According to Maier (1963), the effectiveness of decisions is determined by the degree to which decisions meet physical and economical requirements — referred to as decision quality — and the degree to which decisions are acceptable to individuals who influence the implementation of decisions. A substantial programme of experimental research conducted by Maier (1963, 1967) demonstrated that the use of the group-oriented decision-making substantially increases decision acceptance and quality. Group decision making is a special case of participative leadership requiring some leader skills that are different from participative leadership between superiors and subordinates as dyads.⁵²

⁵² The group decision process consists of a number of specific behaviours by group or work unit leaders: posing problems (not solutions) to the group; searching for and identifying mutual interests of group members with respect to solving problems; encouraging all members of the group to participate in discussion; searching for alternatives; delaying evaluation of

House (1996) believed that the research by Maier (1967) suggested the following propositions:

Proposition 17: When mutual interests among work unit members with respect to solving problems or making effective decisions exists, or can be established, the group decision process will increase both decision quality and decision acceptance.

Proposition 18: When decisions require acceptance by group members for implementation, inclusion of group members in the decision process (whose acceptance is required) will increase decision acceptance.

Proposition 19: When group members have expertise relevant to the technical or economic quality of decisions, inclusion of group members in the decision process who have relevant expertise will increase decision quality.

Proposition 20: A boundary condition for the successful application of propositions 17, 18 and 19 is that a mutual interest in making effective decisions exists or can be established among the group members involved.

alternatives until the group members have exhausted their ability to generate alternatives; encouragement of the group to evaluate the advantages and disadvantages of each alternative; and combining the advantages into a creative solution. When problems can be segmented into parts for analysis, effective group leaders also allocate parts of the problems to individuals or subgroups who have special expertise with respect to the problem topic.

5.3.7 REPRESENTATION AND NETWORKING

Work units require resources to perform the tasks for which they are responsible. The ability of work units to acquire necessary resources depends on their relative power within their organisations and on their legitimacy in the eyes of those upon whom they are dependent. Work units on whom others depend for resources, performance, or information enjoy a relatively high degree of power and, therefore, are able to obtain the resources necessary to perform their functions and reward work unit members for effective performance (Mintzberg 1983; Pettigrew 1973; and Pfeffer 1981). Work units that do not control resources, information, or performance of other units must rely on their perceived legitimacy in order to require such resources. Effective representation of work units contributes to their perceived legitimacy. Consequently, a critical function of leaders of such work unit is 'work unit representation'. Group representation, therefore, includes presentation of the group in a favourable manner and communicating the importance of its work to other members of the organisation of which the group is a part. According to Yukl (1994a), such representation is enhanced by effective networking of work unit leaders. Networking involves maintaining positive relationships with influential personnel. Also according to Yukl (1994a), positive relationships are developed by entering into exchanges with others and being an effective trading partner, keeping in touch with network members, joining groups that offer opportunities to make contacts, participating in organisation wide social functions and ceremonies, giving other unconditional favours, showing appreciation for favours and the work of others and showing positive regard for others. This discussion of representation and networking suggests the following propositions:

Proposition 21: Work unit legitimacy, and the ability to obtain resources, will be enhanced by active representation by work unit leaders.

Proposition 22: Active representation and networking by work unit leaders will have a more positive effect on work units with relatively lower inter-organisational power compared to other work units.

5.3.8 VALUE-BASED LEADER BEHAVIOUR

Since the mid-1970s, a body of leadership literature has developed concerning leaders who accomplished extraordinary follower commitment, identification with leader or organisational goals and performance *above and beyond the call of duty*. Theoretically, such effects are accomplished by appealing to subordinates' cherished values and non-conscious motives and by engaging their self perceived identities, enhancing their self-efficacy and sense of consistency, and making their self-worth contingent on their contribution to the leaders' mission and the collective (House & Shamir, 1993). This genre of leadership is referred to as value-based leadership. Value-based leader behaviours include:

- articulation of a vision of a better future for followers, to which the followers are claimed to have a moral right;
- display of passion for the vision and significant self-sacrifice in the interest of the vision and the collective;

- demonstration of self-confidence, confidence in the attainment of the vision and determination and persistence in the interest of the vision;
- selective arousal of the non-conscious motives of followers that are of special relevance to the attainment of the vision;
- taking extraordinary personal and organisational risks in the interest of the vision and the collective;
- communication of high performance expectations to followers and confidence in their ability to contribute to the collective effort;
- the use of symbolic behaviours that emphasise the values inherent in the collective vision; and
- frequent positive evaluation of followers and the collective.

It is the central argument of the value-based leadership paradigm that — under a select set of conditions — the above behaviours are generic to the leadership of individuals, small groups, work units, formal or informal organisations, social or revolutionary movements, political parties, societies or nation states. Theories of the value-based leadership have been the subject of approximately 50 empirical studies and empirical evidence demonstrates that value-based leader behaviour has powerful effects on follower motivation and work unit performance (Bass & Avolio, 1994; and House & Shamir, 1993).

Proposition 23: Five conditions that facilitate the emergence and effectiveness of value-based leaders are:

- the opportunity for the leader to communicate an ideological vision;
- an opportunity for substantial moral involvement on the part of both the leader and the subordinates;
- exceptional effort, behaviour and sacrifice required of both the leaders and subordinates;
- values inherent in the leader's vision that are compatible with the deeply internalised values of work unit members; and
- the experience of severe threat, crisis, stress, feelings of unfair treatment, persecution or oppression induced by sources other than the leader.

Shamir, House & Arthur (1993) argue that value-based leadership is also more likely to be relevant under conditions that do not favour transactional leadership, conditions that Mischel (1973) refers to as weak psychological situations. Transactional leadership involves negotiation between superiors and subordinates concerning the subordinates' obligations in return for specific performance effort or accomplishments. Transactional leadership relies on contingent rewards as inducement for performance. Transactional leadership can only be exercised when leaders have ability to link extrinsic rewards to individual performance. Cognitive dissonance theory (Festinger, 1980) suggests that in the absence of extrinsic

incentives, followers are more likely to look for self-related justifications for their efforts. Cognitive dissonance theory also suggests that when leaders engage in specific transactions with subordinates, and make rewards contingent on specific performance outcomes, such transactional leadership undermines the leaders' ability to foster an ideological orientation towards work. Under transactional leadership, work becomes motivated toward the satisfaction of subordinates' self-interest and this motivation undermines work unit member moral involvement in work and motivation towards making contributions to the work unit as a collective. Thus:

Proposition 24: The emergence and effectiveness of value-based leadership will be enhanced to the extent that:⁵³

- Extrinsic rewards cannot be, or are not made contingent on individual performance.
- There are few situational cues, constraints and reinforcers to guide behaviour and provide incentives for specific performance.
- The leader refrains from the use of extrinsic rewards contingent on subordinate performance.

Finally, the relationship to the values inherent in the leader's vision and those of the larger organisation are also relevant. The vision and powerful motivational ability of value-based leaders is often a double-edged sword. For example, a value-based leader may emerge as a

⁵³ This proposition — and the analysis of it — is given extensive treatment by Scriesheim *et al* (2006). In their analysis, Scriesheim *et al* find no support for this proposition. In particular, for leader contingent reward behaviour, a number of statistically significant *positive* moderator effects were obtained, conflicting with the '1996 Theory'.

result of dissatisfaction of work unit members with the conditions under which they work, or strong disagreements between work unit members and the dominant coalition of their organisation. As a result, the leader may have a vision that represents the values of the work unit members and is inconsistent with the values held by the dominant coalition or the culture of the larger organisation. Under such conditions value-based leadership is likely to result in inter-group conflict between the work unit managed by the value-based leader and either other work units or the dominant coalition of the organisation. Thus:

Proposition 25: When the values inherent in the vision of a value-based leader are in conflict with the dominant coalition of the larger organisation or the prevailing culture of the organisation, value-based leadership will induce substantial inter-group conflict, or conflict between the leader's work unit and the dominant coalition of the organisation.

SHARED LEADERSHIP

It is not necessary that the above behaviours be performed only by formally-appointed work unit leaders. Bowers & Seashore (1966) studied the relationship between a number of leader behaviours similar to those specified in the reformulated '1996 Theory': supportive leadership, goal emphasis, work facilitation, and interaction facilitation. The findings presented by Bowers & Seashore (1966) suggest the final proposition of the *Reformulated 1996 Path-Goal Theory of Work Unit Leadership*:

Proposition 26: When the work of work unit members is interdependent, encouragement by the leader of collaborative shared responsibility for the exercise of leader behaviours will enhance work unit cohesiveness and performance.

5.4 THE 1996 THEORY: 'THE VALUE ADDED'

The propositions advanced in the '1996 Theory' are relevant to eight classes of leader behaviours that are likely to enhance work unit performance and member satisfaction when exercised under the conditions specified. However, it is unlikely that any one leader will have the ability to engage in all of the behaviours all, or even most, of the time (House, 1996). Effective leaders likely select those behaviours with which they are most comfortable, based on their personality and repertoire of abilities. The specific combinations of leader behaviours most effective for a given individual will likely depend on that individual's social skills and abilities. Those behaviours with which leaders are not comfortable, or for which leaders do not have the necessary abilities or social skills, but which are nevertheless required in specific situations can be shared with, or delegated to, work unit members. Moreover, it is possible that work unit effectiveness can be achieved in ways that are not considered in the present theory. No claim is made that the theory includes an exhaustive set of leader behaviours or that the propositions exhaust the conditions under which the various behaviours can be exercised. It is also likely that some of the behaviours are substitutable for each other. For example, articulation of a vision coupled with role modelling of appropriate behaviours may be substitutable for the path-goal clarifying behaviours described above. Or, leader interaction facilitation or peer supportiveness may be substitutable for, or make unnecessary, supportive leadership. Some of the moderating variables specified by the theory are also likely substitutable for each

other. For example, subordinate level of self-perceived abilities and subordinate relevant task knowledge may substitute for task structure.⁵⁴

Current managerial thinking emphasises the empowerment of subordinates. The '1996 Theory' specifies several ways such empowerment can be accomplished. Path-goal clarification establishes delegation for authority and responsibility. Achievement oriented behaviour encourages subordinates to take intermediate level calculated risks. Supportive leadership behaviour enhances psychological security. Work facilitation behaviour enhances subordinates' development and ability to work autonomously. Interaction facilitation behaviour empowers followers to engage in reciprocal co-ordination and inter dependent action. Group behaviour allows subordinates to influence decision-making. Representation behaviour enhances the legitimacy of work units and the resources available to work unit members. Value-based behaviour strengthens collective identification and the motivation for work unit members to contribute to collective goals. Thus, the '1996 Theory' could well be entitled a theory of 'work unit empowerment'. The advantage of this theory over the frequently found exhortations for empowerment in the managerial literature is that the theory specifies not only empowerment behaviours, but also the conditions under which such behaviours will be theoretically effective.

It can be argued that the reformulated theory lacks parsimony in that it includes eight classes of leader behaviour, individual differences of subordinates and task moderator variables that are related to each other in 26 propositions. However, it can also be argued that the essential underlying rationale from which the propositions are derived is strikingly

⁵⁴ The theory would become overly complex by including speculative propositions concerning the interaction among leader behaviours or among the moderating variables of the theory.

parsimonious (House, 1996). The essence of the theory is the meta proposition that leaders, to be effective, engage in behaviours that complement subordinate's environments and abilities in a manner that compensates for deficiencies and is instrumental to subordinate satisfaction and individual and work unit performance. This meta proposition and the specific propositions relating leader behaviour to responses of subordinates, decision effectiveness, superior-subordinate relationships and work unit behaviour, are consistent with, and integrate the predictions of, current extant theories of leadership. Further, the propositions of the theory are consistent with empirical generalisations resulting from task and person oriented research (Bass 1990; Bowers & Seashore 1966; and Likert 1977). That this proposition provides the basis for identification and integration of multiple leader behaviours, moderators and leader effects into a coherent theory and for the integration of extant theories of leadership as they apply to work unit behaviour, illustrates the underlying parsimony of the theoretical rationale for the theory. However, the '1996 Theory', while broader than the original path-goal theory, remains somewhat limited in scope. It does not concern emergent-informal leadership, leadership as it affects several levels of managers and subordinates in organisations, political behaviour of leaders, strategic leadership of organisations or leadership as it relates to change. These limitations reflect the limitations of current knowledge about effective leadership (House, 1996).

5.5 SUMMARY OF CHAPTER 5

5.5.1 The *Reformulated 1996 Path-Goal Theory of Work Unit Leadership* is a theory of work unit leadership: it specifies eight leader behaviours, which may enhance subordinate empowerment and satisfaction and work unit and subordinate effectiveness.

5.5.2 The *Reformulated 1996 Path-Goal Theory of Work Unit Leadership* contains several axioms which are propositions assumed to be true for the sake of studying the consequences that follow from them.

5.5.3. The *Reformulated 1996 Path-Goal Theory of Work Unit Leadership* specifies eight leader behaviours:

5.5.3.1 Path-Goal Clarifying Behaviour. This behaviour is capable of making subordinates' needs and preferences contingent on effective performance by: clarifying the subordinates' performance goals; clarifying the means by which subordinates can effectively carry out tasks; clarifying the standards by which subordinates' performance will be judged; and the judicious use of rewards and punishment, contingent on performance.

5.5.3.2 Achievement-Oriented Leader Behaviour. This behaviour stresses pride in the subordinates' work and self-evaluation, based on personal accomplishment.

5.5.3.3 Supportive Leader Behaviour. This behaviour provides psychological support for subordinates. Such behaviour is especially needed under conditions in which tasks or relationships are psychologically or physically distressing. Supportive relationships increase

the quality of relationships between superiors and subordinates and decrease subordinate stress.

5.5.3.4 Work Facilitation. This behaviour facilitates work by: personally co-ordinating the work of subordinates; providing mentoring, developmental experiences, guidance, coaching, counselling and feedback to assist subordinates in developing the knowledge and skills required to meet expectancies and performance standards; reducing the obstacles to effective performance (by subordinates) by eliminating roadblocks, bottlenecks, and providing resources; authorising subordinates to take actions and make decisions necessary to perform effectively.

5.5.3.5 Interaction Facilitation. This behaviour facilitates collaboration and provides positive interaction, involving: resolving disputes; facilitating communication; giving the minority a chance to be heard; emphasising the importance of teamwork; and encouraging close and satisfying relationships among members.

5.5.3.6 Group-Oriented Decision Process. This behaviour concerns the manner by which decisions that affect the group are made. For example, the effectiveness of decisions are determined by the degree to which decisions meet physical and economic requirements (referred to as decision quality) and the degree to which decisions are acceptable to individuals who influence the implementation of decisions.

5.5.3.7 Representation and Networking. This behaviour includes presentation of the group in a favourable manner, and communicating the importance of its work to other members of

the organisation of which the group is a part. Therefore, effective networking of work unit leaders enhances such representation.

5.5.3.8 Value-based leader behaviour. This behaviour helps subordinates identify (and meet with) organisational goals by: appealing to subordinates' cherished values and non-conscious motives; and engaging their (subordinates) self-perceived identities, their self efficacy and sense of consistency.

5.5.4 The eight leader behaviours that are likely to enhance work unit performance and member satisfaction when exercised under the conditions specified. However, it is unlikely that any one leader will have the ability to engage in all of the behaviours all, or even most, of the time. The specific combinations of leader behaviours most effective for a given individual will likely depend on that individual's social skills and abilities. No claim is made that the theory includes an exhaustive set of leader behaviours or that the propositions exhaust the conditions under which the various behaviours can be exercised. It is also likely that some of the behaviours are substitutable for each other. It is possible that work unit effectiveness can be achieved in ways that are not considered in the present theory.

The *Reformulated 1996 Path-Goal Theory of Work Unit Leadership* specifies several ways such empowerment can be accomplished. The theory specifies not only empowerment behaviours, but also the conditions under which such behaviours will be theoretically effective.

The essence of the theory is the meta proposition that leaders, to be effective, engage in behaviours that complement subordinate's environments and abilities in a manner that

compensates for deficiencies and is instrumental to subordinate satisfaction and individual and work unit performance. This meta proposition and the specific propositions relating leader behaviour to responses of subordinates, decision effectiveness, superior-subordinate relationships and work unit behaviour, are consistent with, and integrate the predictions of, current extant theories of leadership.

The *Reformulated 1996 Path-Goal Theory of Work Unit Leadership*, while broader than the original path-goal theory, remains somewhat limited in scope: it does not concern emergent-informal leadership; leadership as it affects several levels of managers and subordinates in organisations; political behaviour of leaders; strategic leadership of organisations; or leadership as it relates to change. These limitations reflect the limitations of current knowledge about effective leadership.

CHAPTER 6

RESEARCH METHODOLOGY

6.1 INTRODUCTORY REMARKS

This chapter concludes the focal theory element of the research strategy. In this chapter, the research methodology is presented.

The aim of this chapter, then, is to introduce and explain the research methodology. In detail, this chapter will identify weaknesses in the methodology of previous research (to test path-goal theory), detail the constraints and limitations of this research, offer a new methodology to test the '1996 Theory', and briefly describe the quantitative and qualitative research techniques to be employed in the research methodology. Finally, the chapter will conclude with a summary.

6.2 ANALYSIS OF PREVIOUS RESEARCH METHODOLOGY USED TO TEST PATH-GOAL THEORY

6.2.1 THE INDEPENDENT VARIABLE: LEADER BEHAVIOURS AND THE SCALES EMPLOYED TO MEASURE THESE BEHAVIOURS

The leader behaviour measurements, used in the original tests of path-goal theory, consisted of precursors to the Ohio State Form XII LC and LIS scales (Stogdill, 1965).⁵⁵ The

⁵⁵ Reference should be made again to Annex A.

LC and LIS scales were assumed to measure leader supportive behaviour and directive leader behaviour, respectively. By use of the convenience data (samples of white-collar employees held by Robert House) collected with these scales, House (1971) demonstrated the plausibility of the validity of the theory; however, these scales were only approximate measures of the leader behaviour constructs of the theory. Indeed, in subsequent tests of path-goal theory, considerable confusion arose over the leader behaviour scales that were employed. For example, several subsequent tests of path-goal theory employed the subscales of the Ohio State LBDQ (Fleishman, 1957), the SBDQ (Fleishman, 1972), or items selected from these scales. It seems likely that these scales were selected because Evans (1969) and House (1971) had both used versions of the LBDQ in their research and due to the availability of these scales in the public domain. Critically, Schriesheim & Von Glinow (1977, p399) point out that the dimensions of these questionnaires: “Differ substantially from the constructs of the theory”. Moreover, they state that these scales: “Have been found to measure very different kinds of behaviour, which are extraneous to the measurement of the theory's leadership constructs”. In addition, Schriesheim & Von Glinow (1977, p399) go on to note that: “Nevertheless, nearly all tests of the theory continue to use the Ohio State Leadership scales”. The LIS scales in the SBDQ (and the pre-Form XII versions of the LBDQ) do not capture leader coaching, goal clarification, path clarification, the use of contingent rewards, or a number of other work facilitating behaviours included in the path-goal clarification construct of the theory. Furthermore, the inclusion of production emphasis, autocratic and punitive items in these scales are inconsistent with the path-goal clarification construct of the theory. Thus, it can be argued (theoretically) that tests of the theory based on the SBDQ and the pre-Form XII versions of the LBDQ are not valid. For example, Schriesheim, House & Kerr (1976) showed

empirically how the differential findings — using the various versions of the Ohio State LIS scale — can be explained in terms of the version of the scale used and the occupational level of the subordinates (of the leaders) studied. Of note, Schriesheim & Von Glinow (1977) reviewed prior tests of the theory and they argued that Form XII of the LBDQ is an approximate measure of the theoretical path-goal clarification construct because it includes a number of path clarification items, but does not include autocratic, production emphasis, or punitive items. They then showed that tests based on the Form XII LBDQ scales are more supportive of the theory than tests based on SBDQ and the pre-Form XII versions of the LBDQ. Specifically, tests of five of seven hypotheses — based on Form XII of the LBDQ — and various subsets of items selected from this questionnaire were supported. In contrast, only three of nine tests of path-goal hypotheses based on items from the SBDQ or the pre-Form XII LBDQ were supported. Furthermore, and not surprisingly, original data reported by Schriesheim & Von Glinow (1977) showed that scales which corresponded to the theory produced results more consistent with the theory than the SBDQ or pre-Form XII versions of the LBDQ scales. Moreover, *A Path-Goal Theory of Leadership Effectiveness* (House, 1971) asserts that when the characteristics of the task of followers are ambiguous, non-authoritarian leader directive behaviour will be a source of clarification and, therefore, instrumental to both follower performance and satisfaction. The conclusion to be reached from the above empirical evidence is that the inclusion of punitive, production emphasis, and autocratic items in the SBDQ or pre Form XII versions of the LBDQ scales offsets the positive effects of directive path-goal clarifying behaviour. Consequently, tests of this proposition using the SBDQ and pre Form XII versions of the LBDQ scales cannot be considered valid tests of the theory.

The Ohio State LC scales are also problematic. These scales include items that describe participative as well as supportive leader behaviour. When tasks are unambiguous, supportive leader behaviour is predicted by path-goal theory to have a positive effect on follower satisfaction and motivation. However, participative leader behaviour is not necessarily called for under such conditions and may be inappropriate. Thus, these items may obfuscate the effects of supportive leader behaviour. A further problem concerns the often-found positive correlation between LIS and LC scales of the Form XII LBDQ (Stogdill, 1965). When the two measures of leader behaviour are significantly correlated, the prediction should concern the partial correlation of one of the leader behaviours with the Dv, holding the effect of the other leader behaviour constant. The need for this procedure stems from the hypothesis that each of the leader behaviours will have unique effects. Since several opposite predictions of the theory are made for LIS and LC, failure to control for the confounding effects of the second leader behaviour on the first completely invalidates the test. Evidence for this assertion was provided in an early study by House & Dessler (1974). Failure to use appropriate partial correlations runs throughout the literature on path-goal theory and is a fatal flaw of many of the tests of the theory.⁵⁶ Therefore, it is important that accurate leader behaviour scales be employed. Indeed, these concerns have been echoed elsewhere (Bass, 1990; Evans, 1996, and Hunt, 1996). In addition, Schriesheim and Von Glinow (1977) first demonstrated instrumentation effects (i.e. that different instruments can yield different results) in tests of the path-goal theory. Thus, variation in the way in which key path-goal constructs are operationalized clearly explains some of the inconsistencies obtained in tests of the theory. This point has, in fact, been

⁵⁶ A correlation between two variables when the effects of one or more related variables are removed.

emphasized in critical reviews of the literature (Bass, 1990; and Wofford & Liska, 1993).

Coupled with this issue, is the additional consideration that most investigations utilize self-report measures to assess both leader behaviours and outcome variables, so that serious common method variance concerns may be raised (Wofford & Liska, 1993).

6.2.2 THE SITUATIONAL MODERATOR VARIABLE

The theory predicts that followers whose jobs are satisfying, but who have unclear performance demands, will view non-authoritarian leader directive behaviour as satisfying and instrumental for performance. In contrast, followers whose jobs are dissatisfying, but who have unambiguous performance demands, will view leader directive behaviour as overcontrolling and dissatisfying. Several authors have grouped respondents into white and blue-collar categories, or have grouped followers according to their organisational-level to test the above predictions. The assumption of such grouping procedures is that white-collar and higher-level employees have more satisfying, yet more ambiguous jobs. While it is understandable that one might assume blue-collar employees to have less satisfaction and more routine and boring jobs than white-collar employees, it is risky to make this assumption since many blue-collar workers are skilled craft-persons or high-level technicians doing challenging work. Furthermore, many blue-collar workers are quite satisfied when doing routine work involving highly repetitive tasks. The use of occupational or organisational level as a moderator is also problematic. Subordinates' level of ability should increase as a function of level unless one assumes that promotion is random and incompetents are promoted as frequently as capable individuals. The high level of ability at higher organisational levels should thus lessen the instrumentality of leader

directiveness. That is, LIS should theoretically be less instrumental to high-ability individuals at high levels. However, ambiguity of role and characteristics of the task and satisfaction increase and routineness decreases with increases in level, thus making initiating structure theoretically more instrumental. Consequently, there are multiple and contradictory moderating effects of level, thus making the use of level an inappropriate moderator to test the theory.⁵⁷ The same rationale holds for the moderating effect of level on relationships between supportive leader behaviour and dependent variables. Stress and challenge may increase with level thus requiring consideration from the leader. In addition, the review of the literature shows that findings based on the use of surrogates — to measure the constructs of the theory — have resulted in tests that have multiple interpretations and are not adequate to assess the validity of the theory. Indeed, almost all the studies rely on self-support data with respect to the moderator variables. Therefore, adequate tests of the theory should include independent measures of moderator variables.

6.2.3 THE INTERVENING VARIABLE

Another problem with tests of the theory to date is that its intervening variables have seldom been assessed. The following five variables are the intervening motivational variables of the theory: intrinsic valence of behaviour, expectancy that effort leads to accomplishment, intrinsic valence of goal accomplishment, expectancy that goal accomplishment leads to valent rewards, and the valence of rewards available to followers. The theory asserts that leaders have a direct influence on these variables and that these variables, in turn, influence subordinate satisfaction and performance. House (1996), states

⁵⁷ This problem is tackled by Schriesheim *et al*, 2006.

that to his knowledge, there have been no tests of the effects of leader behaviour on follower valences. Further, the only test of the effects of leader behaviour on follower expectancies is that of House & Dessler (1974) which yielded rather strong support for the theory based on two independent samples.

6.2.4 THE DEPENDENT VARIABLE

Most of the tests of the theory have assessed the effects of observed leader behaviour on the follower's satisfaction and performance. While the original theory predicted effects of leader behaviour on these variables, adequate operationalisation of these predictions requires that other potential sources of variance in satisfaction and performance be controlled. Because there are so many additional InVs that may affect satisfaction and performance, the prevailing literature does not include adequately controlled tests of the prediction of path-goal theory, with the exception of tests, which use satisfaction with supervision as a dependent variable. When performance is measured, other causes of performance should be controlled in order for tests of the theory to be adequate. In the seminal paper, House suggested experimental as well as correlational tests of the theory (House 1971, p 337). The conclusion to be drawn from this analysis is that methodological problems associated with prior tests of the theory render these tests not directly applicable to the theory. Consequently, there are so many possible interpretations of the empirical findings that it is impossible to assess the validity of the theory at this time. This is the basis of Yukl's (2002) assertion that the theory has not yet been adequately tested.

6.2.5 LESSONS LEARNED FROM THE RESEARCH METHODOLOGY

In summary, the following factors have been identified as weaknesses in the research methodology from the previous research:

- Measures that only approximate constructs of a theory should not be used to test the theory. Rather, it is necessary to develop and validate measures specifically designed to test the theory. While these are demanding criteria, it is important that they are met if path-goal theory is to establish valid empirical foundations.
- Surrogates of the SMv should not be used: where possible, it is important to establish accurate SMvs, which are characteristic of the research sample.
- Independent measures of subordinate satisfaction and performance should be sought.
- Reviews of the state of progress of path-goal theory point to methodological limitations in traditional research approaches, which should be avoided: measurement artefacts; sampling inadequacies; common method variance; improperly estimated statistical models due to specification error (especially surrounding interactions among moderator variables); an absence of longitudinal designs; and a number of other failings in positivistic technique. In testing path-goal theory then, the statistical analysis should be accurate, relevant and appropriate.

6.3 CONSTRAINTS TO THE RESEARCH METHODOLOGY

In designing the research methodology — to this Thesis — the following constraints apply:

- a fixed time period for this research did not allow for an exhaustive analysis of the *Reformulated 1996 Path Goal Theory of Work Unit Leadership*;
- allied to the time constraint, the only SMv that would be examined would be situational, namely, the characteristic of the task (task demand); and
- again allied to the time constraint, the five intervening motivational variables of the theory would not be tested.

6.4 THE RESEARCH METHODOLOGY

In designing a new research methodology, it was important to ‘eliminate’ the weaknesses identified at section 6.2.5. In addition to trying to eliminate these weaknesses, the research methodology — to this thesis — was designed by the author during two visits to The University of Pennsylvania (Wharton School of Management) to meet with Professor Robert J House during the autumn of 2001 and 2003. The research methodology was based on initial discussions between the author and Professor House in 1997. This ‘Pilot Methodology’ is shown at Annex B. In addition, this methodology was independently checked and validated by Professor Paul J Hanges (Professor of Industrial and Organization Psychology at the University of Maryland and member of the Editorial Review Board of *The*

Leadership Quarterly). The author is most grateful for the help and advice offered by Professor Robert House and Professor Paul Hanges in designing this research methodology.

6.4.1 THE CONTEXT

This PhD research is undertaken within the context of a military domain, specifically by studying engineers in the Royal Air Force as the primary data source. In detail, the research is undertaken with Officers and Senior Non-Commissioned Officers (the sample) who are predominately based at the Royal Air Force College Cranwell, in Lincolnshire, England.⁵⁸ This cohort was selected for various reasons: leadership research has its origins in military organizations (e.g. Sun Tzu, 500 BC); the Royal Air Force takes leadership development very seriously and it was hoped that the response rate for the quantitative and qualitative investigation would be significant; and Royal Air Force Engineers are at the forefront of some of the most sophisticated technology available.

To understand the context of this research, it is important to establish if there is such a thing as military leadership. The Defence Leadership Centre (DLC), situated within the Defence Academy of the United Kingdom, would think so. In fact, the DLC provides a full definition for military leadership: “Military leadership is visionary, it is the projection of personality and character to inspire Sailors, Soldiers and Airmen to do what is required of them. Skill in the techniques of leadership is the foremost quality in the art of command and contributes very largely to operational success. There is no prescription for leadership and no prescribed style of leader. Military leadership is a combination of example,

⁵⁸ See: www.cranwell.raf.mod.uk. The Royal Air Force College Cranwell is the oldest Air Force College in the world.

persuasion and compulsion, dependent on the situation. It should aim to transform and be underpinned by the ethos of mission command and a balance of military qualities and skills. The successful military leader is an individual who understands him/herself, the organisation, the environment in which they operate, and the people that they are privileged to lead”.^{59,60}

A discussion of military leadership must, however, begin by noting that a modern military organisation is far from the monolithic society often held in stereotypes. A military organisation actually consists of a diverse collection of organizations, roles, cultures, and people. For example, Her Majesty’s Forces contains three arms: The Royal Navy, The British Army and The Royal Air Force. Each Service has its own culture and, hence, its own unique aspects of leadership. In addition, ‘military’ may refer to people wearing the uniform all the time (the active duty forces), part of the time (reserves and ex-regular), or none of the time (civil servants, contractors and military families and dependants). In terms of size, the number of people in the Royal Air Force of today is considerable: as at 1st February 2004, there were 53 230 personnel in ‘uniform’.⁶¹ When one also considers civilians and dependants, this figure could easily be inflated to 200 000. Therefore, the size of the Royal Air Force means that leaders (even rather junior ones) often command large numbers of subordinates, and crucially, leadership at all levels tends to have a large impact on the performance and satisfaction of personnel.⁶² Moreover, in terms of organizational

⁵⁹ See: https://da.mod.uk/DLC/Leadership%20Thinking/Definitions/document_view

⁶⁰ It is possibly easier to think of leadership as the subject and apply (and examine) it within the unique setting of military organisations. In essence, ‘military leadership’ is context-specific.

⁶¹ Source: Royal Air Force Manpower - Monthly Pocket Brief. Also available at: <http://centre.chots.mod.uk/dasa/index.html>.

⁶² Although leadership, management and command are uniquely different, ‘leaders’ in this context are considered to be military personnel who have supervisory responsibility over subordinates.

form, the military is unquestionably traditional. There is a clear delineation of power across hierarchical levels and clear prescriptions about how leaders and subordinates are expected to interact. The military has both very clear *surface-level structures* and very clear *deep structures* defining power arrangements. For instance, through the use of rank insignia, surface-level power is easily identified to all members of the system. At the same time, there are deeply entrenched ‘codes’ of behavioural order (deep structures) that extend beyond the official work environment. The clear surface-level and deep power structures permeate nearly every aspect of military leadership at all levels throughout the organization. Moreover, the role of the military in world affairs has recently expanded: while many thought that the military's role would be diminished after the fall of the Berlin Wall, the military has been more active in recent years than during the days of the Cold War. Consider, for example, Her Majesty’s Forces role in the Persian Gulf in the early 1990s, followed by major involvements in Bosnia, Kosovo and then back to the Persian Gulf in 2003. Today, the war on terrorism and current operations around the globe continue to illustrate the use of the military as a key element of national power. Critically — and despite the headline-grabbing, high-tech aspects of recent armed conflict — waging war continues to be an intensely human endeavour: as a result, the military needs leaders (not managers, program directors, or supervisors) to accomplish its primary mission.

Thus, culturally, leadership was, is and will continue to be a mainstay of the military. Long before leadership became a topic of discussion in the corporate, academic, or even public realm, militaries have been enamoured by leadership. The military emphasizes the importance of leadership and strives to develop leaders through formal education, operational assignments, and self-development. Finally, Her Majesty’s Forces are similar to

other large public sector organizations in the UK in that they have tendencies toward a hierarchical bureaucracy and must remain responsive to the taxpayer. It differs significantly, however, in that the military ultimately exists to fight and win the nation's wars. At the lowest level, military leadership can be the difference between life and death for many people. At the highest level, the survival of our nation relies upon the leaders in the military. As such, the military is a 'greedy institution' with an all-consuming nature, which demands nearly all the attention, time, energy, and commitment from its members.

In summary, the military is unique in that it is a huge and increasingly diverse organization, which plays a key role in both the nation and the world. It is a traditionally hierarchical institution that finds itself in an uncertain, volatile world executing missions with very high consequences.

6.4.2. THE INDEPENDENT VARIABLE: LEADER BEHAVIOUR QUESTIONNAIRE ONE

A Leader Behaviour Questionnaire (Leader Behaviour Questionnaire One) will be designed and validated to determine the leader behaviours specified in the *Reformulated 1996 Path-Goal Theory of Work Unit Leadership*, which are expected to be relevant to the study population of military personnel. Of the eight behaviours cited in the '1996 Theory', it is important to determine (and rank) the four behaviours most prevalent to the study population.⁶³ These behaviours are shown in Figure 6.0, a simplified model of the

⁶³ Four behaviours are more manageable within the time constraints.

Reformulated 1996 Path-Goal Theory of Work Unit Leadership. An example of Leader

Behaviour Questionnaire One is shown at Annex C.

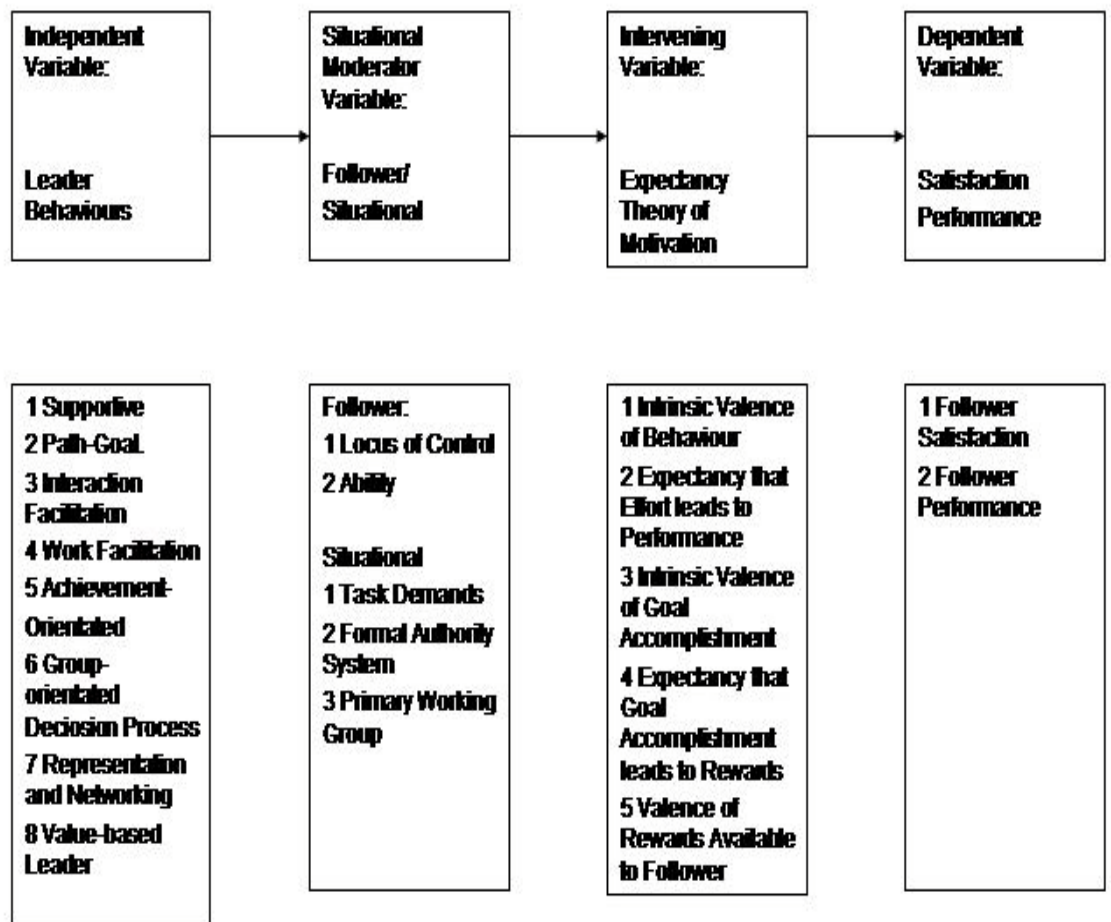


Figure 6.0: Reformulated 1996 Path-Goal Theory of Work Unit Leadership.

6.4.3 THE SITUATIONAL MODERATOR VARIABLE: TASK DEMAND

QUESTIONNAIRE ONE, TWO, AND THREE

A Task Demand Questionnaire will be designed and validated to establish the degree to which officers are engaged with the most complex, challenging, and repetitive tasks. This questionnaire (Task Demand Questionnaire Three) will be developed from Task Demand Questionnaire One and Task Demand Questionnaire Two. An example of Task Demand Questionnaire Three is shown at Annex K. The task demands will reflect the moderators specified in the '1996 Theory', as well as other unusual task demands; for example, source of stress, uncertainty, frustration or dissatisfaction. The design of this questionnaire will be derived from the following two Task Demand Questionnaires:

- Task Demand Questionnaire One (qualitative research): ask 400 Engineers (senior officers, junior officers and Senior Non-Commissioned Officers) to list three of their daily tasks (i.e. task demands) which create stress, anxiety and frustration. Then, the 'Top 4 Tasks' will be established.⁶⁴
- Task Demand Questionnaire Two (quantitative): ask a different sample to describe these 'Top 4' tasks in terms of adjectives; for example, for each task demand, the sample will be asked to rate how simple/complex, routine/challenging, and varied/repetitive the tasks are quantitatively. Therefore, after this quantitative analysis, it will be possible to determine what are the most complex, challenging, and repetitive tasks, faced by engineering personnel in the Royal Air Force.

6.4.4 THE INDEPENDENT VARIABLE: LEADER BEHAVIOUR QUESTIONNAIRE TWO

⁶⁴ Again, time does not allow all task demands to be analysed.

Leader Behaviour Questionnaire Two will be designed and validated. This questionnaire will be based upon the ‘Top 4 Behaviours’ established from Leader Behaviour Questionnaire One (see Section 6.4.2). Then, three months after a new cohort of officers (*the leaders*) have taken a position in which they have responsibility for managing at least eight subordinates, Leader Behaviour Questionnaire Two will be administered to the subordinates of these officers (*the subordinates*). In detail, it will be important to establish from these subordinates if they judge that the four leader behaviours — demonstrated by their officer — reduce anxiety, stress and frustration, and make a difference to the satisfaction of each subordinate within the work unit. An example of Leader Behaviour Questionnaire Two is shown at Annex K.

6.4.5 TASK DEMAND QUESTIONNAIRE THREE

At the same time as the subordinates are being asked to comment on their superior’s leadership behaviour, the said superiors (*the leaders*) will be asked to describe the degree to which they are engaged with the most complex, challenging, and repetitive tasks (established at Task Demand Questionnaire Two) via Task Demand Questionnaire Three. This will demonstrate how the task demands moderate the relationship between leader behaviour and performance and satisfaction.

6.4.6 THE UNIT PERFORMANCE INDICATOR QUESTIONNAIRE

Approximately six months after the questionnaires (Task Demand Questionnaire Three and Leader Behaviour Questionnaire Two) have been administered to this new cohort of officers (and their subordinates), the superior of the said officers (*the leaders’ superior*) will

be asked to rate the quality of the work unit in terms of team performance, productivity, contribution to organisational goals, and organisational citizenship behaviour.

6.4.7 MODELLING THE INDEPENDENT VARIABLE, THE SITUATIONAL MODERATOR VARIABLE AND THE DEPENDENT VARIABLE

Leader Behaviour Questionnaire Two will provide data from the **subordinates** (the Iv).

Task Demand Questionnaire Three will provide data from the **leaders** (the SMv). The Unit

Performance Indicator Questionnaire will provide data from the **leaders' superior** (the Dv).

This is shown diagrammatically at Figure 6.1.

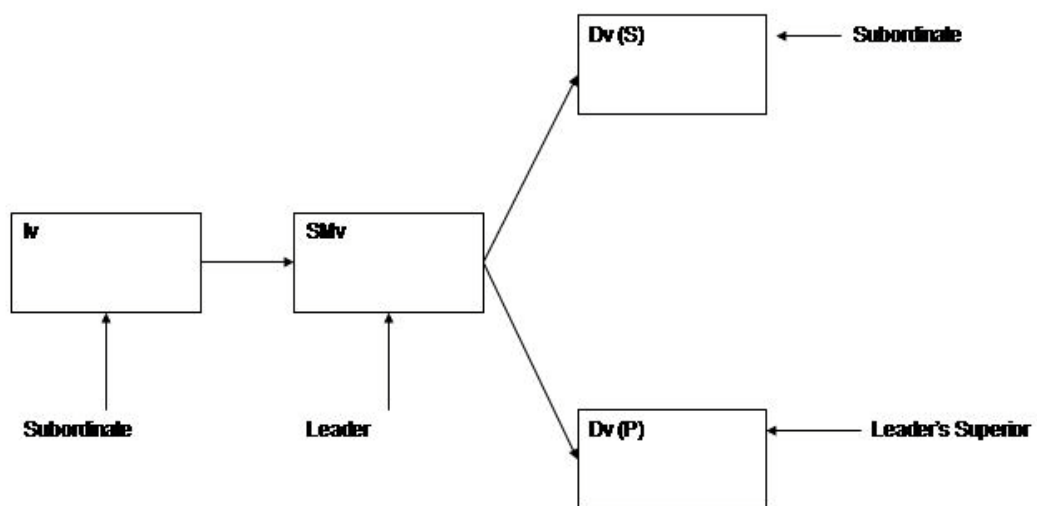


Figure 6.1: The Research Methodology

Therefore, via Structural Equation Modelling, it should be possible to establish associations (if any) between the Iv, SMv, and Dv from the simplified path-goal model shown at Figure 6.1.

6.5 QUANTITATIVE AND QUALITATIVE TECHNIQUES TO BE EMPLOYED

Qualitative and quantitative research methods compliment each other, despite their obvious differences. They can be considered as being on a continuum, ranging from purely qualitative to purely quantitative with a certain degree of merging in the centre. For management research, both methods can be used in the same project, either simultaneously or in isolation. In this way, it is possible to obtain more information than if using only one method, and to substantiate qualitative research with quantitative data. It is important, however, to decide which methods are most suited to the particular requirements of each individual study, and in doing so, to consider — in detail — the various comparisons between both methods.

6.5.1 QUALITATIVE RESEARCH METHODS

Qualitative methodology provides powerful tools for research in management and business subjects, including general management, leadership, marketing, organization, corporate strategy, and accounting (Gummesson, 2000). It is one of the two major approaches to research methodology in social sciences today and is a body of research techniques which seeks insights through loosely structured, mainly verbal data rather than measurements. The analysis is interpretative, subjective, impressionistic, and diagnostic. Qualitative research is often said to be naturalistic: that is, its goal is to understand behaviour in a

natural setting (Bryman, 2004). It attempts to do this by using so-called naturalistic methods: interviewing, open-ended questions, observation, participant observation and focus groups. Each of these methods seeks to understand the perspective of the research participant within the context of their everyday life. This means that the researcher is concerned with asking broad questions that allow the respondent to answer in their own words. These methods allow the researcher to try to qualify their understanding during the research process. Qualitative research is sometimes said to have as its goal the understanding of the sample studied, rather than generalizing from the sample to the population (Siverman, 2004).

Qualitative research includes a wide range of ways to analyse the data including grounded theory, conversation analysis, discourse analysis, and thematic analysis. The proto-typical qualitative study is the ethnography, which helps the researcher understand the definitions of the situation of those studies.⁶⁵

6.5.2 QUANTITATIVE RESEARCH METHODS

Quantitative methods are much more objective than qualitative methods. They are essentially systematic, and based on a positivism perspective. Essentially, quantitative data is replicable: it should be possible for the same data to be re-collected by another researcher in another place but for it to still measure or identify the same thing, i.e. results can be

⁶⁵ Qualitative research has also been called by other names such as interpretive research, naturalistic research, phenomenological research and descriptive research. Qualitative research methods have increased in significance over the last decade. Many researchers have previously considered it to be all that quantitative research was not, i.e. an opposite or alternative method of research. More recently, it is being seen as a supplement to quantitative research and as a direct result, has grown in importance in the field of management research.

directly comparable. Quantitative methods attempt to explain social changes with objective measures and statistical analysis. Quantitative researchers put their emphasis on procedures, methodologies and statistics. They hope to reduce, if not eliminate, error and bias by using experimental designs and correlational studies to achieve objectivity.

6.5.3 ADVANTAGES AND DISADVANTAGES

Both qualitative and quantitative research methods look for reliability, replicability, objectivity, and scientific rigour. Those who favour quantitative methods rely on statistical techniques aided by computational algorithms and software packages, whilst qualitative researchers view transcripts, interview recordings, notes of focus groups or participant research. It is important to recognise the advantages and disadvantage of both types of research methods. Quantitative methods have an objective approach, where data is controlled and measured, to address the accumulation of facts to determine the causes of behaviour. Qualitative methods view data from another's perspective and in so doing attempt to find understanding and meaning. Quantitative researchers try to recognize and isolate specific variables contained within the study framework; they seek correlation, relationships, and causality. They try to control the environment in which the data is collected to avoid the risk of variables, other than the one being studied, accounting for the relationships identified. In contrast, qualitative researchers have a more holistic approach and will study documents and case histories and carry out observations and interviews. Their data is collected within the context of its natural occurrence.

Combining methods ultimately strengthens the value of the research. Quantitative researchers will want consistent (or stable) data to enable them to replicate their findings, whilst qualitative researchers require validity of data to provide representation of a true and full picture. Consequently, management researchers are beginning to combine methods so that the advantages of each methodology compliment each other resulting in more valid and reliable findings. This minimises the disadvantages of both methods thus reducing the threat to internal validity.

In this study, both quantitative and qualitative techniques will be employed in a mixed status design.⁶⁶ By combining both quantitative and qualitative techniques, it is hoped to combine the rigour and precision of experimental (or quasi-experimental) designs and quantitative data with the depth and understanding of qualitative methods and data.

For the quantitative research, two software programmes will be employed: Statistical Package for the Social Sciences (SPSS®) (Version 13.5); and Analysis of Moment Structures (AMOS®)(Version 4.0). The qualitative analysis will be undertaken via a discourse analysis. Discourse analysis (DA) is a general term for a number of approaches to analyse written, spoken or signed language use. It has been taken up in a variety of social science disciplines, including linguistics, anthropology, sociology, cognitive psychology, social psychology, international relations and communication studies, each of which is subject to its own assumptions, dimensions of analysis, and methodologies. DA looks at how people produce a version of an account of an issue (Coffey & Atkinson, 1996).

⁶⁶ There are many ways to mix the models: sequential studies; parallel/simultaneous studies; equivalent status design; and dominant less dominant studies.

6.5.4 STRUCTURAL EQUATION MODELLING

Once the information/data (described at Section 6.4.7) is established, the '1996 Theory' will be tested using Structural Equation Modelling (SEM). SEM is a technique which effectively subsumes a whole range of standard multivariate analysis methods, including regression, factor analysis, and analysis of variance. Whilst being a sophisticated theoretical tool, and certainly not easy to implement, SEM actually underlies much of what practising researchers do on a daily basis. That is, based on things that can be measured, predictions are made of things that cannot be measured. In addition, for advanced research, SEM provides an opportunity to hypothesise models of behaviour, and to test or confirm these models statistically. Technically, SEM estimates the unknown coefficients in a set of linear structural equations. Variables in the equation system are usually directly observed variables and unmeasured latent variables (that are not observed but relate to observed variables). SEM assumes that there is a causal structure among a set of latent variables, and that the observed variables are indicators of the latent variables. The latent variables may appear as linear combinations of observed variables, or they may be intervening variables in a causal chain.

To paraphrase Byrne (1994), SEM is a statistical methodology that takes a hypothesis-testing (i.e. confirmatory) approach to the multivariate analysis and provides an opportunity to hypothesise models of behaviour, and to test these models statistically. By contrast, multivariate procedures commonly used in research are essentially descriptive or exploratory in nature (e.g. principal components analysis and cluster analysis); therefore, hypothesis testing — using these techniques — is difficult, if not impossible. SEM

generally involves the specification of an underpinning linear regression-type model (incorporating the structural relationships or equations between unobserved or latent variables) together with a number of observed or measured indicator variables. By examining the co-variation between the observed variables, it is possible to:

- estimate the values of the coefficients in the underpinning linear model;
- statistically test the adequacy of the model to represent the process(es) being studied;
and
- if the model is adequate, conclude that the postulated relationships are plausible (or, more correctly, that they are not inconsistent with the data).

6.5.4.1 Some Basic Concepts. A Structural Equation Model — in its most general form — involves the specification of a number of components which, when pictured in full detail, can be more than daunting to the tyro-modeller. It is, therefore, instructive to examine the various elements of SEM, one by one.

LATENT VARIABLES

Unobserved (or unmeasured) latent variables are those which represent abstract concepts or theoretical constructs which cannot be measured directly. Such variables are often referred to as 'factors' or 'common factors'. That is, they are presumed to underlie what can be observed, in the sense that the latent variables directly influence the outcome or values taken by the observed variables.

In pictorial form, latent variables are represented as ellipses, as shown in Figure 6.1.



Figure 6.2: Latent Variables

Latent variables can be correlated with each other, as represented by the double-headed arrow in Figure 6.2.

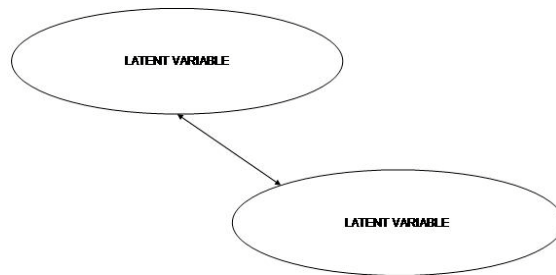


Figure 6.3: Correlation of Latent Variables

Latent variables can also influence other latent variables directly, via a regression-type relationship, as represented by the single-headed arrows, shown in Figure 6.3.

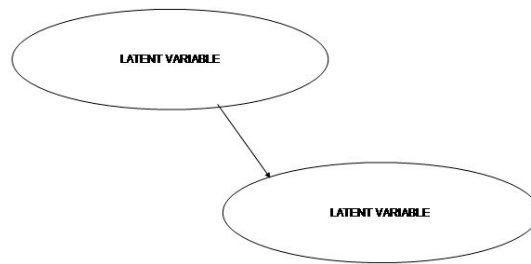


Figure 6.4: Regression of Latent Variables

OBSERVED VARIABLES

Because latent variables are, by definition, unobservable, their measurement must be obtained indirectly. This is done by linking one or more observed variables to each unobserved variable. In fact, whilst this may sound an overly fussy process, it is effectively what most of us do on a day-to-day basis as we prepare questionnaires. The difference, however, lies in how the information is analysed. With SEM, the linking of observed (or indicator) variables with latent (or unobserved) variables is the first step in a formal statistically valid procedure. In contrast, in day-to-day work, the linking procedure is oftentimes implicit; in other words, if it is felt that a particular measured variable makes a good indicator of some underlying construct, then it is simply used.

In pictorial form, observed or indicator variables can be represented as rectangles, as shown in Figure 6.4.

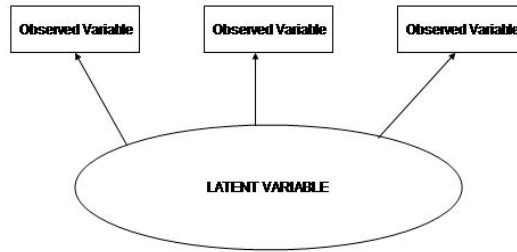


Figure 6.5: Observed Variables

In Figure 6.4, the single-headed arrows (connecting the latent and observed variables) indicate that the latent variables directly influence the outcome or values taken by the observed variables, again through a regression-type relationship.

STILL MORE VARIABLES

Apart from the latent and observed variables, there are residual and error terms associated with each of these, which also form a key part of the overall model. A fully specified SEM is potentially a complex interplay between a large number of observed and unobserved variables, and residual and error terms. This is shown at Figure 6.5, the SEM Model.

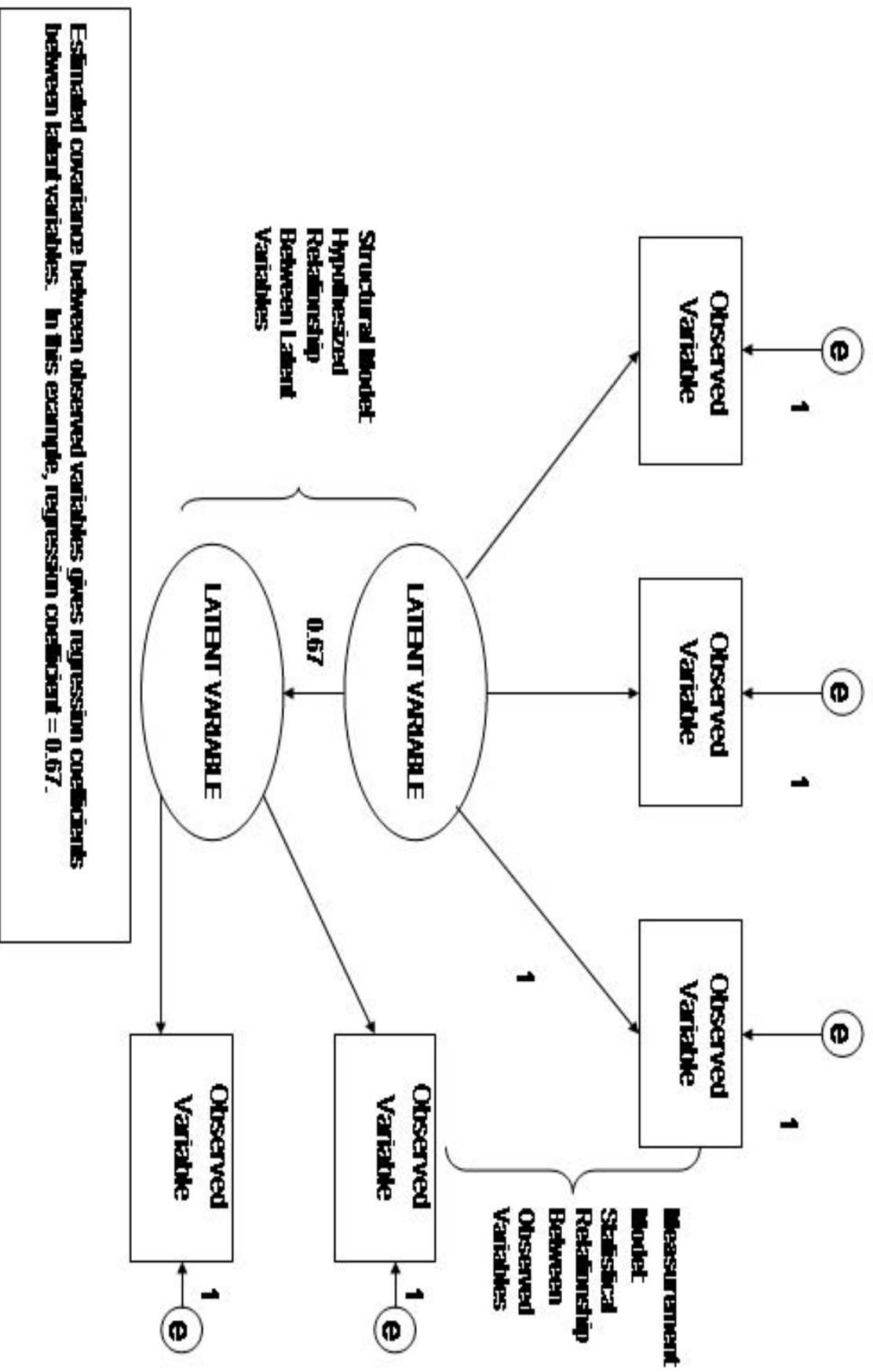


Figure 6.6: The SEM Model

CALIBRATION AND HYPOTHESIS TESTING

Figure 6.6 indicates that there is a hypothesised relationship between a number of latent variables; this is the so-called 'Structural Model'. In addition, Figure 6.6 indicates that there are a number of variables, which are observed directly, the statistical relationships between which can be used to calibrate the underlying structural model. This set of statistical relationships is the so-called 'Measurement Model'.⁶⁷

The central thesis of SEM is then twofold:

- the statistical relationship between the observed variables (in fact, the estimated covariances between them) can be used to provide estimates of the regression coefficients which link the unobserved, latent variables; and
- the adequacy, or goodness-of-fit, of the hypothesised structural model can be statistically tested using methods closely aligned with conventional chi-square goodness-of-fit approaches.

SEM serves purposes similar to multiple regression, but in a more powerful way which takes into account the modelling of interactions, nonlinearities, correlated independents, measurement error, correlated error terms, multiple latent independents (each measured by multiple indicators), and one or more latent dependents also each with multiple indicators. SEM may be used as a more powerful alternative to multiple regression, path analysis, factor

⁶⁷ The latent variables are linked to each other via regression-type relationships, so that calibration in this context simply means estimating values for the relevant regression coefficients.

analysis, time series analysis, and analysis of covariance. That is, these procedures may be seen as special cases of SEM, or, to put it another way, SEM is an extension of the general linear model (GLM) of which multiple regression is a part.⁶⁸ Advantages of SEM compared to multiple regression include the use of confirmatory factor analysis to reduce measurement error by having multiple indicators per latent variable, the attraction of SEM's graphical modelling interface, the desirability of testing models overall rather than coefficients individually, the ability to test models with multiple dependents, the ability to model mediating variables, the ability to model error terms, the ability to test coefficients across multiple between-subjects groups, and the ability to handle difficult data (time series with auto correlated error, non-normal data, incomplete data).

In addition, SEM is usually viewed as a confirmatory rather than exploratory procedure, using one of three approaches:

- Strictly confirmatory approach: a model is tested using SEM goodness-of-fit tests to determine if the pattern of variances and covariances in the data is consistent with a structural (path) model specified by the researcher. However, as other unexamined models may fit the data as well or better, an accepted model is only a not-disconfirmed model.

⁶⁸ The GLM is a statistical linear model. It may be written as: $y = ax + b$, where y is a matrix with series of multivariate measurements, a is a matrix that might be a design matrix, x is a matrix containing parameters that are usually to be estimated and b is a matrix containing residuals (i.e., errors or noise). The residual is usually assumed to follow a multivariate normal distribution. If the residual is not a multivariate normal distribution, generalized linear models may be used to relax assumptions about y and b . The general linear model incorporates a number of different statistical models: ANOVA, ANCOVA, MANOVA, MANCOVA, ordinary linear regression, t-test and F-test. If there is only one column in y (i.e., one dependent variable) then the model can also be referred to as the multiple regression model (multiple linear regression). Hypothesis tests with the general linear model can be made in two ways: multivariate and mass-univariate.

- Alternative models approach: one may test two or more causal models to determine which has the best fit. There are many goodness-of-fit measures, reflecting different considerations, and the researcher reports usually three or four. Although desirable in principle, this approach runs into the real-world problem that in most specific research topic areas, the researcher does not find in the literature two well-developed alternative models to test.
- Model development approach: in practice, much SEM research combines confirmatory and exploratory purposes. A model is tested using SEM procedures, found to be deficient, and an alternative model is then tested based on changes suggested by SEM modification indexes. This is the most common approach found in the literature. The problem with the model development approach is that models confirmed in this manner are post-hoc ones, which may not be stable (may not fit new data, having been created based on the uniqueness of an initial dataset). Researchers may attempt to overcome this problem by using a cross-validation strategy under which the model is developed using a calibration data sample and then confirmed using an independent validation sample.

In this research, the first approach will be used i.e. a model is tested using SEM goodness-of-fit tests to determine if the pattern of variances and covariances in the data is consistent with a structural (path) model specified by the researcher. However, regardless of the approach, SEM cannot itself draw causal arrows in models or resolve causal ambiguities. Theoretical insight and judgment by the researcher is still of utmost importance.

In summary, SEM is a family of statistical techniques, which incorporates and integrates path analysis and factor analysis and refers to a hybrid model with both multiple indicators for each variable and paths specified connecting the latent variables. Synonyms for SEM are covariance structure analysis, covariance structure modelling, and analysis of covariance structures. There are several types of SEM software available: LISREL® (the original and possibly still most popular program for SEM); EQS; AMOS®; and Mx.

6.6 SUMMARY OF CHAPTER 6

6.6.1 ANALYSIS OF PREVIOUS RESEARCH METHODOLOGY USED TO TEST PATH-GOAL THEORY

It is important that accurate leader behaviour scales be employed. In addition, instrumentation effects have been significant, as have been self-report measures to assess both leader behaviours and outcome variables, resulting in serious concerns over common method variance. Adequate tests of the theory should include independent measures of moderator variables. There are so many possible interpretations of the empirical findings that it is impossible to assess the validity of the theory at this time.

6.6.2 CONSTRAINTS TO THE RESEARCH METHODOLOGY

The research has three principal constraints: a fixed time period did not allow for an exhaustive analysis; the only SMv that would be examined is the characteristic of the task or task demand; and the five intervening motivational variables of the theory would not be tested.

6.6.3 THE RESEARCH METHODOLOGY

This research is undertaken with personnel from the Royal Air Force and is, therefore, 'context specific'.

- Leader Behaviour Questionnaire One will determine the Leader Behaviours, which are expected to be relevant to the study population.
- Leader Behaviour Questionnaire Two will establish the satisfaction of the subordinate.
- Task Demand Questionnaire One will establish what tasks, members of the population must meet in order to be effective.
- Task Demand Questionnaire Two will determine the most complex, challenging, and repetitive tasks, faced by engineering personnel in the Royal Air Force.
- Task Demand Questionnaire Three will determine the degree of engagement of officers with the most complex, challenging, and repetitive tasks.
- The Unit Performance Indicator Questionnaire will establish the quality of the work unit in terms of team performance, productivity, contribution to organisational goals, and organisational citizenship behaviour.

The resultant information will be analysed via SEM.

6.6.4 QUANTITATIVE AND QUALITATIVE TECHNIQUES TO BE EMPLOYED

Qualitative and quantitative research methods complement each other despite their obvious differences.

Quantitative methods have an objective approach, where data is controlled and measured, to address the accumulation of facts to determine the causes of behaviour. Qualitative methods view data from another's perspective and in so doing attempt to find understanding and meaning. Combining methods ultimately strengthens the value of the research. Consequently, management researchers are beginning to combine methods so that the advantages of each methodology compliment each other resulting in more valid and reliable findings. This minimises the disadvantages of both methods thus reducing the threat to internal validity. In this study, both quantitative and qualitative techniques will be employed in a mixed status design. The quantitative techniques to be employed will use two software programmes. The qualitative analysis will be undertaken with a Content/Discourse analysis.

6.6.5 SEM

SEM provides a statistically valid means of using the information obtained through measurement to calibrate the relationships hypothesised to exist between the underlying (latent) non-measurable variables.

Whilst being a sophisticated theoretical tool, SEM actually underlies much of what is done on a daily basis; that is, based on things that can be measured, attempts are made to make predictions of things that cannot be measured.

SEM also allows researchers to compare statistically the models, which underlie different groups in the population that are being studied. SEM provides an opportunity to hypothesise models, and to test or confirm these models statistically.

Opportunities for use of the SEM approach are numerous, and include customer satisfaction studies and explorations of behavioural and attitudinal motivations.

CHAPTER 7

ESTABLISHING RELEVANT LEADER BEHAVIOURS (THE INDEPENDENT VARIABLE) AND TASK DEMANDS (THE SITUATIONAL MODERATOR VARIABLE)

7.1 INTRODUCTORY REMARKS

In chapter 6, the research methodology is introduced and explained. In chapters 7 & 8, the research results will be presented. These chapters will introduce the third pillar of the research strategy, namely the development of data theory. Therefore, chapters 7 & 8 are dedicated to the gathering of data, and the subsequent analysis and discussion of this material.

In this chapter, the design, delivery and analysis of the first three questionnaires will be presented: Leader Behaviour Questionnaire One; Task Demand Questionnaire One; and Task Demand Questionnaire Two. Therefore, in line with the research methodology, information on the Iv and the SMv is established.

The aim of this chapter is to establish the relevant leader behaviours and task demands. In detail, this chapter will describe: the design, delivery and analysis of Leader Behaviour Questionnaire One; the design, delivery and analysis of Task Demand Questionnaire One; and the design, delivery and analysis of Task Demand Questionnaire Two. Finally, the chapter will be concluded by a summary.

7.2 DESIGN, DELIVERY AND ANALYSIS OF LEADER BEHAVIOUR

QUESTIONNAIRE ONE

7.2.1 DESIGN OF LEADER BEHAVIOUR QUESTIONNAIRE ONE

Due to the time constraints of this research, it was decided to focus on only four leader behaviours, from the eight cited in the '1996 Theory'.⁶⁹ The design of this questionnaire involved summarising (in paragraph form) the eight behaviours originally cited in the '1996 Theory'. In this way, the respondents to the questionnaire could quickly understand the meaning of each leader behaviour. The summary paragraphs of these behaviours are shown in Leader Behaviour Questionnaire One at Annex B.⁷⁰ In this questionnaire, the respondents were asked to indicate which four of the eight leader behaviours cited, were relevant to engineers in the Royal Air Force today.

7.2.2 DELIVERY OF LEADER BEHAVIOUR QUESTIONNAIRE ONE

In October 2002, 87 questionnaires were sent by the Directorate of Defence Studies (Royal Air Force) at the Defence Academy of the United Kingdom⁷¹ to every Royal Air Force engineer Officer of Group Captain rank and above (including Air Commodore and Air-Vice Marshal ranks). At this stage, it was deemed important to measure 'expert opinion'.⁷² In other words, this cohort were working at the corporate level of the Royal Air Force (with

⁶⁹ Advice given by Professor Robert House.

⁷⁰ This questionnaire was piloted to 20 engineers to determine if it was offensive, insulting, patronising, easy to read, appropriate, and not confusing.

⁷¹ See: www.da.mod.uk

⁷² Advice given by Professor Robert House.

some having over 25 years experience of military engineering) and their opinions of the most relevant leader behaviours (to establish the relevant Ivs) were seen as most important.⁷³

For ease of understanding, Table 7.1 offers a comparison of these Air Force ranks (Group Captain, Air Commodore and Air-Vice Marshal) with their civilian equivalent in terms of remuneration, responsibility, span of control and interface with central government.⁷⁴

RANK	CIVILIAN EQUIVALENT
Air-Vice Marshal (AVM)	Senior Manager up to Chairman or Chief Executive. In personnel terms, responsibility for 10000 to 50000. Extensive management and strategic planning experience including international and geo-political aspects. Also has considerable experience of interface with Government policy making and administrative machinery.
Air Commodore (Air Cdre)	Managing Director of company of up to 10000 staff. Extensive management and operational experience.
Group Captain (Gp Capt)	Middle up to Senior Manager/Operations Director: highly qualified and experienced in administration and personnel management. In personnel terms, 500 to 5000 employees.

Table 7.1: Comparison of Royal Air Force Rank and Civilian Equivalent

7.2.3 ANALYSIS OF LEADER BEHAVIOUR QUESTIONNAIRE

The response rate was excellent: 81 responses were received, giving an overall response rate of 93%. The data was analysed using the programme, SPSS® (Version 13.5). Table 7.2 portrays the basic (descriptive) analysis.

RANK	FREQUENCY	%	CUMULATIVE %
AVM	7	7.6	7.6
Air Cdre	12	14.7	23.5
Gp Capt	62	76.5	100.0
Total	71	100.0	100.0

Table 7.2: Response Rate by Rank

⁷³ See: 'The Social Scientific Study of Leadership: Quo Vadis', Journal of Management 1997 Vol.23, No.3, page 4346 by Robert J House and Ram N Aditya. One of the limitations in leadership research — to date — is that senior personnel have seldom been studied.

⁷⁴ Comparison provided by Coutts Consulting Group/Ministry of Defence (see: www.ctp.org.uk).

The Top 4 leader behaviours were supportive leader behaviour, path-goal leader behaviour, interaction facilitation leader behaviour, and work facilitation leader behaviour. This information is shown in Table 7.3, which details leader behaviour by rank order.

RANK ORDER	BEHAVIOUR
1	Support
2	Path-Goal
3	Interaction Facilitation
4	Work Facilitation
5	Achievement
6	Representation
7	Value
8	Group

Table 7.3: Leader Behaviour by Rank Order

Tables 7.4 to 7.11 develop this analysis further, by showing the overall descriptive statistics and individual 'scoring', for each leader behaviour.

Path-Goal	Frequency	%	Valid %	Cumulative %
No	29	35.7	35.7	35.7
Yes	52	64.2	64.2	100.0
Total	71	100.0	100.0	

Table 7.4: Scoring by Path-Goal

Achievement-Orientated	Frequency	%	Valid %	Cumulative %
No	40	49.4	49.4	49.4
Yes	41	50.6	50.6	100.0
Total	71	100.0	100.0	

Table 7.5: Scoring by Achievement-Orientated

Supportive	Frequency	%	Valid %	Cumulative %
No	24	29.6	29.6	29.6
Yes	57	70.4	70.4	100.0
Total	71	100.0	100.0	

Table 7.6: Scoring by Supportive

Work Facilitation	Frequency	%	Valid %	Cumulative %
No	40	49.4	49.4	49.4
Yes	41	50.6	50.6	100.0
Total	71	100.0	100.0	

Table 7.7: Scoring by Work Facilitation

Interaction Facilitation	Frequency	%	Valid %	Cumulative %
No	31	37.3	37.3	37.3
Yes	50	61.7	61.7	100.0
Total	71	100.0	100.0	

Table 7.8: Scoring by Interaction Facilitation

Group-Orientated Decision Process	Frequency	%	Valid %	Cumulative %
No	71	77.7	77.7	77.7
Yes	10	12.3	12.3	100.0
Total	71	100.0	100.0	

Table 7.9: Scoring by Group-Orientated Decision Process

Representation and Networking	Frequency	%	Valid %	Cumulative %
No	45	55.6	55.6	55.6
Yes	36	44.4	44.4	100.0
Total	71	100.0	100.0	

Table 7.10: Scoring by Representation and Networking

Value-Based	Frequency	%	Valid %	Cumulative %
No	51	63.0	63.0	63.0
Yes	30	37.0	37.0	100.0
Total	71	100.0	100.0	

Table 7.11: Scoring by Value-Based

For further analysis, it was then deemed important to determine if each rank (AVM, Air Cdre, Gp Capt) scored the leader behaviours differently: for example, did each rank 'cohort' have different preferences for Leader Behaviours? The preferred Leader Behaviours, scored by rank, are shown in Table 7.12.

RANK		
AVM	Air Cdre	Gp Capt
1 Work Facilitation	1= Support; Interaction Facilitation	1 Support
2=Value; Path-Goal	2	2 Path-Goal
3	3 Achievement	3=Work Facilitation; Interaction Facilitation
4 Interaction Facilitation	4 Representation	4
5=Achievement; Support; Group; Representation	5 Value	5 Achievement
6	6=Path-Goal; Work Facilitation	6 Representation
7	7	7 Value
8	8 Group	8 Group

Table 7.12: Preferred Leader Behaviours by Rank

As the number of AVMs was only seven, the results (of this cohort) were treated with caution. Each rank cohort has different ‘Top 4’ scores; however, the leader behaviour of support (a leader behaviour that offers psychological support for subordinates, especially required under conditions in which tasks or relationships are psychologically or physically distressing) appears as the top leader behaviour for the Air Cdre and Gp Capt cohort. In addition, the leader behaviour of Interaction Facilitation (a leader behaviour that facilitates collaboration and provides positive interaction) is a consistent Top 4 placing. Finally, it is interesting to note that all cohorts scored the leader behaviour of Group-Orientated Decision Process, or ‘Group’ (a leader behaviour which concerns the manner by which decisions that affect the group are made) as the least preferred leader behaviour. On balance, this is perhaps the only result that could be expected: leadership behaviour, although generally consultative and participatory in the Royal Air Force, cannot accommodate decision-making by ‘committee’.

A full analysis of these results (including cross-tabulation) is replicated in Tables C.1 to C.8 at Annex C.

In summary, the leader behaviours to be tested as the Iv — via SEM — are supportive leader behaviour, path-goal leader behaviour, interaction facilitation leader behaviour, and work facilitation leader behaviour.

7.3 DESIGN, DELIVERY AND ANALYSIS OF TASK DEMAND QUESTIONNAIRE ONE

7.3.1 THE TASK DEMAND QUESTIONNAIRE

The main SMv to be tested (from the '1996 Theory') in this thesis, is the task demand. To test these SMvs — via SEM —, it is important to establish (qualitatively) the main task demands faced by engineers in the Royal Air Force and then to rate these task demands (quantitatively). Therefore, Task Demand Questionnaire Three will be derived from two Task Demand Questionnaires: Task Demand Questionnaire One (qualitative research) and Task Demand Questionnaire Two (quantitative research).

7.3.2 DESIGN OF TASK DEMAND QUESTIONNAIRE ONE

At this stage of the research, it was not known what the main task demands were which faced Royal Air Force engineers. Therefore, it was decided to use simple open-ended questions to establish this information. This rationale had two principal reasons: the researcher did not know how the respondent would answer, and the researcher did not want to influence the respondents.⁷⁵ The questionnaire asked the respondents to describe

⁷⁵ In essence, the researcher wanted to ensure freedom of response. Therefore, the questions were 'loosely' set.

three of their tasks (i.e. task demands) that they must complete on a weekly basis. In detail, the researcher wanted to know which tasks caused the greatest amount of frustration, dissatisfaction, uncertainty and stress. Task Demand Questionnaire One is shown at Annex D.⁷⁶

7.3.3 DELIVERY OF TASK DEMAND QUESTIONNAIRE ONE

In July 2004, 400 questionnaires were sent — by Headquarters Strike Command at Royal Air Force High Wycombe⁷⁷ — to engineers in the Royal Air Force. This sample varied in rank from Senior Non-Commissioned personnel (SNCO) to officers (both junior and senior). For ease of understanding, Table 7.13 offers a comparison of these Air Force ranks (SNCO, junior Officer, senior Officer) with their civilian equivalent in terms of remuneration, responsibility, and span of control.⁷⁸

RANK	CIVILIAN EQUIVALENT
SNCO	Middle manager/senior supervisor/purchasing manager/personnel officer/training manager with responsibility for up to 50 staff. Frequently very highly qualified in a trade or profession and very experienced in training and instructing others.
Junior Officer	Deputy/assistant manager, operations manager. Professionally qualified and will be trained and experienced in general management and team leadership techniques.
Senior Officer	Branch or functional manager/department head – total responsibility of workforce of around 100 to 200.

Table 7.13: Comparison of Royal Air Force Rank and Civilian Equivalent

⁷⁶ Again, this questionnaire was piloted to 20 Engineers to determine if it was offensive, insulting, patronising, easy to read, appropriate, and not confusing.

⁷⁷ See: <http://raf.mod.uk/stc/index.html>

⁷⁸ Again, comparison provided by Coutts Consulting Group/Ministry of Defence (see: www.ctp.org.uk)

The questionnaires were sent to four main domains where engineers in the Royal Air Force are employed: Integrated Project Teams, Main Operating Bases, Headquarters Environments, and Training Environments. For ease of analysis, Table 7.14 offers a brief description of these domains.

RANK	CIVILIAN EQUIVALENT
Integrated Project Teams	Organizations which work with the Ministry of Defence, Civil Servants, Procurement Professionals, Private Sector (Defence Industries) and many other stakeholders.
Main Operating Bases	Air Force bases which operate front-line (combat) aircraft.
Headquarters	Large corporate Headquarters where policy and strategy are set.
Training Environments	Establishments where other military engineers are trained

Table 7.14: Description of Operating Domains.

7.3.4 ANALYSIS OF TASK DEMAND QUESTIONNAIRE ONE

260 responses were received, giving an overall response rate of 65%. The data was analysed by a DA.⁷⁹ In the analysis of Task Demand Questionnaire One, the following procedures were followed for the DA:

- The answers (by the respondents) were reviewed: they were grouped initially together based on officer/SNCO and operating domain (main operating base, integrated project team, training environment, headquarters). Then, the responses were listed within these groups to get first-level subgroups.

⁷⁹ Whilst traditional statistics permit the scientific analysis of quantitative variables (i.e. closed response or numerical), they do not let the researcher explore qualitative data (i.e. open-ended text). Such data is rich in information, but requires a different approach to analysis due to the lack of structure, low repetition, and potential ambiguities. In this technique, the researcher reads open text responses in an attempt to draw general conclusions. In detail, a DA is a loose collection of methods for use when numeric data is not available; it is a set of procedures for collecting and organizing non-structured information into a standardized format that allows one to make inferences about the characteristics and meaning of written and otherwise recorded material.

- The answers were combined into sub-groups within each of the first-level subgroups.
- A coding system was developed whereby all answers (the data) were meaningfully characterized, easily managed, and related to the research question.⁸⁰
- Once the coding system was derived and applied, each answer was tabulated and an analysis undertaken.⁸¹

The advantages of this method include a systematic approach and a comprehension of a variety of situations (Silverman, 2004). The results, of significance, are detailed below in Tables 7.15 to 7.16. Further analysis is offered in Tables E.1 to E.3 at Annex E.

Of note, the four principal task demands were ‘reduced’ to:

- the management of change;
- introduction of training programmes (associated with the management of change);
- welfare/discipline/morale issues; and

⁸⁰ It is important to select methods that are appropriate for the type of knowledge sought, rather than using the most convenient methods. The purpose of the research should dictate the research methodology and choice of samples (Rudestam, 2001 (pps 33, 43)).

⁸¹ A good coding scheme is one in which there is one and only one code for every answer, and every answer can be coded (i.e. the coding scheme consists of mutually exclusive and exhaustive codes).

- career guidance/personal development of subordinates.

In general, these tasks were similar for both officers and SNCOs.

	MAIN OPERATING BASE	INTEGRATED PROJECT TEAM	TRAINING ENVIRONMENT	HEADQUARTERS
OFFICER	Change Management Professional Tasks General Management Career Guidance	Engineering Management Developing New Procedures Personnel Management	Management of Training Welfare/Discipline/Morale issues Personnel Management	Cost Savings/Efficiency Issues Change Management Career Guidance/ Personal Development of Subordinates

Table 7.15: Principal Task Demands of Officers: Comparisons by Functional Area

	MAIN OPERATING BASE	INTEGRATED PROJECT TEAM	TRAINING ENVIRONMENT	HEADQUARTERS
SNCO	General Engineering Morale Physical Fitness Levels Discipline	Change Management Training Programmes Welfare/Coaching Discipline	Training Programmes Welfare/Coaching Discipline	Training of Staff Arranging Sport Career Guidance/ Personal Development of Subordinates

Table 7.16: Principal Task Demands of SNCOs: Comparisons by Functional Area

7.4 DESIGN, DELIVERY AND ANALYSIS OF TASK DEMAND QUESTIONNAIRE TWO

7.4.1 DESIGN OF TASK DEMAND QUESTIONNAIRE TWO

To test the '1996 Theory', via SEM, it is important to rate quantitatively the data from Task Demand Questionnaire One. The basis approach used was to sample a different cohort of engineers and ask them to describe the tasks (identified from Task Demand Questionnaire One) in terms of the following adjectives: simple/complex, routine/challenging, and varied/repetitive.⁸²

Closed-end questions were used throughout. These types of question are used when possible answers or responses are pre-specified by the researcher but what is not known is the frequency of the response.⁸³ Moreover, at the design stage of Task Demand Questionnaire Two, several factors were considered:

- the rating scales must be isomorphic and non-degenerating;⁸⁴ and
- the scales are unidimensional scales (i.e. they measure a single predefined attitude of an object) — in this case, a specific rating scales.⁸⁵

⁸² Advice given by Professor R J House. This approach would ensure further validity by asking an independent sample to comment.

⁸³ Closed-end questions come in a variety of forms and versions. If the answer alternatives for a closed-end question are somehow graduated to measure a continuous construct (such as an attitude, opinion, intention, perception, or preference), the question is traditionally referred to as a monadic scale or rating scale. The number of answers can vary — theoretically — from two to infinity. In addition, closed-end questions are easier for respondents to answer; however, it is important for the researcher/analyst to watch for ballot effect and position effect.

⁸⁴ For example, male is always 1 and female is always 2.

An example of Task Demand Questionnaire Two is shown at Annex F.

7.4.2 DELIVERY OF TASK DEMAND QUESTIONNAIRE TWO

In November 2004, 129 questionnaires were sent — by Headquarters Engineer and Supply Squadron at Royal Air Force Boulmer — to engineers employed at this air force base.^{86,87}

This sample again varied in rank from SNCOs to officers (both junior and senior).

7.4.3 ANALYSIS OF TASK DEMAND QUESTIONNAIRE TWO

The respondents were asked to indicate — via a Likert Scale — how simple versus complex, routine versus challenging, and varied versus repetitive, were the principal task demands established from Task Demand Questionnaire One. The response rate was good: 76 responses were received, giving an overall response rate of 63%. The data was analysed using SPSS® (Version 13.5). The analysis of Task Demand Questionnaire Two is split into two parts: first, descriptive statistics; and second, inferential statistics (which offer analysis of the material in greater depth). For the inferential statistics, the data is judged to be ordinal, as Likert scales were employed;⁸⁸ therefore, non-parametric tests were employed to analyse the data.⁸⁹

⁸⁵ Specific Rating Scales can take several forms including semantic differential, likert, and staple.

⁸⁶ This questionnaire was again piloted to determine if it was offensive, insulting, easy to read, appropriate, and not confusing.

⁸⁷ See: <http://raf.mod.uk/stations/ukadge.html>

⁸⁸ A set of data is said to be ordinal if the values observations belonging to it can be ranked (put in order) or have a rating scale attached. You can count and order, but not measure, ordinal data.

⁸⁹ When the data are non-normally distributed, non-parametric tests are used. Non-parametric tests are inferential tests that make very few assumptions about the data and

7.4.3.1. Descriptive Statistics. Table 7.17 gives a basic breakdown of frequencies.

RANK					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Officer	35	40.7	40.7	40.7
	SNCO	51	59.3	59.3	100.0
	Total	76	100.0	100.0	

Table 7.17: Descriptive Statistics — Frequencies

In Tables 7.18 to 7.29, the four main task demands of the management of change, the introduction of training programmes (associated with the management of change), welfare/discipline/morale issues, and career guidance/personal development of subordinates are rated in terms of simple versus complex, routine versus challenging, and varied versus repetitive. At this stage of the analysis, no difference is made between the results offered by officers or SNCOs. These tables (7.18 to 7.29) demonstrate the following:

Management of Change:

- the management of change is seen as more complex than simple;
- the management of change is seen as more challenging than routine; and
- the management of change is seen as more varied than repetitive.

Introduction of Training:

- the introduction of training is seen as more complex than simple;

in particular, its distribution.

- the introduction of training is seen as more routine than challenging; and
- the introduction of training is seen as more varied than repetitive.

Welfare/Discipline/Morale:

- welfare/discipline/morale issues are seen as more complex than simple;
- welfare/discipline/morale issues are seen as more challenging than routine; and
- welfare/discipline/morale issues are seen as more varied than repetitive.

Personal Development/Career Guidance of Subordinates:

- personal development/career guidance issues are seen as more complex than simple;
- personal development/career guidance issues are seen as more challenging than routine; and
- personal development/career guidance issues are seen as more varied than repetitive.

COMPARISON OF MANAGEMENT OF CHANGE (OFFICERS AND SNCO)

Simple Versus Complex

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	5	5.7	5.7	5.7
	3	4	4.7	4.7	10.5
	4	25	29.1	29.1	39.5
	5	34	39.5	39.5	79.1
	6	17	20.9	20.9	100.0
	Total	76	100.0	100.0	

Table 7.18: Simple Versus Complex

Routine versus Challenging

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	6	7.0	7.0	7.0
	3	7	7.1	7.1	15.1
	4	33	37.4	37.4	53.5
	5	22	25.6	25.6	79.1
	6	13	15.1	15.1	94.2
	Challenging	5	5.7	5.7	100.0
	Total	76	100.0	100.0	

Table 7.19: Routine Versus Challenging

Varied versus Repetitive

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Varied	2	2.3	2.3	2.3
	2	19	22.1	22.1	24.4
	3	16	17.6	17.6	43.0
	4	37	44.2	44.2	77.2
	5	5	5.7	5.7	93.0
	6	6	7.0	7.0	100.0
	Total	76	100.0	100.0	

Table 7.20: Varied Versus Repetitive

COMPARISON OF INTRODUCTION OF TRAINING (OFFICERS AND SNCO)

Simple Versus Complex

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	5	5.7	5.7	5.7
	3	14	16.3	16.3	22.1
	4	31	36.0	36.0	57.1
	5	25	29.1	29.1	77.2
	6	10	11.6	11.6	97.7
	Complex	1	1.2	1.2	100.0
	Total	76	100.0	100.0	

Table 7.21: Simple Versus Complex

Routine versus Challenging

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	11	12.7	12.7	12.7
	3	12	14.0	14.0	26.7
	4	34	39.5	39.5	66.3
	5	20	23.3	23.3	79.5
	6	6	7.0	7.0	96.5
	Challenging	3	3.5	3.5	100.0
	Total	76	100.0	100.0	

Table 7.22: Routine Versus Challenging

Varied versus Repetitive

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Varied	3	3.5	3.5	3.5
	2	13	15.1	15.1	17.6
	3	17	19.7	19.7	37.4
	4	29	33.7	33.7	72.1
	5	16	17.6	17.6	90.7
	6	7	7.1	7.1	97.7
	Repetitive	1	1.2	1.2	100.0
	Total	76	100.0	100.0	

Table 7.23: Varied Versus Repetitive

COMPARISON OF WELFARE/DISCIPLINE/MORALE (OFFICERS AND SNCO)

Simple Versus Complex

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Simple	1	1.2	1.2	1.2
	2	5	5.7	5.7	7.0
	3	16	17.6	17.6	25.6
	4	17	19.7	19.7	45.3
	5	20	23.3	23.3	67.6
	6	17	20.9	20.9	79.5
	Complex	9	10.5	10.5	100.0
	Total	76	100.0	100.0	

Table 7.24: Simple Versus Complex

Routine versus Challenging

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Routine	5	5.7	5.7	5.7
	2	10	11.6	11.6	17.4
	3	4	4.7	4.7	22.1
	4	22	25.6	25.6	47.7
	5	17	20.9	20.9	67.6
	6	17	20.9	20.9	79.5
	Challenging	9	10.5	10.5	100.0
	Total	76	100.0	100.0	

Table 7.25: Routine Versus Challenging

Varied versus Repetitive

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Varied	10	11.6	11.6	11.6
	2	26	30.2	30.2	41.9
	3	15	17.4	17.4	59.3
	4	17	19.7	19.7	79.1
	5	9	10.5	10.5	79.5
	6	6	7.0	7.0	96.5
	Repetitive	3	3.5	3.5	100.0
	Total	76	100.0	100.0	

Table 7.26: Varied Versus Repetitive

COMPARISON OF PERSONAL DEVELOPMENT/CAREER GUIDANCE OF SUBORDINATES
(OFFICERS AND SNCO)

Simple Versus Complex

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Simple	1	1.2	1.2	1.2
	2	6	7.0	7.0	7.1
	3	16	17.6	17.6	26.7
	4	19	22.1	22.1	47.7
	5	21	24.4	24.4	73.3
	6	20	23.3	23.3	96.5
	Complex	3	3.5	3.5	100.0
	Total	76	100.0	100.0	

Table 7.27: Simple Versus Complex

Routine versus Challenging

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Routine	1	1.2	1.2	1.2
	2	2	2.3	2.3	3.5
	3	12	14.0	14.0	17.4
	4	30	34.9	34.9	52.3
	5	20	23.3	23.3	75.6
	6	17	19.7	19.7	95.3
	Challenging	4	4.7	4.7	100.0
	Total	76	100.0	100.0	

Table 7.28: Routine Versus Challenging

Varied versus Repetitive

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Varied	4	4.7	4.7	4.7
	2	16	17.6	17.6	23.3
	3	26	30.2	30.2	53.5
	4	15	17.4	17.4	70.9
	5	17	20.9	20.9	91.9
	6	6	7.0	7.0	97.7
	Challenging	1	1.2	1.2	100.0
	Total	76	100.0	100.0	

Table 7.29: Varied Versus Repetitive

7.4.3.2. Inferential Statistics. In general, inferential statistics are procedures, which are used to draw inferences from the research data. In chapter 6, it was noted that it would be important to determine if the officers perceived the tasks to be the same as their

subordinates (i.e. personnel of SNCO rank). Therefore, to determine if there was ‘inter-rater agreement’ between officers and SNCOs, two methods were employed: cross tabulation of the data and a Mann-Witney test.⁹⁰ The salient information is as follows with cross-tabulated data being presented in Tables G-1 to G-12 at Annex G.

CROSS-TABULATED DATA

Management of Change:

- officers and SNCOs judge (equally) that the management of change is more complex than simple;

⁹⁰ The non-parametric test for unpaired (independent) data is the Mann-Whitney U Test. The data is ranked and sorted into ascending order and the U statistic is calculated as the number of times a value in the first group precedes a value in the second. Non-Parametric tests are often used in place of their parametric counterparts, when certain assumptions about the underlying population are questionable. For example, when comparing two independent samples, the Wilcoxon Mann-Whitney test does not assume that the difference between the samples is normally distributed whereas its parametric counterpart, the two sample t-test does. Non-Parametric tests may be, and often are, more powerful in detecting population differences when certain assumptions are not satisfied. All tests involving ranked data, i.e. data that can be put in order, are non-parametric. The Wilcoxon Mann-Whitney Test is one of the most powerful of the non-parametric tests for comparing two populations. It is used to test the null hypothesis that two populations have identical distribution functions against the alternative hypothesis that the two distribution functions differ only with respect to location (median), if at all. Hypothesis testing involves deciding between two possible hypotheses. H_0 is the Null Hypothesis (the case where there is no difference between the means of the populations from which our samples were drawn) and H_1 is the Alternative Hypothesis (the case where there is a true difference between the population means). To decide if H_0 or H_1 is true, a probability or p -value is calculated. The p -value is the probability that difference observed between the sample means is a ‘chance’ finding due to sample variation. For example, if there is a large p -value, there is a high probability that an observed difference is due to sample variation (chance), and if there is a small p -value, there is a low probability that an observed difference is due to ‘chance’. Therefore small p -value indicates a real or significant difference between means. Finally, the Mann-Whitney test has the following assumptions: random samples from populations; independence within samples and mutual independence between samples; and, measurement scale is at least ordinal.

- officers and SNCOs judge (equally) that the management of change has an equal rating between routine and challenging; and
- officers and SNCOs judge (equally) that the management of change has an equal rating between varied and repetitive.

Introduction of Training:

- officers see the introduction of training as slightly more complex than SNCOs (Table G-4);⁹¹
- officers and SNCOs judge (equally) that the introduction of training has an equal rating between routine and challenging; and
- officers and SNCOs judge (equally) that the introduction of training has an equal rating between varied and repetitive.

Welfare/Discipline/Morale:

- SNCOs see welfare/discipline/morale issues as slightly more complex than Officers (Table G-7);
- officers and SNCOs judge (equally) that the welfare/discipline/morale issues have an equal rating between routine and challenging;

⁹¹ This is to be expected. On the whole, officers will have a greater say in implementing training programmes associated with the management of change.

- officers judge welfare/discipline/morale issues as slightly more varied than SNCOs (Table G-9).⁹²

Personal Development/Career Guidance:

- officers see personal development/career guidance issues as more complex than SNCOs (Table G-10);⁹³
- officers and SNCOs judge (equally) that personal development/career guidance issues have an equal rating between routine and challenging; and
- officers and SNCOs judge (equally) that personal development/career guidance issues have an equal rating between varied than repetitive.

In general, while there are some slight differences in the data, it is accepted that the results are isomorphic and, therefore, there is inter-rater agreement.

MANN-WHITNEY TEST

⁹² This is to be expected. On the whole, officers will see a wider selection of welfare/discipline/morale issues than SNCOs.

⁹³ This is to be expected. On the whole, officers will have a greater involvement in personal development/career guidance issues than SNCOs.

Table 7.30 offers summary data about the test statistics and ρ -values.

Test Statistics(a)

	The Management of Change			Introduction of Training Programmes			Welfare/Discipline/Morale			Career Guidance/Personal Development of Subordinates		
	Simple Versus Complex	Routine versus Challenging	Varied versus Repetitive	Simple Versus Complex	Routine versus Challenging	Varied versus Repetitive	Simple Versus Complex	Routine versus Challenging	Varied versus Repetitive	Simple Versus Complex	Routine versus Challenging	Varied versus Repetitive
Mann-Whitney U	677.500	733.500	742.500	719.000	769.500	749.500	737.500	719.500	765.000	632.000	769.000	739.500
Wilcoxon W	2004.500	2159.500	1372.500	2045.000	2095.500	2175.500	1467.500	2045.500	1395.000	1957.000	1499.000	2165.500
Z	-1.977	-5.40	-1.393	-1.577	-1.127	-.379	-.493	-1.550	-1.146	-2.343	-.214	-.477
Asymp. Sig. (2-tailed)	.047	.579	.164	.112	.260	.697	.622	.121	.252	.019	.731	.633

a Grouping Variable: Rank

Table 7.30: Test Statistics and p-values

Management of Change:

- simple versus complex: $u = 677.500; n_1 = 35; n_2 = 51; p = 0.047$
- routine versus challenging: $u = 733.500; n_1 = 35; n_2 = 51; p = 0.579$
- varied versus repetitive: $u = 742.500; n_1 = 35; n_2 = 51; p = 0.164$

Introduction of Training:

- simple versus complex: $u = 719.000; n_1 = 35; n_2 = 51; p = 0.112$
- routine versus challenging: $u = 769.500; n_1 = 35; n_2 = 51; p = 0.260$
- varied versus repetitive: $u = 749.500; n_1 = 35; n_2 = 51; p = 0.697$

Welfare/Discipline/Morale:

- simple versus complex:
u = 737.500; n₁ = 35; n₂ = 51; p = 0.622
- routine versus challenging:
u = 719.500; n₁ = 35; n₂ = 51; p = 0.121
- varied versus repetitive:
u = 765.000; n₁ = 35; n₂ = 51; p = 0.252

Personal Development/Career Guidance:

- simple versus complex:
u = 632.00; n₁ = 35; n₂ = 51; p = 0.019
- routine versus challenging:
u = 769.000; n₁ = 35; n₂ = 51; p = 0.731
- varied versus repetitive:
u = 739.500; n₁ = 35; n₂ = 51; p = 0.633

This data, particularly the high p-values, demonstrate the results are isomorphic.

7.5 DATA SUMMARY

Tables 7.18 to 7.29 also demonstrate that for both officers and SNCOs:

- the most complex tasks are the management of change;
- the most challenging tasks are the career guidance/personal development of subordinates; and
- the most repetitive are welfare/discipline/morale issues.

7.6 SUMMARY OF CHAPTER 7

7.6.1 In this Chapter, the results of the first three questionnaires are presented: Leader Behaviour Questionnaire One; Task Demand Questionnaire One; and Task Demand Questionnaire Two. Therefore, in line with the research methodology, the Iv and SMv are established.

7.6.2 This research is undertaken within the context of a military domain, specifically by using personnel in the Royal Air Force as the primary data source.

7.6.3 The relevant leader behaviours (the Iv) are supportive leader behaviour, path-goal leader behaviour, interaction facilitation leader behaviour, and work facilitation leader behaviour

7.6.4 Task Demand Questionnaire Three is derived from 2 Task Demand Questionnaires: Task Demand Questionnaire One (qualitative research) and Task Demand Questionnaire Two (quantitative research).

7.6.5 The four principal task demands are the management of change, introduction of training programmes (associated with the management of change), welfare/discipline/morale issues and career guidance/personal development of subordinates.

7.6.6 From both cross-tabulation and Mann-Whitney Test analysis, while there are some (and very slight) differences in the data, it is accepted that the results are isomorphic and, therefore, there is inter-rater agreement.

7.6.7 The most complex tasks are the management of change; the most challenging tasks are the career guidance/personal development of subordinates; and the most repetitive tasks are welfare/discipline/morale issues.

CHAPTER 8

STRUCTURAL EQUATION MODELLING OF THE INDEPENDENT VARIABLE, THE SITUATIONAL MODERATOR VARIABLE AND THE DEPENDENT VARIABLE

8.1 INTRODUCTORY REMARKS

The title of this PhD thesis is 'An Evaluation of the Reformulated 1996 Path-Goal Theory of Work Unit Leadership via Structural Equation Modelling'. In chapter 6, the research methodology is introduced and explained; this methodology is designed to eliminate some of the major weaknesses in path-goal research thus far. In chapter 7, the Ivs and SMvs are presented:

- the Ivs are supportive leader behaviour, path-goal leader behaviour, interaction facilitation leader behaviour, and work facilitation leader behaviour; and
- the three SMvs are the management of change, career guidance/personal development of subordinates, and welfare/discipline/morale issues.

The Iv (leader behaviour) and SMv (task demands) are latent variables; therefore, in order to model the '1996 Theory' — via SEM — it is now necessary to understand (and interpret) these latent variables via observed variables. This is demonstrated at Fig 8.0.

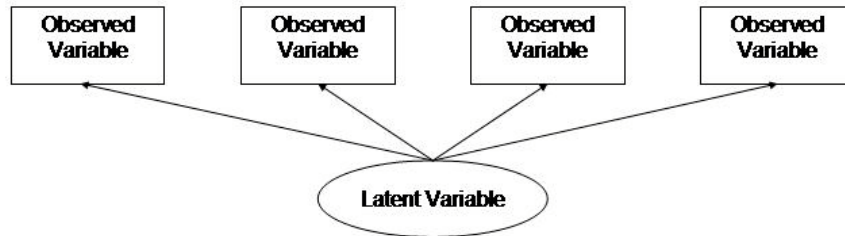


Figure 8.0: Latent Variables and Observed Variables

This chapter will complete the methodology detailed at chapter 6, by ‘running’ the data — established in chapter 7 — through the AMOS® programme to model the ‘1996 Theory’.

The aim of this chapter is to model the data, established thus far, via SEM. In detail, this chapter will: revisit SEM techniques and describe the modelling theory; describe the research sample; explain the design and distribution of Leader Behaviour Questionnaire Two; explain the design and distribution of Task Demand Questionnaire Three; explain the design and distribution of the Performance Questionnaire; describe the modelling process; and present the research results. Finally, the chapter will be concluded with a summary.

8.2 SEM TECHNIQUES AND MODELLING THEORY

8.2.1 SEM TECHNIQUES

SEM is an extension of the GLM that enables a researcher to test a set of regression equations simultaneously. SEM software can test traditional models, but also permits examination of more complex relationships and models, such as confirmatory factor analysis (CFA) and time series analyses. The basic approach to performing a SEM analysis is shown in Figure 8.1.

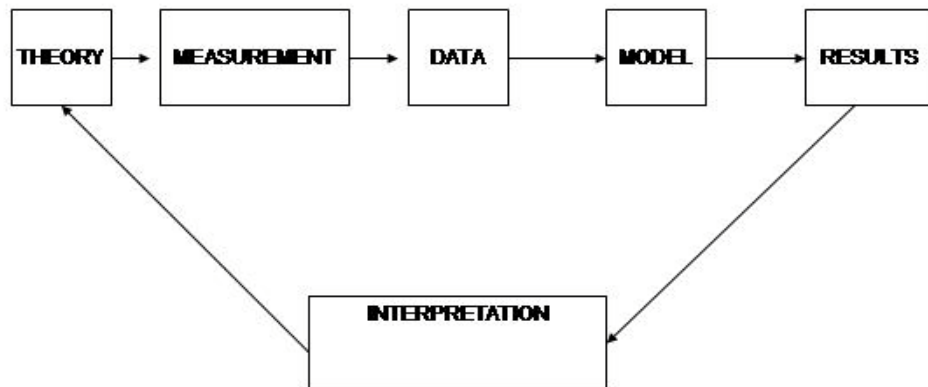


Figure 8.1: SEM Analysis

The researcher first specifies a model based on theory, then determines how to measure constructs, collects data, and then inputs the data into the SEM software package. The

package fits the data to the specified model and produces the results, which include overall model fit statistics and parameter estimates. The input to the analysis is usually a covariance matrix of measured (observed) variables such as survey item scores, though sometimes matrices of correlations or matrices of covariances and means are used. Whilst correlation matrices may be used as inputs, Hair *et al* (2007, p636) recommend using variance/covariance matrices for theory testing as they: “Satisfy the assumptions of the methodology and are the appropriate form of the data for validating causal relationships”. Variance/covariance matrices are, therefore, used in this thesis for these reasons. In practice, the researcher usually supplies SEM programs with raw data (usually exported from programmes such as SPSS®), and the programs convert these data into covariances and means for its own use. The model consists of a set of relationships among the measured variables. These relationships are then expressed as restrictions on the total set of possible relationships, shown in Figure 8.2.

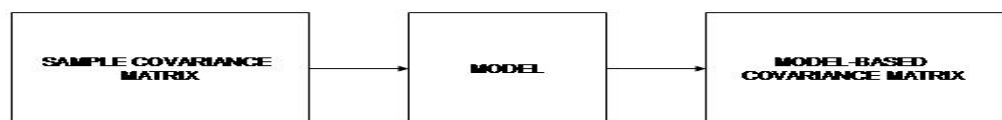


Figure 8.2: Relationships Among Measured Variables

The results offer overall indexes of model fit as well as parameter estimates, standard errors, and test statistics for each free parameter in the model.

SEM has a language all its own. Statistical methods in general have this property, but SEM users and creators seem to have elevated specialized language to a new level. Ivs, which are assumed to be measured without error, are called exogenous or upstream variables and dependent or mediating variables are called endogenous or downstream variables. Manifest or observed variables are directly measured by researchers, while latent or unobserved variables are not directly measured, but are inferred by the relationships or correlations among measured variables in the analysis. This statistical estimation is accomplished in much the same way that an Exploratory Factor Analysis (EFA) infers the presence of latent factors from shared variance among observed variables.

SEM users represent relationships among observed and unobserved variables using path diagrams. Ovals or circles represent latent variables, while rectangles or squares represent measured variables. Residuals are always unobserved, so they are represented by ovals or circles. In Figure 8.3, correlations and covariances are represented by bidirectional arrows, which represent relationships without an explicitly defined causal direction. For instance, F1 and F2 are related or associated, but no claim is made about F1 causing F2, or vice versa.

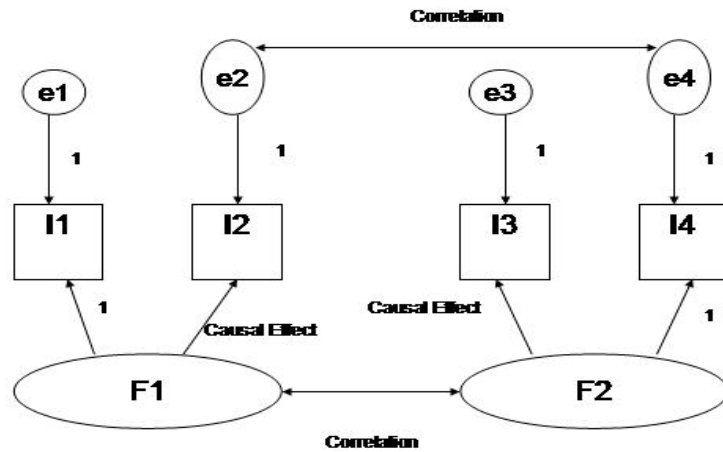


Figure 8.3: Path Diagrams

By contrast, it is claimed that F1 causes the scores observed on the measured variables I1 and I2. Causal effects are represented by single-headed arrows in the path diagram. F1 and F2 can be conceptualized as the variance the two indicators share (i.e., what the two indicators have in common.) F1 and F2 are latent factors; I1 through I4 are observed variables (for example, survey items). E1 through E4 are residual or error variances that also cause response variation in I1 through I4. This diagram describes scores or responses on survey items 1 through 4, which are caused by two correlated factors, along with variance that is unique to each item. Some of that unique variance might be due to measurement error.

Some of the paths shown in the diagram are labelled with the number '1'. This means that those paths' coefficients have fixed values set to 1.00. These fixed values are included by necessity: they set the scale of measurement for the latent factors and residuals.

SEM has a number of attractive virtues:

- assumptions underlying the statistical analyses are clear and testable, giving the investigator full control and potentially furthering understanding of the analyses;
- SEM programs provide overall tests of model fit and individual parameter estimate tests simultaneously;
- regression coefficients, means, and variances may be compared simultaneously, even across multiple between-subjects groups;
- measurement and confirmatory factor analysis models can be used to purge errors, making estimated relationships among latent variables less contaminated by measurement error; and
- an ability to fit non-standard models, including flexible handling of longitudinal data, databases with auto correlated error structures (time series analysis), and databases with non-normally distributed variables and incomplete data.

This last feature of SEM is its most attractive quality. SEM provides a unifying framework under which numerous linear models may be fit using flexible, powerful software.

8.2.2 THEORETICAL BASIS FOR MODEL SPECIFICATION AND CAUSALITY

SEM models can never be accepted; they can only fail to be rejected. This leads researchers to accept *provisionally* the given model. SEM researchers recognize that in most instances there are equivalent models that fit equally as well as their own provisionally accepted model. Any of these equivalent models may be 'correct' because they fit the data as well as the preferred model. Researchers do their best to eliminate alternative models, and by extension, alternative explanations, but this is not always possible. The use of SEM thus entails some uncertainty, particularly with cross-sectional data that are not collected under controlled conditions.⁹⁴

For this reason, SEM software programs require researchers to be very explicit in specifying models. While models that fit the data well can only be provisionally accepted, models that do not fit the data well can be absolutely rejected.⁹⁵ In addition to evaluating the absolute goodness of fit of single models, it is possible to evaluate competing models by using likelihood ratio chi-square tests to compare them.⁹⁶

⁹⁴ This is also true of other commonly used models such as ANOVA and multiple regression techniques.

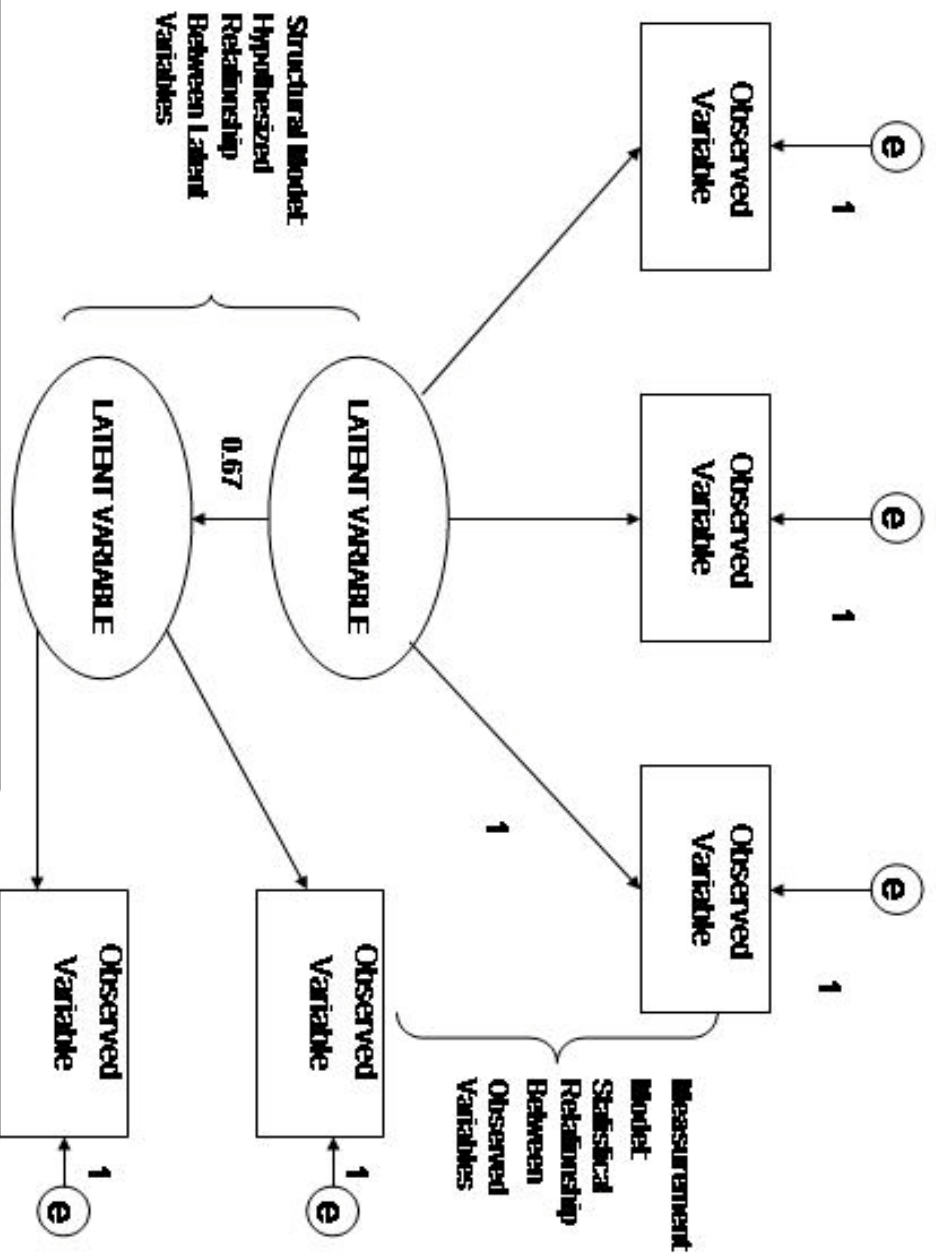
⁹⁵ For instance, if you fit a single factor CFA model to a set of ten survey items, and the model is rejected, you can be confident that a single factor is not sufficient to explain the items' shared variance, a useful finding, particularly if you believe that one common factor is not enough to explain the items' shared variance. Suppose you ran a single factor model and then a dual factor model on the same set of ten items; the former model is rejected but the latter model is not rejected. Now you know that more than one factor is needed to account for the shared variance among the measured items.

⁹⁶ Returning to the previous example, you could compare the single and dual factor models to each other using a statistical test. If that test statistic is significant, you can conclude that the more complex two factor model fits the data better than the one factor model. On the other hand, had you found no significant difference between the two models, you could conclude that the one factor model fit the data just as well as the two factor model.

8.2.3 CONFIRMATORY FACTOR ANALYSIS AND STRUCTURAL EQUATION MODELLING

The objective of SEM is to explain structures or patterns amongst a set of latent variables and constructs, typically measured by manifest variables by analysing the correlation or variance/covariance input matrices of all variables (Hair *et al*, 2007). SEM is also known as latent variable analysis, covariance structure analysis and LISREL analysis (LInear Structural RELationships), named after one of the first computer analysis programmes developed by Jöreskog and Sörbom (1988).

There are two parts to a covariance structure model: the measurement part describes how the latent variables or constructs are operationalised (via the manifest variables) whilst the structural part specifies relationships between the latent variables or constructs themselves. For ease of understanding, these two parts are shown again in Figure 8.4.



Estimated covariance between observed variables gives regression coefficients between latent variables. In this example, regression coefficient = 0.67.

F

The analysis is confirmatory in nature i.e. it seeks to determine the extent to which the *a priori* structure is consistent with empirical data (Diamantopoulos, 1997). CFA differs from EFA in that (in CFA) a model is specified *a priori* and relationships between manifest and latent variables are tested to determine their existence and importance (Loehlin, 2003). EFA is a useful preliminary technique for scale construction, but CFA is required to adequately evaluate and refine scales to meet unidimensionality.

A measurement model specifies manifest or indicator variables for exogenous (i.e. independent) and endogenous (i.e. dependent) latent variables or constructs. It is analysed by CFA to assess the reliability of each latent variable or construct to estimate causal relationships.

A structural model is a set of one or more dependence relationships linking the latent constructs and is useful in representing the interrelationships of variables between dependence relationships. Structural dependence relationships are estimated by regression or path analysis (Garver and Mentzer, 1999). This type of solution provides two advantages: a test of the theoretical structure of the measurement model or the relationship of constructs with measures; and tests without bias that measurement error introduces (Steenkamp and van Trijp, 1991).

Specialist computer programmes to solve measurement and structural models include Amos® developed by Arbuckle and Wothke (1999). This is a graphical programme that interfaces freely with SPSS® and is used in this thesis.

SEM is often presented in the form of a path diagram that is a: “Graphical portrayal of the complete set of relationships among the model’s constructs” (Hair *et al*, 2007 (p.621)). Path diagrams are a useful descriptive device but can also be used to: “Solve for a numerical value of each curved and straight arrow in a diagram to indicate the relative strength of that correlation or causal influence” (Loehlin, 2003 (p.8)). The presentation of models for SEM is based on conventional notation and standard construction rules.

There are seven steps in the SEM process (Hair *et al*, 1995):

1. conceptualise and develop the theoretical model;
2. construct a path diagram;
3. specify the SEM in terms of the measurement and structural models;
4. assess identification of the SEM if it is unable to generate unique estimates and correct any offending estimates;
5. evaluate model goodness-of-fit;
6. interpret and modify the model to improve goodness-of-fit, where theoretically justifiable; and
7. cross-validate the model with other (new and different) data sets.

Steps 1-3 are discussed in this section (8.2.3). Step 4 is dealt with in section 8.7 and steps 5 and 6 are dealt with in section 8.9. Step 7 is not a feature of this thesis, but will be addressed in discussions of future research in chapter 9.

8.2.3.1. Step 1: Conceptualise and develop the theoretical model. The theoretical model, without InVs, is shown at Figure 8.5.

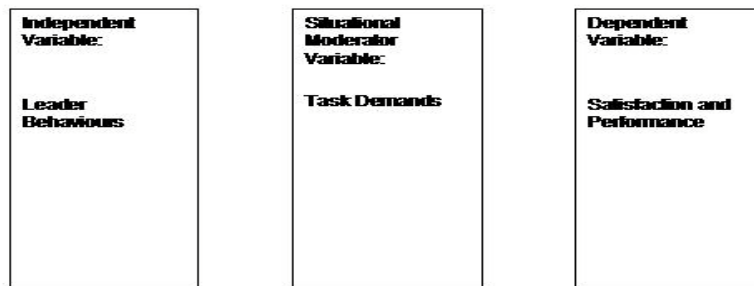


Figure 8.5: Theoretical Model

8.2.3.2. Step 2: Construct a path diagram. The path diagram is shown at Figure 8.6.

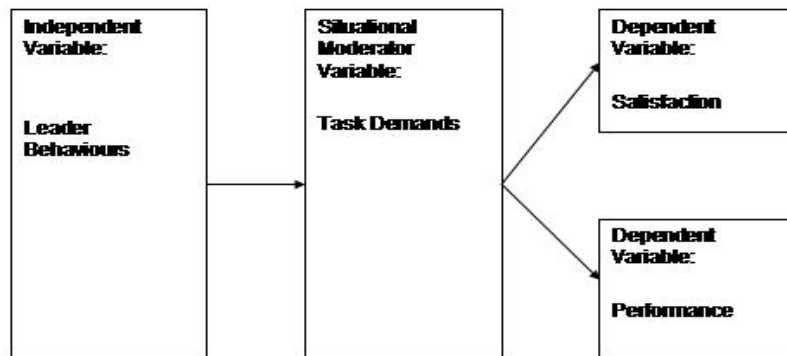


Figure 8.6: Path Diagram

8.2.3.2. Step 3: Specify the SEM in terms of the measurement and structural models. The path-goal model, which is the proposed main study model for this thesis, is shown in Figure 8.7 and follows SEM rules and notation.

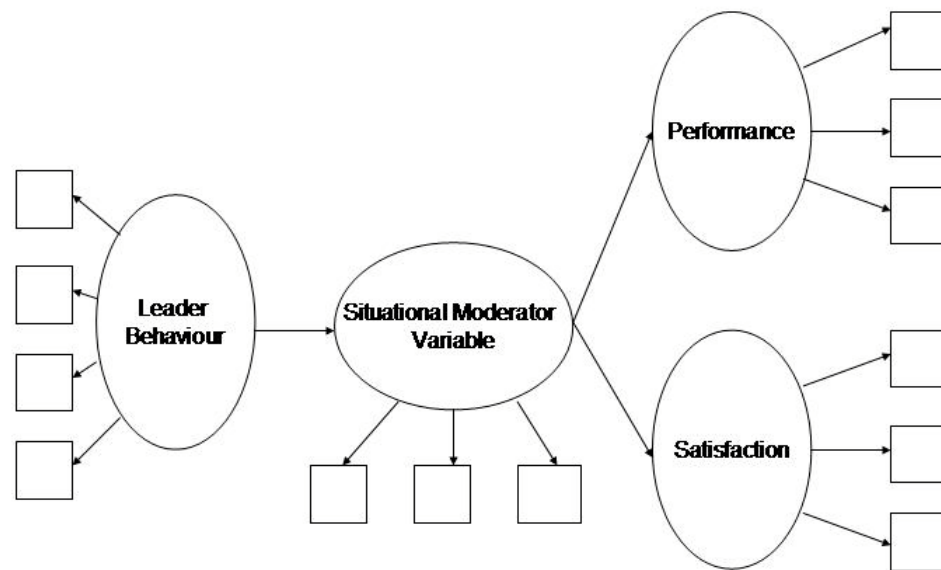


Figure 8.7: Proposed Model for Main Study

8.2.4 VARIABLES FOR STUDY

Table 8.0 shows the variables that will be studied.

VARIABLE	DESCRIPTION
Leader Behaviour	Supportive leader behaviour Path-goal leader behaviour Interaction facilitation leader behaviour Work facilitation leader behaviour
Situational Moderator Variable	The management of change Career guidance personal development of subordinates Welfare/discipline/morale issues
Dependent Variable	Satisfaction Performance

Table 8.0: Variables for Main Study

All variables (observed and latent) are described in detail in sections 8.4 to 8.6.

8.2.5 PROPOSITIONS FOR THE STUDY

In the '1996 Theory', House published 23 propositions. Due to the constraints — detailed in the research methodology — the following propositions are examined:

- Proposition 1 (path-goal clarifying behaviour): when the task demands of subordinates are satisfying but ambiguous, path-goal clarifying behaviour, (by superiors) will be a source of clarification and subordinate satisfaction and, therefore, will be motivational.
- Proposition 2 (path-goal clarifying behaviour): the higher the degree of subordinates' self-perceived ability — relative to task demands — the less subordinates will view path-goal clarifying behaviour by superiors as acceptable.
- Proposition 11 (work facilitation behaviour): When the work of the unit is characterised by technological uncertainty or the external demands imposed upon the unit are unpredictable, personal co-ordination of the work by the leader or reciprocal co-ordination by members of the work unit will facilitate work unit goal accomplishment.
- Proposition 14 (supportive behaviour): When subordinates' tasks or work environment are dangerous, monotonous, stressful or frustrating, supportive leader behaviour will lead to increased subordinate effort and satisfaction by enhancing

leader subordinate relationship and self-confidence, lowering stress and anxiety and compensating for unpleasant aspects of the work.

- Proposition 16a (interactive facilitation behaviour): Leader behaviour directed toward interaction facilitation will increase work unit effectiveness when the work of the unit members is interdependent and the norms of the work group encourage unit members' performance.

8.2.6 MODELLING THEORY

After satisfactorily estimating the measurement model, an analyst would assess how well the specified model accounted for the data with one or more goodness-of-fit indices that simultaneously assess the measurement and structural model (Anderson and Gerbing, 1988). However, SEM has no single statistical test that best describes the strength of a model's prediction and there is no general agreement over a set of appropriate goodness of fit measures (Hair *et al*, 1995).

Indeed, the past two decades have witnessed a plethora of newly developed fit indexes, as well as unique approaches to the model fitting process (for reviews, see Gerbing & Anderson, 1993; Hu & Bentler, 1995; Marsh, Balla & McDonald, 1988; and Tanaka, 1993).

Hair *et al* (2007) divided goodness of fit measures into the following three distinct classes:⁹⁷

⁹⁷ Because the chi-square test of absolute model fit is sensitive to sample size and nonnormality in the underlying distribution of the input variables, investigators often turn to various descriptive fit statistics to assess the overall fit a model to the data. In this framework, a model may be rejected on an absolute basis, yet a researcher may still claim that a given

- absolute measures of fit determine the degree to which the overall model (structural and measurement models) predicts the observed covariance or correlation matrix;
- incremental goodness-of-fit measures compare the proposed model to some baseline or null model; and
- parsimonious goodness of fit tests assess parsimony by assessing the goodness-of-fit of the model to the number of estimated coefficients or conversely to the degrees of freedom.

8.2.6.1. Absolute. Absolute fit measures include the likelihood-ratio χ^2 statistic (known as CMIN), goodness-of-fit index (GFI), and the adjusted goodness-of-fit index (AGFI).

The likelihood-ratio χ^2 statistic is the only statistically-based measure of fit available to the researcher for evaluating SEM (Hair *et al*, 2007). A large χ^2 value relative to degrees of freedom, shows that the observed sample matrix differs significantly from the estimated matrix, whilst a low χ^2 value indicates the two matrices are not significantly different.⁹⁸

The analysts thus looks for a non-significant χ^2 statistic to support the model at the .05 significance level or higher, i.e. a 'reverse-test' logic, but the χ^2 statistic should be viewed

model outperforms some other baseline model by a substantial amount. Put another way, the argument researchers make in this context is that their chosen model is substantially less false than a baseline model, typically the independence model. A model that is parsimonious, and yet performs well in comparison to other models may be of substantive interest.

⁹⁸ For detailed analysis, see Byrne (2001), p79-88.

with caution and used as an indicator rather than a formal test of a hypothesis (Diamantopoulos 1997; and Fornell 1982).

The statistical usefulness of the χ^2 statistic has been the subject of debate due to its sensitivity to sample size and the number of indicators, and their effect on its statistical power (Bentler, 1980; Diamantopoulos, 1997; Fornell and Larcker, 1981; and Hair *et al*, 2007). Accordingly, a number of other measures have been developed to assist in assessing a model's goodness-of-fit. Hair *et al* (2007) suggested that analysts should include one measure from each class (absolute, incremental, parsimonious) in their evaluation of a structural model.

GFI is an indicator of the relative amount of variances and covariances jointly accounted for by the SEM (Diamantopoulos, 1997). It is a non-statistical measure ranging from 0.0 (poor fit) to 1.0 (perfect fit) but is not adjusted for degrees of freedom (Hair *et al*, 1995).

The Absolute GFI (AGFI) differs from the GFI only in the fact that it adjusts for the number of degrees of freedom in the specified model. As such, it also addresses the issue of parsimony by incorporating a penalty for the inclusion of additional parameters. The GFI and AGFI can be classified as absolute indexes of fit because they basically compare the hypothesized model with no model at all (Hu & Bentler, 1995). Although both indexes range from zero to 1.00 with values close to 1.00 being indicative of good fit, Joreskog and Sorbom (1993) noted that, theoretically, it is possible for them to be negative.

8.2.6.2. Incremental. Incremental fit measures include the Tucker-Lewis index (TLI) and the comparative fit index (CFI). Values for each index range from 0.0 to 1.0 and a value of

0.90 or greater is recommended for each measure. The TLI compares a proposed model's fit to a baseline or null model and combines a measure of parsimony by including degrees of freedom in the calculation. The CFI was developed by Bentler (1980) as an index to overcome the limitation of sample size effects (Garver and Mentzer, 1999). As with the GFI and AGFI, incremental indexes of fit are based on a comparison of the hypothesized model against some standard. However, whereas this standard represents no model at all for the GFI and AGFI for the incremental indices, it represents a baseline model (typically the independence or null model noted earlier).⁹⁹

8.2.6.3. Parsimonious. The next set of fit statistics focus on the root mean square error of approximation (RMSEA). Although the RMSEA index, and the conceptual framework within which it is embedded, was first proposed by Steiger and Lind in 1980, it has only recently been recognized as one of the most informative criteria in covariance structure modelling. The RMSEA takes into account the error approximation in the population and asks the question: "How well would the model, with unknown but optimally chosen parameter values, fit the population covariance matrix if it were available?" (Browne & Cudeck, 1993, pp. 137-138). This discrepancy, as measured by the RMSEA, is expressed per degree of freedom, thus making the index sensitive to the number of estimated parameters in the model (i.e. the complexity of the model). Values less than 0.5 indicate good fit, and values as high as .08 represent reasonable errors of approximation in the population (Browne & Cudeck, 1993). MacCallum *et al* (1996) recently elaborated on these cutpoints and noted that RMSEA values ranging from 0.08 to 0.10 indicate mediocre fit, and those greater than 0.10 indicate poor fit. Although Hu and Bentler (1999) suggested a value of

⁹⁹ For alternate approaches to formulating baseline models, see Cudeck and Browne (1983) and Sobel and Bohrnstedt (1985).

0.06 to be indicative of good fit between the hypothesized model and the observed data, they cautioned that when sample size is small, the RMSEA (and TLI) tend to over-reject true population models. Although these criteria are based solely on subjective judgment, and, therefore, cannot be regarded as infallible or correct, Browne and Cudeck (1993) and McCallum *et al* (1996) argued they would appear to be more realistic than a requirement of exact fit, where RMSEA = 0.0.

Addressing Steiger's (1990) call for use of confidence intervals to assess the precision of RMSEA estimates, AMOS reports a 90% interval around the RMSEA value. In contrast to point estimates of model fit (which do not reflect the imprecision of the estimate), confidence intervals can yield this information, thereby providing the researcher with more assistance in the evaluation of model fit. Thus, McCallum *et al* (1996) strongly urge the use of confidence intervals in practice. Presented with a small RMSEA, but a wide confidence interval, a researcher would conclude that the estimated discrepancy value is quite imprecise thereby negating any possibility to determine accurately the degree of fit in the population. In contrast, a very narrow confidence interval would argue for good precision of the RMSEA value in reflecting model fit in the population (McCallum *et al* 1996).

Before leaving this discussion of the RMSEA, it is important to note that confidence intervals can be influenced seriously by sample size, as well as model complexity (McCallum *et al* 1996). For example, if sample size is small and the number of estimated parameters is large, the confidence interval will be wide. Given a complex model (i.e. a large number of estimated parameters), a very large sample size would be required in order to obtain a reasonably narrow confidence interval. On the other hand, if the number of parameters is

small, then the probability of obtaining a narrow confidence interval is high, even for samples of rather moderate size (McCallum *et al* 1996).

In summary, particular indexes have been shown to operate somewhat differently given the sample size, estimation procedure, model complexity, and/or violation of the underlying assumptions of multivariate normality and variable independence. Thus Hu and Bentler (1995) cautioned that in choosing which goodness-of-fit indexes to use in assessment of model fit, careful consideration of these factors is essential.

Of note, it is important to recognise that global fit indexes alone cannot possibly envelop all that needs to be known about a model in order to judge the adequacy of its fit to the sample data. As Sobel and Bohrnstedt (1985, p. 158) so cogently stated well over a decade ago: “Scientific progress could be impeded if fit coefficients (even appropriate ones) are used as the primary criterion for judging the adequacy of a model”. They further posited that, despite the problematic nature of the χ^2 statistic, exclusive reliance on goodness-of-fit indexes is unacceptable. Indeed, fit indexes provide no guarantee whatsoever that a model is useful. In fact, it is entirely possible for a model to fit well and yet still be incorrectly specified (Wheaton, 1987).

Fit indexes yield information bearing only on the model’s *lack of fit*. More importantly, they can in no way reflect the extent to which the model is plausible; *this judgement rests squarely on the shoulders of the researcher*. Thus, assessment of the model adequacy must be based on multiple criteria that take into account theoretical, statistical, and practical considerations.

8.3 THE RESEARCH SAMPLE

The '1996 Theory' is tested with Royal Air Force engineers. In detail, three cohorts of personnel are used.¹⁰⁰ Officers of the rank of Flight Lieutenant will act as subordinates of the leader and they will be asked for information on the Iv (leader behaviour) and Dv (satisfaction)(Dv(S)). The leader will be officers of Squadron Leader rank. This cohort of officers will be asked to provide information on the SMv. In simple terms, the Squadron Leader is responsible for the work unit and the Flight Lieutenants are constituent members of that work unit. In addition, to obtain independent measures of the performance of the work unit, the leaders' superior (an officer of Wing Commander rank) will be invited to rate overall performance (Dv(P)). Figure 8.8, replicated from Figure 6.1, shows this information in diagrammatic form and Table 8.1 offers a comparison of these Air Force ranks (Wing Commander, Squadron Leader and Flight Lieutenant) with their civilian equivalent, in terms of remuneration, responsibility, and span of control.¹⁰¹

¹⁰⁰ This approach helps eliminate method bias, particularly common method variance (CMV). CMV can result when two or more constructs are measured by a single source.

¹⁰¹ Comparison provided by Coutts Consulting Group/Ministry of Defence (see: www.ctp.org.uk).

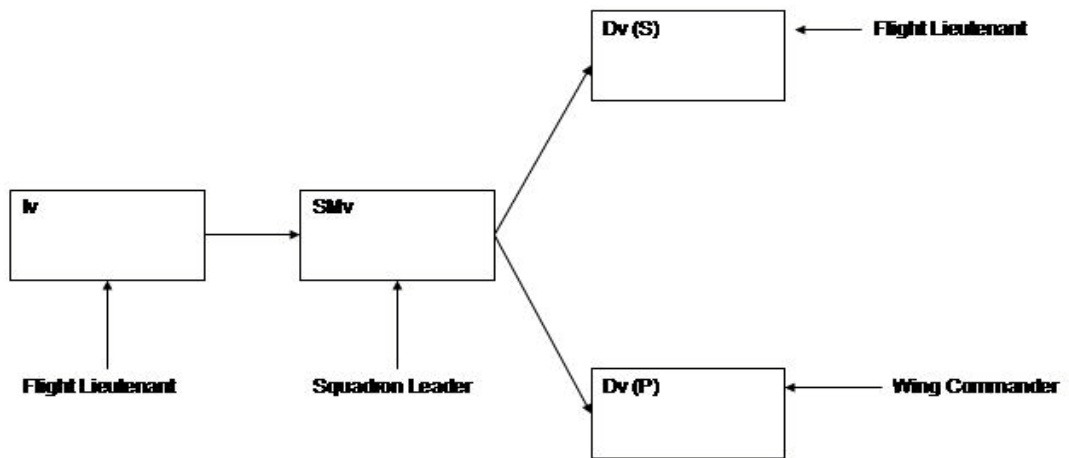


Figure 8.8: The Research Sample

RANK	CIVILIAN EQUIVALENT
Wing Commander	Middle up to senior manager - general manager/operations director/managing director - experience could include administration, operations, policy and resource management on a large scale.
Squadron Leader	Branch or functional manager/department head - total responsibility for workforce of around 100 to 200. Experience could include project/programme management, procurement, contract management.
Flight Lieutenant	Deputy/assistant manager, operations manager. Qualified in a trade or profession and will be trained and experienced in general management and team leadership techniques.

Table 8.1: Comparison of Royal Air Force Rank and Civilian Equivalent

8.4 DESIGN AND DELIVERY OF LEADER BEHAVIOUR QUESTIONNAIRE TWO

8.4.1 DESIGN OF LEADER BEHAVIOUR QUESTIONNAIRE TWO

In chapter 7, it was established that the relevant leader behaviours for this ‘context-specific’ study are supportive behaviour, path-goal behaviour, interaction facilitation behaviour, and work facilitation behaviour. These leader behaviours represent the Ivs and are latent variables. To establish relationships with these Ivs and the SMvs and Dvs, observed variables must be established. This is shown at Figure 8.9.

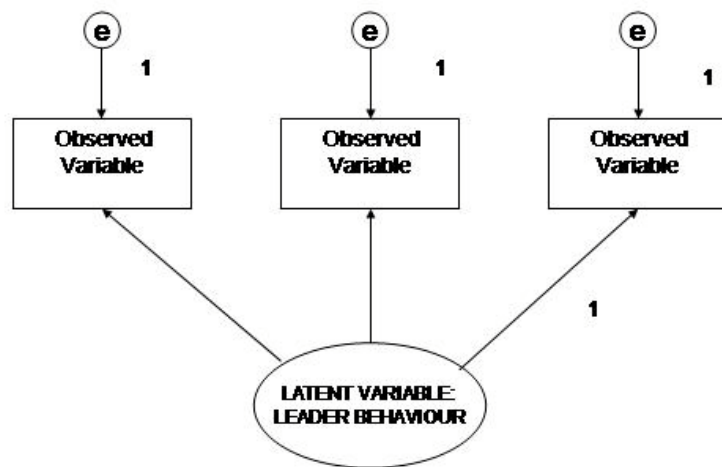


Figure 8.9: Observed and Latent Variables

The observed Leader Behaviours (variables) were designed with reference to the ‘1996 Theory’. A basic description of each behaviour is thus:

- Supportive Behaviour: provides psychological support for subordinates, increases quality of relationships between superiors and subordinates, encourages subordinates to apply their intellect to the job in hand, and enhances leader subordinate relationship and self-confidence and compensating for unpleasant aspects of the work.

- Path-Goal Behaviour: clarifies subordinates' performance goals, clarifies the means by which subordinates can effectively carry out tasks, clarifies the standards by which subordinates' performance will be judged, and uses rewards and punishment, contingent on performance
- Interaction Facilitation Behaviour: resolves disputes, facilitates communication and teamwork between work unit members, gives the minority a chance to be heard, and encourages close and satisfying relationships among members.
- Work Facilitation Behaviour: co-ordinates the work of subordinates, provides mentoring, developmental experiences, guidance, coaching, counselling and feedback to assist subordinates in developing the knowledge and skills required to meet expectancies and performance standards, reduces obstacles to effective performance (by subordinates), and empowers subordinates.

These descriptions were developed into scales and became directly observed variables, measured via a Likert scale.¹⁰² Finally, the descriptions of each leader behaviour were placed at random throughout the questionnaire (an example of this questionnaire is shown at Annex I).¹⁰³

8.4.2 DELIVERY OF LEADER BEHAVIOUR QUESTIONNAIRE TWO

¹⁰² Observed variables in the measurement model are termed indicators as they are used to measure or indicate the latent constructs (Hair *et al*, 1995). Essentially, they are reflective indicators as it is assumed that one or sometimes more underlying unobservable constructs 'cause' the observed variables. In essence, the analyst has complete control over where the manifest variables are assigned to a construct (Hair *et al*, 1995); however, assignation must be justifiable according to the theory used (Fornell, 1983).

¹⁰³ Each behaviour is described by four statements. Therefore, Leader Behaviour Questionnaire Two has 16 statements (placed at random) describing leader behaviour.

Headquarters Personnel and Training Command, at Royal Air Force Innsworth in Gloucester, administered Leader Behaviour Questionnaire Two to 100 officers of Flight Lieutenant rank, who were anonymous to the researcher; this ensured further confidentiality.¹⁰⁴

8.5 DESIGN AND DELIVERY OF TASK DEMAND QUESTIONNAIRE THREE

8.5.1 DESIGN OF TASK DEMAND QUESTIONNAIRE THREE

In chapter 7, Task Demand Questionnaire One established that the four principal tasks facing engineers in the Royal Air Force were the management of change, introduction of training programmes (associated with the management of change), welfare/discipline/morale/issues, and career guidance/personal development of subordinates.

In addition, Task Demand Questionnaire Two established that:

- the most complex tasks were the management of change;
- the most challenging tasks were the career guidance/personal development of subordinates; and
- the most repetitive tasks were welfare/discipline/morale/issues.

These task demands (SMVs) are latent variables: to establish relationships with these SMVs and the Iv and Dvs, observed variables must be established. This is shown at Figure 8.10.

¹⁰⁴ Consistent with the research methodology, these officers had been in post for over three months.

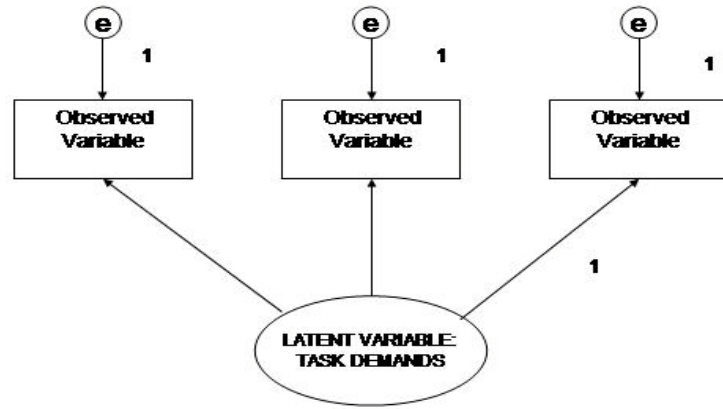


Figure 8.10: Observed and Latent Variables

From the research methodology, it is important to determine how the officers (of Squadron Leader rank) engage with these complex, challenging and repetitive tasks. Task Demand Questionnaire Three is shown at Annex I.

8.5.2 DELIVERY OF TASK DEMAND QUESTIONNAIRE THREE

Headquarters Personnel and Training Command again administered Task Demand Questionnaire Three to 20 officers of Squadron Leader rank who were anonymous to the researcher, thereby ensuring confidentiality.

8.6 DESIGN AND ADMINISTRATION OF THE PERFORMANCE INDICATOR QUESTIONNAIRE

The design of the Performance Indicator Questionnaire was relatively straightforward. On the advice of Professor House — and from definitions of performance from organizational behaviour textbooks (i.e. Luthans (2002)) — it was decided to rate performance (latent variable) in terms of:

- team performance;
- productivity;
- contribution to organisational goals; and
- organisational citizenship behaviour.

These variables were directly observable variables, measured via a standard Likert Scale (1 – 5 (1 = poor; 5 = excellent)). This is shown diagrammatically at Figure 8.11.

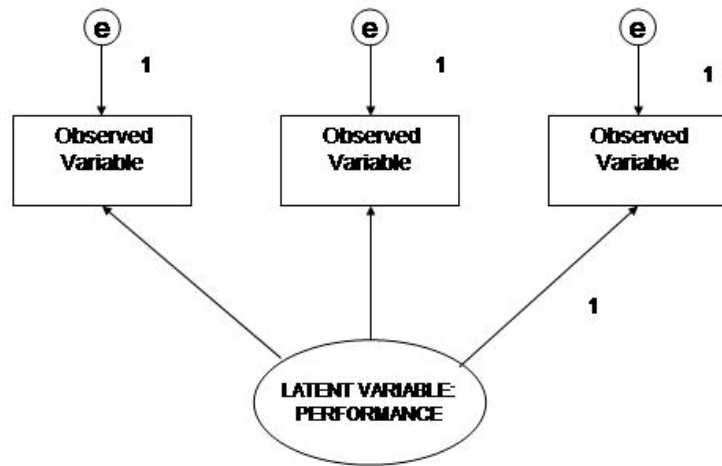


Figure 8.11: Observed and Latent Variables

The information was not obtained via a questionnaire but rather via an interview — in confidence — with an officer of Wing Commander rank who had direct responsibility for the officers (Flight Lieutenants and Squadron Leaders). Although the exact members of the research sample were unknown to the researcher, this was a most difficult interview to arrange and conduct: the officer (Wing Commander) had to divulge to another serving officer (the researcher), information about his (the serving officer’s) colleagues. An example of the Performance Questionnaire is at Annex J.

8.7 THE MODELLING PROCESS

8.7.1 A TWO-STEP APPROACH

Anderson and Gerbing (1988) propose a two-step approach to utilising SEM. Whilst the two-stage approach is not without debate, most SEM researchers advocate the procedure (Garver and Mentzer, 1999). Anderson and Gerbing (1988) consider the two-step approach minimises the potential for ‘interpretational confounding’ by avoiding interactions between the measurement and structural models when estimated simultaneously. Essentially, the analyst must consider the potential for within-construct versus between-construct effects in estimation, which can be substantial (Hair *et al*, 1995). The two-step approach provides the analyst with the opportunity to localise misfits to the structural or measurement parts of the model (Loehlin, 1998). In the first step, the researcher can validate the measurement model through CFA and tests for construct validity by testing construct unidimensionality, reliability, convergent validity, discriminant validity and predictive validity. Once the measurement model is validated, the analyst can conduct the second step of the procedure by estimating structural relationships between latent variables or constructs, and thus test the structural model. The Anderson and Gerbing two-step approach (1988) is used in this study.¹⁰⁵

8.7.2 MODIFYING THE MODEL TO OBTAIN SUPERIOR GOODNESS OF FIT

¹⁰⁵ The research results at Section 8.9 are derived from the second step. Step One (validation of the measurement model) is not included in this thesis.

It is rare that a model fits well at first. Sometimes model modification is required to obtain a better-fitting model. AMOS® allows for the use of *modification indices* to generate the expected reduction in the overall model-fit-chi-square for each possible path that can be added to the model.^{106,107}

Diamantopoulos (1994) stressed that at this point of respecification an analysis is no longer confirmatory but becomes exploratory in nature. As Loehlin wrote: “Changing a structural model is changing one’s theory, and should always be done with that in mind” (1998 p.199). However, Diamantopoulos, quoting Long, noted that: “Even if the model initially suggested by substantive theory is rejected, there are generally some parameters that are definitely required on the basis of past research and some parameters that make no sense to include” (1994 p.124).

¹⁰⁶ Further reference should be made to ‘Structural Equation Modeling with AMOS: Basic Concepts, Applications, and Programming’ by Barbara M Byrne (2001), Lawrence Erlbaum Associates, Inc.

¹⁰⁷ A modification index (MI) indicates an improvement in fit through a decrease in the χ^2 statistic caused by freeing a fixed i.e. nonestimated path present in the model (Diamantopoulos 1994; Loehlin 1998; and Hair *et al*, 1995). An MI value of 3.84 or greater suggests a statistically significant χ^2 statistic reduction would result if the path was estimated. In the case of a typical CFA model, the fixed paths are the zero paths between each construct and the indicators that are not supposed to load on it. Thus: “Blindly freeing paths will reduce the χ^2 statistic but can also produce nonsensical models” (Loehlin 1998 p.198). A researcher should never make model changes based solely on assessment of MI as it is: “A theoretical approach totally contrary to the spirit of the technique and should be avoided in all instances” (Hair *et al*, 1995, p.644).

8.8 RESEARCH RESULTS

Before the research results are presented and described, Figure 8.12 will help to show where this information is derived from. In Figure 8.12, there is an input and output linked via SEM.

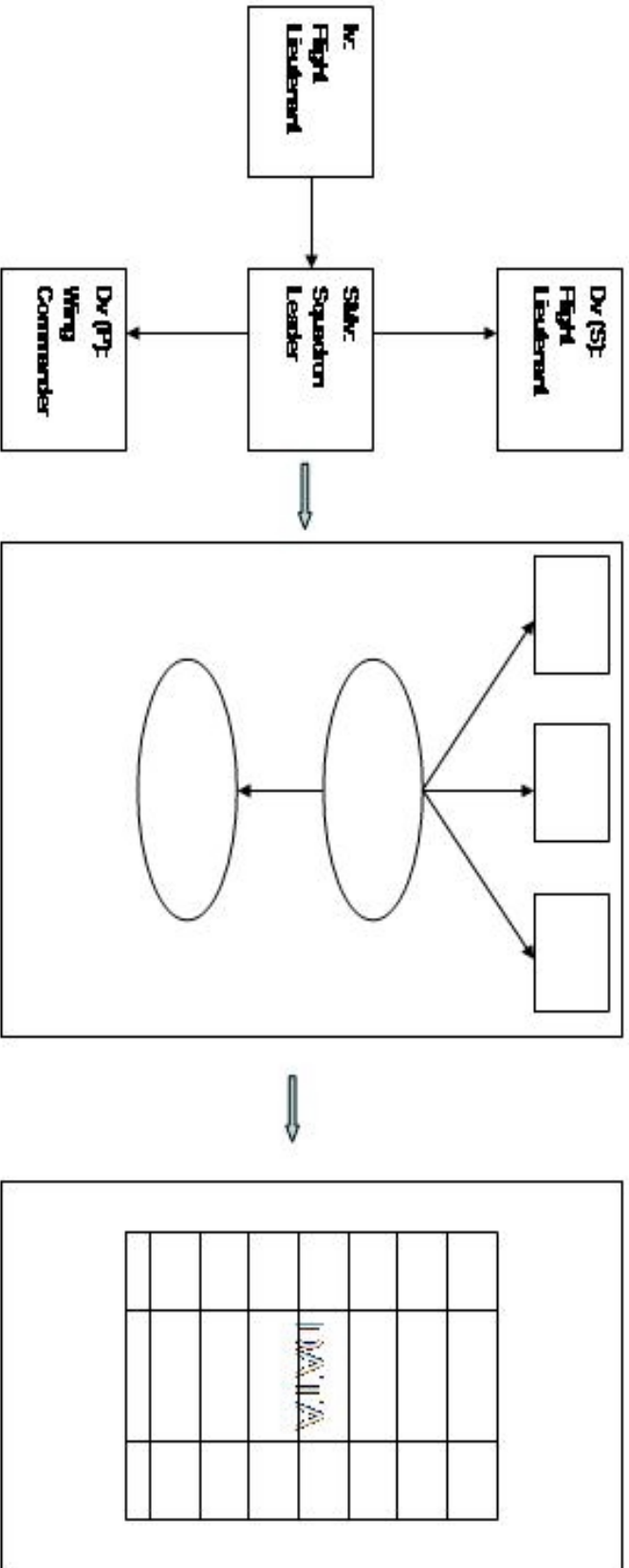
For the input, the following information is used:

- Flight Lieutenants provide information on the Iv (leader behaviour) and Dv (satisfaction).
- Squadron Leaders describe their degree of engagement with the SMvs (task demands).
- A Wing Commander rates Dv (overall performance of the work unit).

In SEM, the measurement model gives statistical relationships between the observed variables (confirmatory factor analysis) and the structural model offers hypothesised relationships between latent variables in the form of regression coefficients (RCs) (linear regression).

For the output, data is presented detailing the RCs as a function of each SMv; for example:

SMv	Iv	Preference for Leader Behaviour	Satisfaction as function of Leader Behaviour	For SMv and Iv, performance as influenced by individual satisfaction	For SMv and Iv, how performance is rated
MofC	Supportive	RC	RC	RC	RC
	Path-Goal	RC	RC	RC	RC
	Work Facilitation	RC	RC	RC	RC
	Interaction Facilitation	RC	RC	RC	RC



8.9 PRESENTATION OF RESULTS

The research results are presented as a function of the SMv: first, the management of change; then, the career guidance/personal development of subordinates; and finally, welfare, discipline, moral issues.

8.9.1 SITUATIONAL MODERATOR VARIABLE: THE MANAGEMENT OF CHANGE

8.9.1.1. Supportive Leader Behaviour. The structural model is shown at Figure 8.13. This model shows latent variables and standardized regression weights between these variables, which show the contribution of the Iv (leader behaviour) to each Dv (performance and satisfaction). In addition, Goodness of Fit statistics are detailed at Table 8.2.

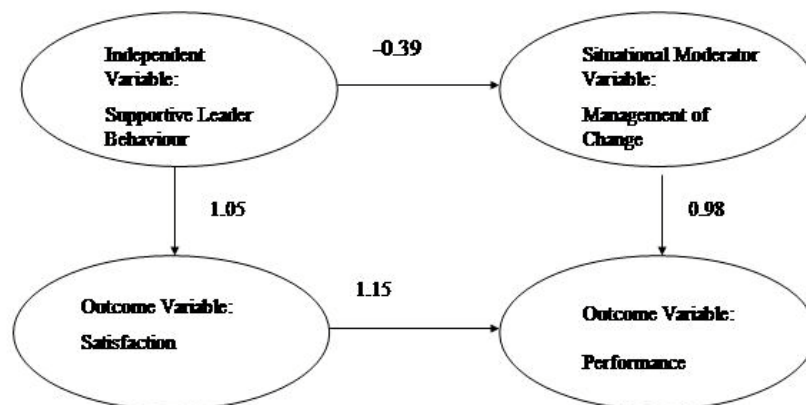


Figure 8.13: Structural Model for Supportive Leader Behaviour and the Management of Change

CMIN	P	GFI	AGFI	TLI	CFI	RMSEA
7.5502	0.1828	0.9713	0.8793	0.9711	0.9904	0.0804

Table 8.2: Goodness of Fit Statistics

Figure 8.13 shows that the path between supportive leader behaviour and satisfaction has a positive regression coefficient of 1.05. Moreover, the path (satisfaction to performance) has a positive regression coefficient of 1.15, thereby suggesting that satisfaction also has a relationship with performance. Of note, supportive leader behaviour has a negative relationship with performance. Of note, supportive leader behaviour has a negative relationship with the SMv of the management of change of - 0.39. Finally, there is a positive coefficient of 0.98 between the management of change and performance.

The output statistics, detailed in Table 8.2, illustrate that the structural model fits the sample data well and achieves a good, overall fit.

8.9.1.2. Path-Goal Leader Behaviour. The structural model is shown at Figure 8.14. This model shows latent variables and standardized regression weights between these variables, which show the contribution of the Iv (leader behaviour) to each Dv (performance and satisfaction). In addition, Goodness of Fit statistics are detailed at Table 8.3.

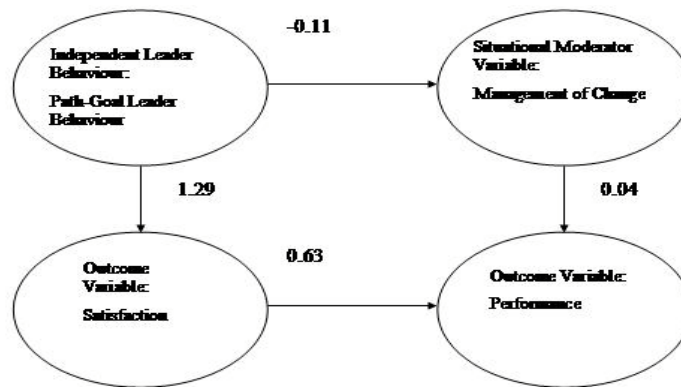


Figure 8.14: Structural Model for Path-Goal Leader Behaviour and the Management of Change

CMIN	P	GFI	AGFI	TLI	CFI	RMSEA
8.9388	0.1115	0.9660	0.8572	0.9402	0.9801	0.0994

Table 8.3: Goodness of Fit Statistics

Figure 8.14 shows that there is a positive regression coefficient of 1.29 between the Iv and satisfaction. Moreover, the path (satisfaction) to performance has a positive regression coefficient of 0.63. Of note, the path between path-goal leader behaviour and the SMv has a negative coefficient of - 0.11. There is a positive coefficient of 0.04 between the management of change and performance.

The output statistics in Table 8.3 illustrate that the structural model fits the sample data well and achieved a good, overall fit.

8.9.1.3. Interactive Facilitation Leader Behaviour. The structural model is shown at Figure 8.15. This model shows latent variables and standardized regression weights between these variables, which show the contribution of the Iv (leader behaviour) to each Dv

(performance and satisfaction). In addition, Goodness of Fit statistics are detailed at Table 8.4.

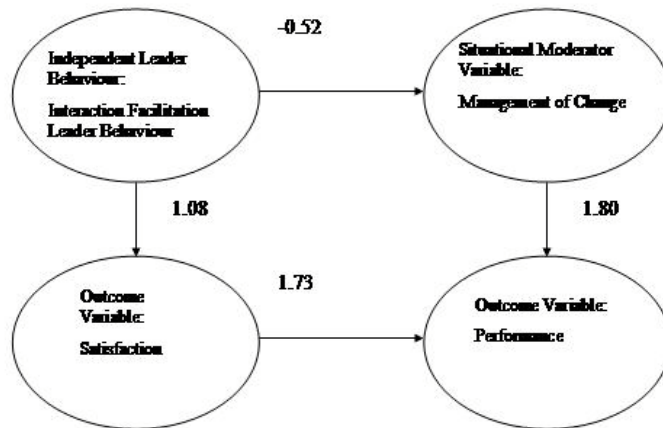


Figure 8.15: Structural Model for Interactive Facilitation Leader Behaviour and the Management of Change

CMIN	P	GFI	AGFI	TLI	CFI	RMSEA
7.4752	0.1876	0.9714	0.8798	0.9503	0.9834	0.0792

Table 8.4: Goodness of Fit Statistics

Figure 8.15 shows a positive regression coefficient of 1.08 between the Iv and satisfaction. There is also a positive coefficient between satisfaction and performance of 1.73. Again, there is a negative coefficient - 0.52 between the Iv and SMv. There is a positive coefficient of 1.80 between the management of change and performance.

The output statistics in Table 8.4 illustrate that the structural model fits the sample data well and achieved a good, overall fit.

8.9.1.4. Work Facilitation Leader Behaviour. The structural model is shown at Figure 8.16. This model shows latent variables and standardized regression weights between these variables, which show the contribution of the Iv (leader behaviour) to each Dv (performance and satisfaction). In addition, Goodness of Fit statistics are detailed at Table 8.5.

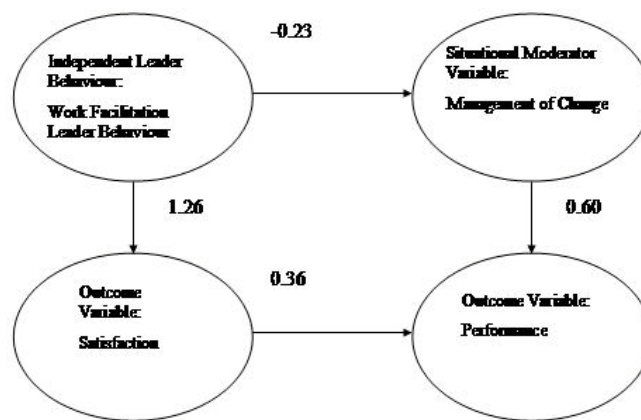


Figure 8.16: Structural Model for Work Facilitation Leader Behaviour and the Management of Change

CMIN	P	GFI	AGFI	TLI	CFI	RMSEA
9.04256	0.10738	0.96473	0.85187	0.88585	0.96195	1.0116

Table 8.5: Goodness of Fit Statistics

Figure 8.16 shows a positive regression coefficient of 1.26 between the Iv and satisfaction. The path satisfaction to performance has a coefficient of 0.36. There is also a negative coefficient of - 0.23 between the Iv and SMv. The path of SMv to performance has a positive coefficient of 0.60

The output statistics in Table 8.5 illustrate that the structural model fits the sample data well and achieved a good, overall fit.

8.9.2 SITUATIONAL MODERATOR VARIABLE: CAREER GUIDANCE/PERSONAL DEVELOPMENT OF SUBORDINATES

8.9.2.1 Supportive Leader Behaviour . The structural model is shown at Figure 8.17. This model shows latent variables and standardized regression weights between these variables, which show the contribution of the Iv (leader behaviour) to each Dv (performance and satisfaction). In addition, Goodness of Fit statistics are detailed at Table 8.6.

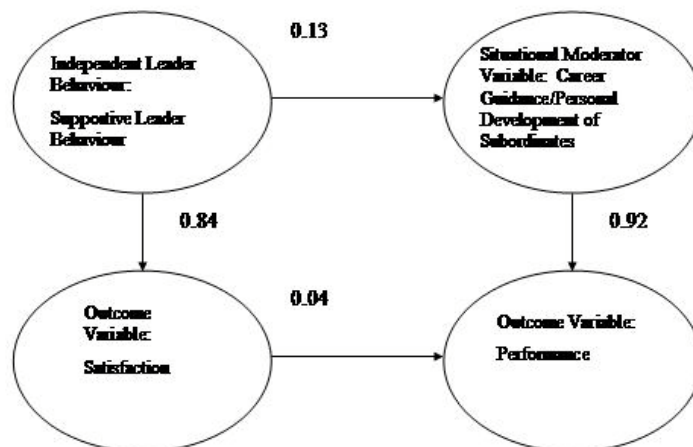


Figure 8.17: Structural Model for Supportive Leader Behaviour and Career Guidance/Personal Development of Subordinates

CMIN	P	GFI	AGFI	TLI	CFI	RMSEA
3.2521	0.6612	0.9863	0.9425	1.0194	1.000	0.0000

Table 8.6: Goodness of Fit Statistics

Figure 8.17 shows a positive regression coefficient of 0.84 between Iv and satisfaction. The path satisfaction to performance has a positive regression coefficient of 0.04. In this figure, there is a positive regression coefficient of 0.13 between the Iv and SMv. There is a positive coefficient of 0.92 between the SMv and performance.

The output statistics in Table 8.6 illustrate that the structural model fits the sample data well and achieved a good, overall fit.

8.9.2.2. Path-Goal Leader Behaviour. The Structural model is shown at Figure 8.18. This model shows latent variables and standardized regression weights between these variables, which show the contribution of the Iv (leader behaviour) to each Dv (performance and satisfaction). In addition, Goodness of Fit statistics are detailed at Table 8.7.

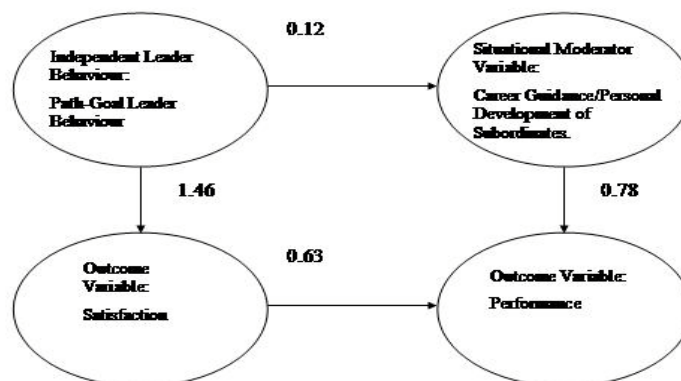


Figure 8.18: Structural Model for Path-Goal Leader Behaviour and Career Guidance/Personal Development of Subordinates

CMIN	P	GFI	AGFI	TLI	CFI	RMSEA
4.2051	0.5203	0.9828	0.9276	1.0116	1.000	0.0000

Table 8.7: Goodness of Fit Statistics

In Figure 8.18, there is a positive regression coefficient of 1.46 in the path, Iv to satisfaction.

In addition, path (satisfaction) to performance has a positive regression coefficient of 0.63.

There is a positive coefficient of 0.12 between the Iv and SMv and a positive coefficient of 0.78 between SMv and performance.

The output statistics in Table 8.7 illustrate that the structural model fits the sample data well and achieved a good, overall fit.

8.9.2.3. Interaction Facilitation Leader Behaviour. The structural model is shown at Figure 8.19. This model shows latent variables and standardized regression weights between these variables, which show the contribution of the Iv (leader behaviour) to each Dv (performance and satisfaction). In addition, Goodness of Fit statistics are detailed at Table 8.8.

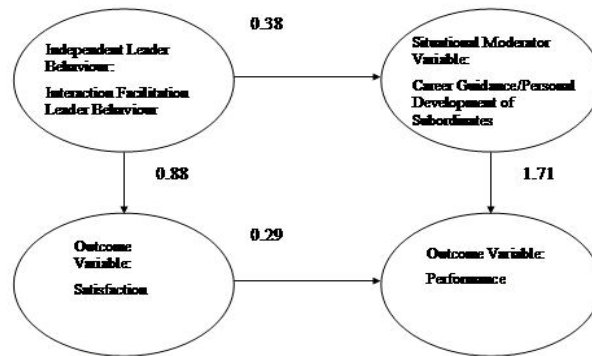


Figure 8.19: Structural Model for Interactive Facilitation Leader Behaviour and Career Guidance/Personal Development of Subordinates

CMIN	P	GFI	AGFI	TLI	CFI	RMSEA
3.2445	0.6623	0.9863	0.9426	1.0340	1.000	0.0000

Table 8.8: Goodness of Fit Statistics

Figure 8.19 shows a positive regression coefficient of 0.88 between Iv and satisfaction.

There is also a positive coefficient of 0.29 between satisfaction and performance. Of note, interaction facilitation leader behaviour has a positive effect on the SMv of 0.38. There is a positive coefficient of 1.71 between SMv and performance.

The output statistics in Table 8.8 illustrate that the structural model fits the sample data well and achieved a good, overall fit.

8.9.2.4. Work Facilitation Leader Behaviour. The structural model is shown at Figure 8.20. This model shows latent variables and standardized regression weights between these variables, which show the contribution of the Iv (leader behaviour) to each Dv (performance and satisfaction). In addition, Goodness of Fit statistics are detailed at Table 8.9.

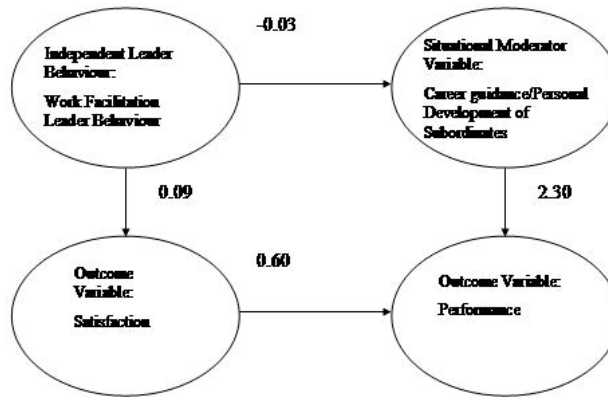


Figure 8.20: Structural Model for Work Facilitation Leader Behaviour and Career Guidance/Personal Development of Subordinates

CMIN	P	GFI	AGFI	TLI	CFI	RMSEA
6.49980	0.2668	0.97325	0.88764	0.9597	0.98657	0.06162

Table 8.9: Goodness of Fit Statistics

Figure 8.20 shows that the path between work facilitation leader behaviour and satisfaction has a positive regression coefficient of 0.09. In addition, the path (satisfaction) to performance has a positive regression coefficient of 0.60. There is again, a negative coefficient of - 0.03 in the path, Iv to SMv, but a positive coefficient of 1.80 between SMv and performance.

The output statistics in Table 8.9 illustrate that the structural model fits the sample data well and achieved a good, overall fit.

8.9.3 SITUATIONAL MODERATOR VARIABLE: WELFARE/DISCIPLINE/MORAL ISSUES

8.9.3.1. Supportive Leader Behaviour. The structural model is shown at Figure 8.21. This model shows latent variables and standardized regression weights between these variables, which show the contribution of the Iv (leader behaviour) to each Dv (performance and satisfaction). In addition, Goodness of Fit statistics are detailed at Table 8.10.

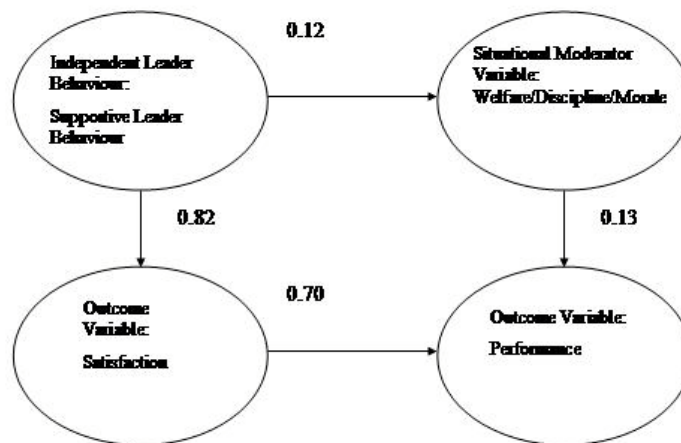


Figure 8.21: Structural Model for Supportive Leader Behaviour and Welfare, Discipline and Morale of Subordinates

CMIN	P	GFI	AGFI	TLI	CFI	RMSEA
5.4365	0.3650	0.9766	0.9016	0.9950	0.9983	0.0332

Table 8.10: Goodness of Fit Statistics

Figure 8.21 shows a positive regression coefficient of 0.82 between Iv and satisfaction. In addition, the path (satisfaction) to performance has a positive regression coefficient of 0.70. Of note, with welfare, discipline and morale as the SMv, the Iv has a positive effect of 0.12. In addition, there is a further positive coefficient of 0.13 between the SMv and performance.

The output statistics in Table 8.10 illustrate that the structural model fits the sample data well and achieved a good, overall fit.

8.9.3.2. Path-Goal Leader Behaviour. The Structural model is shown at Figure 8.22. This model shows latent variables and standardized regression weights between these variables, which show the contribution of the Iv (leader behaviour) to each Dv (performance and satisfaction). In addition, Goodness of Fit statistics are detailed at Table 8.11.

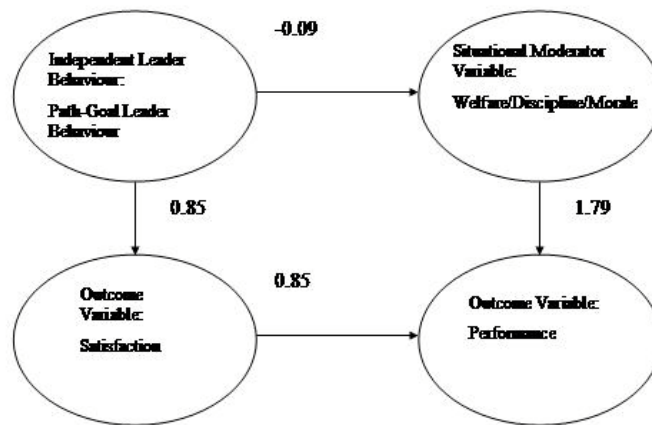


Figure 8.22: Structural Model for Path-Goal Leader Behaviour and Welfare, Discipline and Morale of Subordinates

CMIN	P	GFI	AGFI	TLI	CFI	RMSEA
6.6072	0.2515	0.9722	0.8833	0.9753	0.9918	0.0638

Table 8.11: Goodness of Fit Statistics

Figure 8.22 shows a positive regression coefficient of 0.85 between Iv and satisfaction. In addition, the path (satisfaction) to performance has a positive regression coefficient of 0.85.

There is a negative coefficient of - 0.09 between Iv and SMv and a positive coefficient of 1.97 between SMv and performance.

The output statistics in Table 8.11 illustrate that the structural model fits the sample data well and achieved a good, overall fit.

8.9.3.3. Interaction Facilitation Leader Behaviour. The structural model is shown at Figure 8.23. This model shows latent variables and standardized regression weights between these variables, which show the contribution of the Iv (leader behaviour) to each Dv (performance and satisfaction). In addition, Goodness of Fit statistics are detailed at Table 8.12.

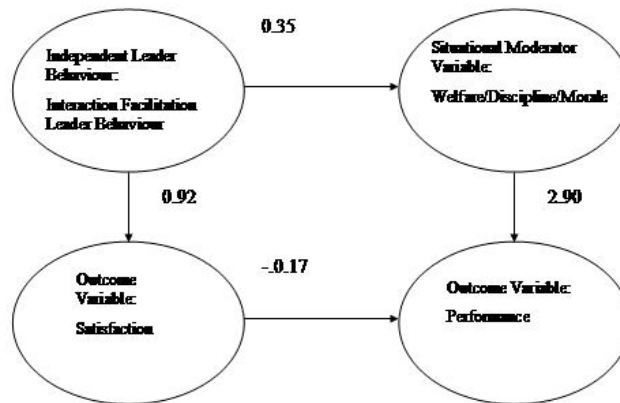


Figure 8.23: Structural Model for Interactive Facilitation Leader Behaviour and Welfare, Discipline and Morale of Subordinates

CMIN	P	GFI	AGFI	TLI	CFI	RMSEA
5.39	0.3703	0.9768	0.9024	0.9921	0.9974	0.0314

Table 8.12: Goodness of Fit Statistics

In Figure 8.23, there is a positive regression coefficient of 0.92 between Iv and satisfaction. However, the path (satisfaction) to performance has a negative regression coefficient of -0.17. There is a positive coefficient of 0.35 between Iv and SMv and a positive coefficient of 2.90 between SMv and performance.

The output statistics in Table 8.12 illustrate that the structural model fits the sample data well and achieved a good, overall fit.

8.9.3.4. Work Facilitation Leader Behaviour.

For WDM issues and the leader behaviour of work facilitation, the model did not fit the data and was, therefore, absolutely rejected.

8.10 DISCUSSION OF RESULTS

8.10.1 THE REGRESSION COEFFICIENTS

Technically, SEM estimates the unknown coefficients in a set of linear structural equations. Variables in the equation system are usually directly observed variables and unmeasured latent variables. SEM generally involves the specification of an underpinning linear regression-type model (incorporating the structural relationships or equations between unobserved or latent variables) together with a number of observed or measured indicator variables.

When the regression line is linear ($y = ax + b$), the regression coefficient is the constant (a), which represents the rate of change of one variable (y) as a function of changes in the other (x); in other words, it is the slope of the regression line. In the context of SEM, when researchers speak of structural or path coefficients, they normally mean standardised ones. Standardised structural coefficient estimates are based on standardised data, including correlation matrixes. Standardised estimates are used, for instance, when comparing direct effects on a given endogenous variable in a single-group study. That is, the standardised weights are used to compare the relative importance of the independent variables. The interpretation is similar to regression: if a standardised structural coefficient is 2.0, then the latent dependent will increase by 2.0 standard units for each unit increase in the latent independent.¹⁰⁸ In AMOS®, the standardised structural coefficients are labelled ‘standardised regression weights or coefficients,’ which is what they are. A positive regression coefficient weight suggests a strong link in implied causality; a negative regression weight suggests a weaker link in implied causality (Anderson and Gerbing, 1988).

8.10.2 WHAT DO THE VARIABLES REPRESENT?

8.10.2.1. The SMv. Path-goal theory is a *situational* leadership theory; it attempts to identify aspects of the situation that ‘moderate’ the relationship of leader behaviour to leadership effectiveness (i.e. the dependent variable). The assumption is that different behaviour patterns will be effective in different situations and that the same behaviour pattern (or trait pattern) will not be optimal in all situations. Aspects of the situation that

¹⁰⁸ For example, from Figure 8.13, since the standardised regression coefficient represents the amount of change in the Dv that is attributable to a single standard deviations unit’s worth of change in the Iv, this result suggests that for every single unit increase in supportive behaviour, satisfaction is increased by 1.05 units in the sample population.

enhance or nullify the effects of a leader's traits or behaviours are called 'situational moderator variables'.

8.10.2.2. Iv. The Iv is the leader behaviour.

8.10.2.3. Dv. There are two dependent variables in this study: the performance of the work unit and the satisfaction of the individual member of the work unit. The thesis is that the SMv will 'influence' the effect of the leader behaviour on the dependent variable.

8.10.3 DISCUSSION

The regression coefficients, shown at Figures 8.12 to 8.22, are summarised at Table 8.13 below.

SMv	Iv	Preference for Leader Behaviour	Satisfaction as function of Leader Behaviour	For SMv and Iv, performance as influenced by individual satisfaction	For SMv and Iv, how performance is rated
Management of Change	Supportive	-0.39	1.05	1.15	0.98
	Path-Goal	-0.11	1.29	0.63	0.04
	Work Facilitation	-0.23	1.08	1.73	1.80
	Interaction Facilitation	-0.52	1.26	0.36	0.60
Career Guidance/Personal Development	Supportive	0.13	0.84	0.04	0.92
	Path-Goal	0.12	1.46	0.63	0.78
	Work Facilitation	-0.03	0.88	0.29	1.71
	Interaction Facilitation	0.38	0.09	0.60	2.30
Welfare/Discipline/Morale	Supportive	0.12	0.82	0.70	0.13
	Path-Goal	-0.09	0.85	0.85	1.79
	Work Facilitation	0.35	0.92	-0.17	2.90

Table 8.13: Regression Coefficients for SMv, Iv, and Dv

To help interpret these regression coefficients, it is possible to represent the model — shown at Figures 8.12 to 8.22 — schematically as Figure 8.23 below:

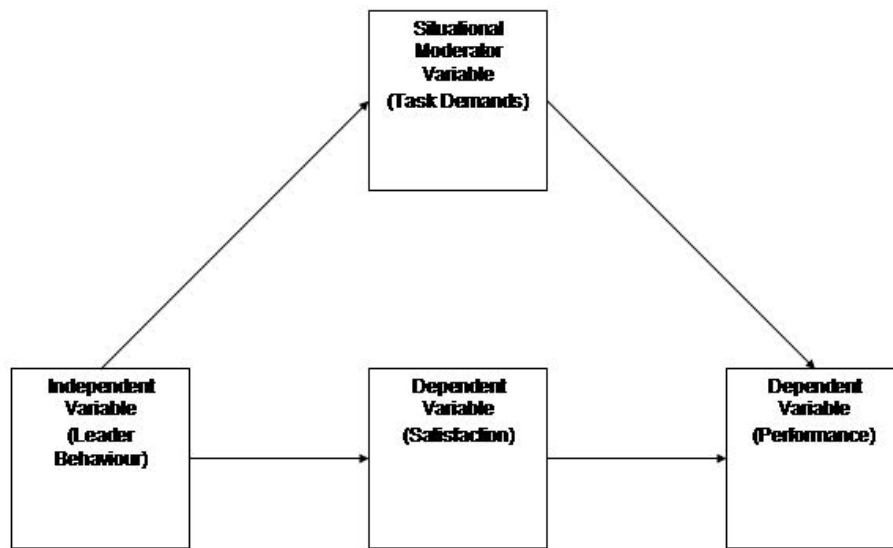


Figure 8.24: SEM of Path-Goal Theory

It is also instructive, at this stage, to review the research methodology:

- Task Demand Questionnaire One established that the four principal tasks (i.e. those tasks that cause stress, anxiety and frustration) are the management of change, career guidance/personal development of subordinates and welfare/discipline/morale issues. In addition, Task Demand Questionnaire Two established that the most complex tasks were the management of change, the most challenging tasks were the career guidance/personal development of subordinates and the most repetitive tasks were welfare/discipline/morale issues.
- The Squadron Leaders (**the leaders**) were asked to describe how engaged they were with these difficult tasks.

- The Flight Lieutenants (**the subordinates**) were asked — via Leader Behaviour Questionnaire Two — to describe how their leader’s behaviour (supportive, path-goal, work facilitation, and interaction facilitation) would reduce stress, anxiety and frustration and contribute to satisfaction.
- The Wing Commander (**the leaders’ superior**) was asked to rate the overall performance of the work unit, when engaged with these tasks (the management of change, career guidance/personal development of subordinates and welfare/discipline/morale issues).

The research results and possible explanation for them — described below — should be treated with some caution. Whilst the response rates are good, in statistical terms there may be artefacts, other variables, insufficient sample sizes, random fluctuations of data sets, a high likelihood of chance, and negative error variances, which may all contribute to the values of the regression coefficients.¹⁰⁹

8.10.3.1. Preference for Leader Behaviour. Table 8.13 (column 3) shows that the SMvs influence subordinate preference for a particular type of leadership behaviour. The results range from +0.38 with the SMv of career guidance/personal development of subordinates and Iv of Interaction Facilitation, to - 0.52 with the SMv of the management of change and Iv of Interaction Facilitation. In addition, the results vary within each SMv. For example, for the SMv of the management of change, the preferences for leader behaviour vary from - 0.11 to - 0.52. For the negative regression coefficients, it would seem that the subordinates have less preference for this type of leader behaviour. For example, with the management

¹⁰⁹ Personal correspondence with Professors House/Hanges.

of change as the SMv, perhaps the ability of the subordinates (they are commissioned officers) negates the need for leadership. With the SMvs of career guidance/personal development of subordinates and welfare/discipline/morale issues, there is a greater preference for the leadership behaviour.

8.10.3.2. Satisfaction as Function of Leader Behaviour. Table 8.13 (column 4) shows that leader behaviour has a significant impact on subordinate satisfaction. For example, since the standardised regression coefficient represents the amount of change in the Dv that is attributable to a single standard deviations unit's worth of change in the Iv, the results suggests that for every single unit increase in leader behaviour, satisfaction is increased in the subordinate cohort (e.g. +0.09 to +1.46). From Table 8.13 (column 4), the results again vary between and within SMv.

8.10.3.3. Performance as influenced by individual satisfaction. Table 8.13 (column 5) shows how work unit performance is influenced by satisfaction (via leader behaviour). The results range from - 0.17 to +1.73. The strongest association is with the SMv of the management of change and the Iv of Work Facilitation (+1.73). The weakest association is with the SMv of welfare/discipline/morale and the Iv of Work Facilitation (- 0.17).

From these results, it would appear that by employing behaviour contingent on the SMvs, the leader attempts to influence subordinates' perceptions and motivate them, which in turn leads to their increased performance. For example, for the SMv of management of change, the greatest effect on performance is via leader behaviour of 'Work Facilitation'.

8.10.3.4. Performance as influenced by SMv. The final results from Table 8.13 (column 6) show that performance is influenced by the SMv. The results range from +0.04 to +2.90. The two most significant results (+2.30 and +2.90) arise with the SMvs of career guidance/personal development of subordinates and welfare/discipline/morale issues respectively. This would suggest that performance is not only influenced by the satisfaction of individual members, but by the actual type of task demand that the unit is required to complete.

8.10.3.5. Best Leader Behaviour for Work Unit Performance and Individual Satisfaction?

From Table 8.13, the research results vary from - 0.52 to +2.90. For the SMv of the management of change, performance (as a function of satisfaction) and work unit performance is greatest for the leader behaviour of work facilitation. For the SMv of career guidance/personal development of subordinates, performance (as a function of satisfaction) is greatest for the leader behaviour of interaction facilitation.¹¹⁰ For the SMv of welfare/discipline/morale issues, the research results do not permit an accurate assessment of the leader behaviour which 'contributes' most to performance and satisfaction. That said, 'facilitatory' leader behaviour (particularly work facilitation) makes a significant contribution to work unit performance.

For the three SMvs, the facilitatory leader behaviour is prominent. In this behaviour, the leader facilitates work by: planning, scheduling and organising work; personally co-ordinating the work of subordinates; providing mentoring, developmental experiences,

¹¹⁰ Path-goal behaviour is slightly greater for performance (as a function of satisfaction).

guidance, coaching, counselling and feedback; and reducing obstacles to the effective performance of subordinates.

For satisfaction, the highest overall regression coefficient (1.46) is achieved with a leader behaviour of path-goal. Path-goal behaviours include clarifying subordinates' performance goals, clarifying the means by which subordinates can effectively carry out their tasks, clarifying the standards by which subordinates' performance will be judged, and clarifying the expectancies that others hold for subordinates to which the subordinate should and should not respond.

Overall, it is considered that there are associations and relationships between the variables.

For example, supportive leader behaviour does interact with the SMv to influence performance and satisfaction as shown in Table 8.14 below.

SMv	Iv	Preference for Leader Behaviour	Satisfaction as function of Leader Behaviour	For SMv and Iv, performance as influenced by individual satisfaction	For SMv and Iv, how performance is rated
Management of Change	Supportive	-0.39	1.05	1.15	0.98
Career Guidance/Personal Development	Supportive	0.13	0.84	0.04	0.92
Welfare/Discipline/Morale	Supportive	0.12	0.82	0.70	0.13

Table 8.14: Regression Coefficients for SMv, Supportive Leader Behaviour and Dv

However, the direction of this relationship is not known and it is difficult to predict accurately. Association does not imply causality and without further research, which is

replicated and revalidated with other cohorts, causality in the 'Iv – SMv – Dv', cannot be argued.¹¹¹

8.10.3.6. Propositions. Five propositions pertaining to structural relationships were presented in section 8.2.5; from the research results, they are accepted/rejected as follows.

Proposition 1: When the task demands of subordinates are satisfying but ambiguous, path-goal clarifying behaviour, (by superiors) will be a source of clarification and subordinate satisfaction and, therefore, will be motivational.

This proposition is accepted.

Proposition 2: The higher the degree of subordinates' self-perceived ability — relative to task demands — the less subordinates will view path-goal clarifying behaviour by superiors as acceptable.

This proposition is accepted.

Proposition 11: When the work of the unit is characterised by technological uncertainty or the external demands imposed upon the unit are unpredictable, personal co-ordination of the work by the leader or reciprocal co-ordination by members of the work unit will facilitate work unit goal accomplishment.

This proposition is accepted.

¹¹¹ Personal correspondence with Professors House/Hanges.

Proposition 14: When subordinates' tasks or work environment are dangerous, monotonous, stressful or frustrating, supportive leader behaviour will lead to increased subordinate effort and satisfaction by enhancing leader subordinate relationship and self-confidence, lowering stress and anxiety and compensating for unpleasant aspects of the work.

This proposition is accepted.

Proposition 16a: Leader behaviour directed toward interaction facilitation will increase work unit effectiveness when the work of the unit members is interdependent and the norms of the work group encourage unit members' performance.

This proposition is accepted.

8.11 SUMMARY OF CHAPTER 8

8.11.1. This chapter presents the research data, established thus far, via SEM. The chapter revisited SEM techniques, described the research sample, explained the design and distribution of Leader Behaviour Questionnaire two, explained the design and distribution of Task Demand Questionnaire Three, explained the design and distribution of the Performance Questionnaire, described the modelling process, and presented the research results.

8.11.2. SEM is an extension of the GLM that enables a researcher to test a set of regression equations simultaneously. SEM software can test traditional models, but it also permits examination of more complex relationships and models, such as confirmatory factor analysis and time series analyses.

SEM software fits the data to the specified model and produces the results, which include overall model fit statistics and parameter estimates. The input to the analysis is usually a covariance matrix of measured (observed) variables.

SEM models can never be accepted; they can only fail to be rejected. This leads researchers to accept *provisionally* a given model. SEM researchers recognize that in most instances there are equivalent models that fit equally as well as their own provisionally accepted model. Any of these equivalent models may be 'correct' because they fit the data as well as the preferred model. For this reason, SEM software programs require researchers to be very explicit in specifying models. While models that fit the data well can only be provisionally accepted, models that do not fit the data well can be absolutely rejected. In addition to

evaluating the absolute goodness of fit of single models, it is possible to evaluate competing models by using likelihood ratio chi-square tests to compare them.

The objective of SEM is to explain structures or patterns amongst a set of latent variables and constructs, typically measured by manifest variables, by analysing the correlation or variance/covariance input matrices of all variables.

There are two parts to a covariance structure model: the measurement part describes how the latent variables or constructs are operationalised (via the manifest variables) whilst the structural part specifies relationships between the latent variables or constructs themselves.

In this study, four independent variables, three situational moderator variables and two dependent variables are used. Moreover, four propositions from the '1996 Theory' are examined.

8.11.3. The '1996 Theory' is tested via Royal Air Force Engineers of varying ranks: Flight Lieutenant, Squadron Leader, and Wing Commander.

8.11.4. Leader Behaviour Questionnaire Two measures the Iv; Task Demand Questionnaire Three measure the SMv; and the Performance Questionnaire measures the Dv.

8.11.5. A two-step approach is used to utilise SEM. In the first step, the researcher validates the measurement model through CFA and tests for construct validity by testing construct unidimensionality, reliability, convergent validity, discriminant validity and predictive validity. Once the measurement model is validated, the analyst can conduct the

second step of the procedure by estimating structural relationships between latent variables or constructs, and thus test the structural model.

It is rare that a model fits well at first. Sometimes model modification is required to obtain a better-fitting model. AMOS allows for the use of *modification indices* to generate the expected reduction in the overall model-fit-chi-square for each possible path that can be added to the model.

8.11.6. The research results suggests: SMvs influence preferences for a particular type of leadership behaviour (by the subordinate); leader behaviour has a significant impact on subordinate satisfaction; work unit performance is influenced by leader behaviour; performance is not only influenced by the satisfaction of individual members but by the actual type of task demand, which the unit is required to complete; and, it is not possible to make an accurate assessment of the leader behaviour which 'contributes' most to performance and satisfaction. Facilitatory leader behaviour (particularly work), however, make a significant contribution to both performance and path-goal to satisfaction.

Overall, it is considered that there are associations and relationships between the variables is. However, the direction of this relationship is not known and it is difficult to predict accurately. Without further research, which is replicated and revalidated with other cohorts, causality in the 'Iv — SMv — Dv', cannot be argued.

8.11.7. Five propositions pertaining to structural relationships were presented in section 8.2.5; they are all accepted.

CHAPTER 9

CONTRIBUTION

9.1 INTRODUCTORY REMARKS

In chapter one, a structure to this research is offered. This structure has 4 pillars: background theory, focal theory, data theory, and contribution. The contribution is the final pillar in the research structure; here, the significance of the analysis is underlined.

The aim of this chapter is to explain how the research contributes to the field of leadership (in general) and path-goal theory in particular. To achieve this aim, the chapter will restate the study objective, summarise the research results, draw conclusions from the research results (in three domains: theoretical, methodological, and managerial); state the limitations of the research; make recommendations for further study; and suggest a future direction for the path-goal theory of leadership. Finally, the chapter will conclude with a summary.

9.2 RESTATEMENT OF RESEARCH OBJECTIVE

This study has one objective: to evaluate *The Reformulated 1996 Path-Goal Theory of Work Unit Leadership* via Structural Equation Modelling.

9.3 SUMMARY OF THE RESEARCH

This research has established the following information:

- The Top 4 leader behaviours are supportive leader behaviour, path-goal leader behaviour, interaction facilitation leader behaviour, and work facilitation leader behaviour.
- The four principal task demands, which are similar for both officers and SNCOs, are: the management of change; introduction of training programmes (associated with the management of change); welfare/discipline/morale issues; and career guidance/personal development of subordinates.
- The most complex tasks are the management of change; the most challenging tasks are the career guidance/personal development of subordinates; and the most repetitive are welfare/discipline/morale issues.

9.4 CONCLUSIONS FROM THE RESEARCH

9.4.1 THEORETICAL

9.4.1.1. A New Model? Path-goal leadership has its genesis in the work of the Institute for Social Research at the University of Michigan. In 1957, Georgopoulos, Mahoney, and Jones published their seminal test of the expectancy theory of motivation. One year later, Kahn argued that the effects of leaders on subordinates' performance and satisfaction might be

mediated through effects upon the subordinate's motivation. By 1964, with the publication of Vroom's *Work and Motivation*, it was clear that the next sensible step was to examine whether important organizational factors (leadership, structure and job design) might have an impact on employee behaviour through a motivational mediator. In turn, Evans (1968, 1970) presented a theoretical exposition of the ways in which this mediation might take place for leadership behaviour (consideration and initiating structure) and provided for a test of the theory (as well as of the underlying expectancy theory of motivation). In 1971, House extended the theory by examining the contingencies under which leader behaviour might effect each of the elements of motivation. This position was elaborated and extended by House and Mitchell (1974) and their model — shown in most OB textbooks — is shown at Figure 9.0 (copied from Figure 1.1).

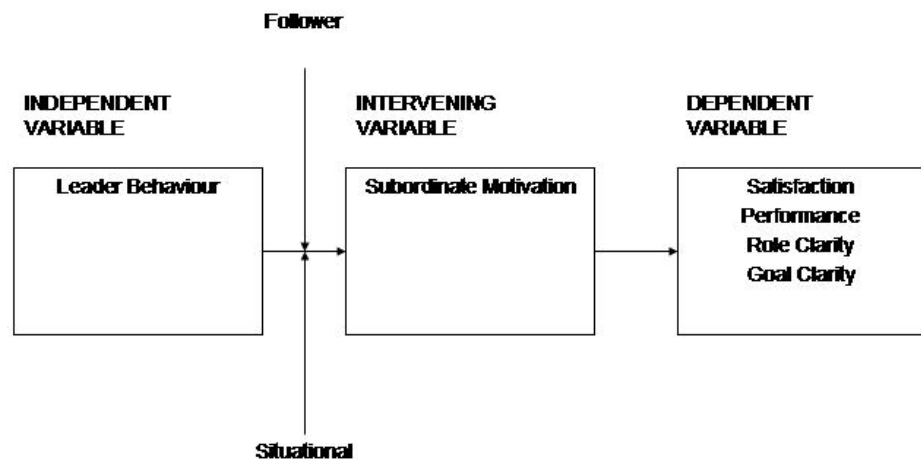


Figure 9.0: A Model of Path-Goal Theory

From this model, path-goal theory attempts to explain the impact that leader behaviour has on subordinate motivation, satisfaction and performance. Therefore, by employing behaviour contingent on the SMVs (situational and follower), the leader attempts to influence subordinates' perceptions and motivate them, which in turn leads to their increased satisfaction, performance and role and goal clarity. In other words, by doing the preceding, the leader attempts to make the path to subordinates' goals as smooth as possible. However, to accomplish this path-goal facilitation, the leader must use the appropriate style contingent on the SMVs present.

A alternative model — developed from this research (minus the InV) — is shown at Figure 9.1.

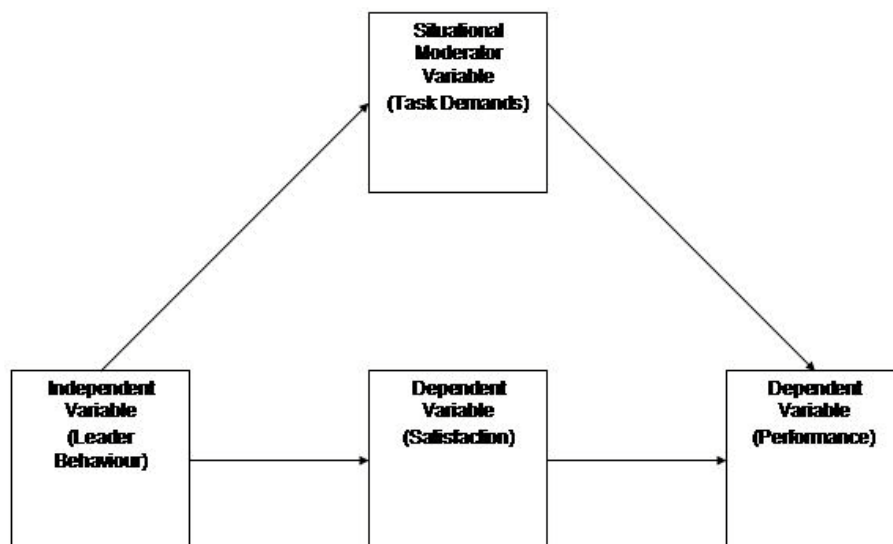


Figure 9.1: An Alternative Model of Path-Goal Theory

From this model, the following is offered:

- Satisfaction and performance are separate parts of the model (hitherto, the Dv of the path-goal model, 'clustered' the various outcomes together (for example, satisfaction, role clarity, goal clarity, and performance)).
- The Iv (leader behaviour) affects satisfaction directly and performance indirectly.
- Satisfaction has a direct affect on performance.
- Work unit performance is a function of both the Iv (leader behaviour)(indirectly), satisfaction (directly), and the SMv (directly). In other words, performance of the work unit will change, depending on the Iv, the Dv, the SMv or a combination/permutation of the three.
- The SMv 'moderates' the relationship between leader behaviour and satisfaction (only). Therefore, the effect of a leader's actions on subordinate satisfaction is not necessarily the same as the effect on subordinate performance: depending on the situation, leader behaviour may affect satisfaction and performance the same way, or both differently, or one but not the other.
- By employing behaviour contingent on the SMvs, subordinates' satisfaction and performance is affected; i.e. the SMv influences the effect of the leader behaviour on the dependent variable.

9.4.1.2. A 'time-limited' theory? In the extant literature, it is suggested that the dearth of research on path-goal theory — since the early 1990s — is due to several reasons:

- critical reviews (e.g. Schriesheim & Kerr, 1977) may have made it more difficult for research to be published in the path-goal leadership domain;
- path-goal theory has lost some inherent appeal or 'glamour' (due to the passage of time and the advancement of new leadership approaches); and
- the theory has not been seriously improved upon since 1974.

The original theory (and its revisions) was stated in broad and general terms, in the belief that this would facilitate its modification and extension over time (Filley, House, & Kerr, 1976; House, 1971; House & Dessler, 1974; and House & Mitchell, 1974). However, House's (1971, 1974) model does not take into account how levels of stress, organizational culture and climate, working conditions, technology, economic conditions, or type of organizational design affect the leadership process. In addition, path-goal theory does not concern political behaviour of leaders, strategic leadership of organisations, or leadership as it relates to change. In addition, the working environment has changed significantly since the 1970s (due to political, economic, socio-cultural, technological, legal and environmental reasons) and perhaps academics and practitioners see leadership as being very different today than as it was some 30 years ago. Therefore, in purely theoretical terms, the environment in which leadership is enacted may have evolved beyond the development of path-goal theory itself.

9.4.2 METHODOLOGICAL

9.4.2.1. An Improved Research Design? Although there are a number of concerns about how path-goal theory has been tested hitherto, three appear paramount (Schriesheim *et al* (2006)):

- Poor quality measures have often been used in previous path-goal theory tests. This shortcoming is believed to have limited the level of support for the theory (House, 1996).
- Most researchers have tested only a few aspects of the theory while ignoring other aspects. It has been suggested that this has occurred because: “Scholars generally feel uncomfortable in refining, extending, and testing the path-goal framework, partly because the easiest relationships have already been tested... and partly because of the difficulty of developing meaningful extensions of or modifications to the theory” (Schriesheim & Neider, 1996, p. 319). Addressing this second concern, House (1996) developed a substantial revision of the original theory, further explicating its theoretical underpinnings and providing a clearer basis for future tests of the path-goal approach.
- The lack of suitable tests of its level of analysis predictions.¹¹² All direct tests — to date — of path-goal theory have employed only raw score or compound analyses.¹¹³

¹¹² Leadership can be conceptualised as an individual process, dyadic process, a group process and an organizational process. Most leadership theories are focused on processes at only one of these levels, because it is very difficult to develop a multi-level theory that is also parsimonious and easy to apply. The dyadic approach to leadership focuses on the

Failing to test appropriately the level of analysis at which relationships occur can result in effects being missed or misidentified. In general, the lack of explicit attention to level of analysis issues has been strongly criticized as a very serious deficiency and limitation of previous leadership and management research (Klein *et al.*, 1994). Since none of the approximately 120 studies investigating the theory has directly tested both path-goal hypotheses and their hypothesized level(s) of analysis, suitable research is clearly needed; this is one purpose of this study.

9.4.2.2. The Unique Effects of Leader Behaviour? In the methodology chapter (chapter 6), the Ivs (leader behaviours) are treated discretely. The need for this procedure stems from the hypothesis that each of the leader behaviours will have unique effects. However, Table 8.13 demonstrates that asking for discrete information from respondents gives rise to discrete returns, which can be difficult to interpret. Although path-goal theory continues to treat each type of leadership behaviour separately, in reality this can be troublesome and the likely interactions among the various leader behaviours must be considered.

9.4.2.3. Is path-goal theory relevant to context? This research is undertaken within the context of a military domain, by using engineers in the Royal Air Force as the primary data source. This cohort was selected for various reasons: leadership research has its origins in military organizations (e.g. Sun Tzu, 500 BC); the Royal Air Force takes leadership development very seriously and it was hoped that the response rate for the quantitative and qualitative investigation would be significant; and Royal Air Force engineers are at the

relationship between a leader and another individual who is usually a follower (these theories usually acknowledge that group and organizational processes are involved in leadership, but they do not explicitly describe the processes).

¹¹³ A compound analysis uses a mixture of some raw score variables and some variables that are measured at the within- and/or between-group level of analysis (Katerberg & Hom, 1981).

forefront of some of the most sophisticated technology available. In detail, the research is undertaken with Officers and Senior Non-Commissioned Officers of the Royal Air Force (the sample) who are predominately based at the Royal Air Force College Cranwell in Lincolnshire, England.

In this respect then, the contextual significance of this work cannot be overlooked as the research results are context-specific. However, a major criticism of leadership research — to date — is that previous studies have almost entirely been based on samples of adolescents, supervisors and lower-level managers, rather than individuals in positions of significant authority, such as high-level managers and chief executives with overall responsibility for organisational performance (House & Aditya (1997, p410)). Of note, the propositions examined in this research are tested with senior personnel, with the research being descriptive. The skills and competencies of these ‘high-grade staff’ may be very similar to cohorts in other sectors of the UK labour market and whilst this research was undertaken in a military arena, it could be argued that the results would be similar to other comparable cohorts (and specialisations) in the Air Force, between services (i.e. British Army and Royal Navy), other uniformed organisations, other public sector organisations (e.g. university staff and personnel from the National Health Service) and organisations in the private and not-for-profit sectors.

For example, the relevant leader behaviours identified during this research are:

- supportive leader behaviour;
- path-goal leader behaviour;

- interaction facilitation leader behaviour; and
- work facilitation leader behaviour.

These behaviours are all 'soft-skill orientated'. At higher levels of management, it is argued that these 'soft' behaviours would be similar across varying cohorts.

In addition, the task demands identified during the research are:

- the management of change;
- introduction of training programmes (associated with the management of change);
- welfare/discipline/morale issues; and
- career guidance/personal development of subordinates.

Again, it is possible to suggest that these task demands would be prevalent in other sectors of the UK economy.

In sum, although the contextual significance of this research cannot be ignored, it is argued that the research results would be broadly similar to all sectors of the UK labour market, and, therefore, the results could have general applicability.

9.4.3 MANAGERIAL

9.4.3.1. Leadership Behaviours. The rank order of leadership behaviours identified in this research is shown again at Table 9.0.

RANK ORDER	BEHAVIOUR
1	Support
2	Path-Goal
3	Interaction Facilitation
4	Work Facilitation
5	Achievement
6	Representation
7	Value
8	Group

Table 9.0: Rank Order of Leader Behaviours

Before understanding can be offered to the ‘Top 4 behaviours’ (and their priority), it is important to revisit the definitions of these leader behaviours.

SUPPORTIVE LEADER BEHAVIOUR

Supportive leader behaviour provides psychological support for subordinates. Such behaviour is especially needed under conditions in which tasks or relationships are psychologically or physically distressing. Supportive relationships increase the quality of relationships between superiors and subordinates and decrease subordinate stress.

PATH-GOAL CLARIFYING BEHAVIOUR

A number of leader behaviours are capable of making subordinates' needs and preferences contingent on effective performance under a select set of conditions. These include:

- clarifying subordinates performance goals;

- clarifying the means by which subordinates can effectively carry out their tasks;
- clarifying the standards by which subordinates' performance will be judged;
- clarifying the expectancies that others hold for subordinates to which the subordinate should and should not respond; and
- the judicious use of rewards and punishment, contingent on performance.

These behaviours are referred to as path-goal clarifying behaviours in that they (metaphorically) clarify subordinates' paths to goal accomplishment. The acceptability and motivational effect of path-goal clarifying behaviours depends on the tasks performed by subordinates. Path-goal clarifying behaviours will have the most positive effect on subordinates when subordinates' role and task demands are ambiguous and intrinsically satisfying. Moreover, it is assumed that under such conditions, path-goal clarifying behaviour (by superiors) will be seen as helpful and instrumental to task performance.

INTERACTION FACILITATION

Interactive Facilitation leader behaviour is a behaviour that facilitates collaborative and positive interaction (for example, resolving disputes, facilitating communication, and giving the minority a chance to be heard), emphasises the importance of collaboration and team working, and encourages close and satisfying relationships among members. These behaviours are of special relevance when the work of group members is interdependent.

WORK FACILITATION

Leader behaviours that 'facilitate work' consist of planning, scheduling and organising work; personally co-ordinating the work of subordinates; providing mentoring, developmental experiences, guidance, coaching, counselling and feedback to assist subordinates in developing the knowledge and skills required to meet expectancies and performance standards; and reducing obstacles to the effective performance of subordinates by eliminating roadblocks, bottlenecks, providing resources and authorising subordinates to take actions and make decisions necessary to perform effectively. The conditions under which work facilitation leader behaviours are likely to be effective depend on the degree to which the technology is understood, the work demands are predictable and the external environment and changing competitive conditions are stable.

Although these behaviours were established in a military environment, it is possible to draw conclusions, which may be applicable to all managerial sectors in the UK. When the environment (both internal and external) is dynamic, turbulent and in constant flux, it is important that leadership behaviours are soft-skill orientated.¹¹⁴ In addition, when there is significant technical and intellectual complexity, participation and consultation are also helpful and appropriate. Supportive leadership behaviour is also most important with difficult tasks, especially when personnel are put in 'harm's way'.¹¹⁵

¹¹⁴ This may be difficult, however, to the manager who relies solely on the hard skills of controlling and directing. To date, leadership, management and command training (and doctrine) has often focused on 'hard' skills such as planning, organizing and directing, all within an impersonal hierarchical structure. However, current thinking is now shifting towards an increase in the importance of 'soft' skills such as coaching, guiding and communicating.

¹¹⁵ The Industrial Society has published research on the 5 weakest areas of the less successful

As leadership is a dynamic process between the leader and the led, the employee of today may require a subtly different approach in the ways that they are led, managed and 'commanded' if the maximum use is to be made of them as a human resource. Employers have traditionally been able to rely on the fact that the subordinate was going to do what he/she was told because the order came from someone senior: this is no longer an acceptable assumption. Employees are now more 'questioning' and, therefore, will be more willing to respond to leadership styles that involve them in the decision making process that explains the rationale behind that decision. In this respect, the importance of facilitation cannot be overlooked to managerial leadership. Today, we are moving towards organizations formed more like temporary systems networks and clusters: their mind set will be alignment, creativity and empowerment. In addition, leaders, particularly military, are already required to adapt to peer leadership, matrix-style management and team building that combines military and civilian efforts in joint, coalition and inter-agency activities, all in a fast-paced, high tempo environment. This system will require a holistic and multifaceted approach to leadership that stresses interactive participation, open communication and continuous learning for both the leaders and the followers. The functions of leadership then becomes the creation of systems, structures and environments where this interaction, facilitation and learning can occur.

9.4.3.2. Task demands. The tasks faced by the group and by its individual members affect and are affected by leadership. The leader behaviours — required by the tasks — have

leader: failure to be sensitive to peoples feelings; failure to recognize other peoples' stress; failure to develop and guide staff; failure to encourage feedback on their own (the leader's) performance; and failure to consult those affected before making decisions. Although the above list was generated from Industrial leaders, it has equal applicability to the Royal Air Force and serves to reinforce previous arguments about the personal or human side to leadership, management and command: the above failures are all 'soft-skill' orientated.

consequences for the outcomes of the members' satisfaction, the group's productivity, and the organization's performance. The requirements of tasks affect whether a leader is needed, who emerges as a leader, how the leader behaves, and what kinds of leadership behaviour will result in greater productivity and satisfaction of the followers. Different tasks call for different abilities, and the leaders who emerge have different competencies that are relevant to the requirements of the different tasks. Although it is difficult to comment on the degrees of complexity, challenge and repetition, managers must be aware that 'difficult jobs' can cause stress, anxiety and frustration.

9.4.3.3. Propositions. Five propositions pertaining to structural relationships were presented in section 8.2.5; these five propositions are supported. The managerial implications are thus:

- when subordinates' tasks or work environment are dangerous, monotonous, stressful or frustrating, supportive leader behaviour will lead to increased subordinate effort and satisfaction by enhancing leader subordinate relationship and self-confidence, lowering stress and anxiety and compensating for unpleasant aspects of the work;
- the higher the degree of subordinates' self-perceived ability — relative to task demands — the less subordinates will view path-goal clarifying behaviour by superiors as acceptable.
- when the task demands of subordinates are satisfying but ambiguous, path-goal clarifying behaviour (by superiors) will be a source of clarification and subordinate satisfaction and, therefore, will be motivational;

- leader behaviour directed toward interaction facilitation will increase work unit effectiveness when the work of the unit members is interdependent and the norms of the work group encourage unit members' performance; and
- when the work of the unit is characterised by technological uncertainty or the external demands imposed upon the unit are unpredictable, personal co-ordination of the work by the leader or reciprocal co-ordination by members of the work unit will facilitate work unit goal accomplishment.

9.5 LIMITATIONS OF RESEARCH

This research has several limitations. The five intervening motivational variables of the theory (intrinsic valence of behaviour, expectancy that effort leads to accomplishment, intrinsic valence of goal accomplishment, expectancy that goal accomplishment leads to valent rewards, and the valence of rewards available to followers) were not tested. In addition, the research results reflect only five of the propositions cited by House (1996). Moreover, only one SMv is tested and no 'follower' moderator variables are tested.

Therefore, the results are specific to the task demands as well as context-specific. Finally, only the outcomes (Dvs) of performance and satisfaction are tested.

9.6 RECOMMENDATIONS FOR FURTHER STUDY

9.6.1 LEADER BEHAVIOUR AND MANAGERIAL LEVEL

The leader behaviours established from this research are from senior personnel operating at the strategic level of the organisation.¹¹⁶ Therefore, it would be useful to determine the relevant leader behaviours at the operational and tactical levels. There are dyadic (individual) relationships at the tactical, operational and strategic levels. In other words, these leader behaviours may be very different at each level. It is unclear from House (1996) if the leader behaviours (cited in his theory) were for dyadic relationships at the tactical, operational and strategic levels.

9.6.2 CONTEMPORARY THEORIES OF MOTIVATION

The InV in path-goal theory is expectancy theory of motivation. As theories of motivation have also evolved over the last 30 years, perhaps it is time to develop and test path-goal theory with one of the current theories of motivation.¹¹⁷ For example, House added other leader behaviours to the '1996 Theory' to advance his work; therefore, it may be now time to develop/modify the InV element of the theory. In addition, this rational decision model (expectancy theory of motivation) may provide an overly complex and seemingly unrealistic description of human behaviour. At the time path-goal theory was developed, valence-expectancy theory of motivation (Vroom 1964) was the prevailing motivational theory of the day. Path-goal theory of leadership took as its underlying axioms the propositions of

¹¹⁶ Military activities are conducted at different levels involving different people, from the senior political leadership of the state to the soldiers, sailors and airmen at the forefront of military operations. Traditionally, military activities were viewed as having either strategic or tactical qualities. Some eminent scholars discerned a level between those two — what Jomini referred to as grand tactics — and, especially after WWII, a higher political or grand strategic level has frequently been referred to. Within NATO, there are now four levels currently accepted as providing a framework for command and analysis: the grand strategic, the military strategic, the operational and the tactical.

¹¹⁷ See Contemporary Theories of Motivation at sub-section 2.3.2.

valence-expectancy theory. Since then, it is now accepted that individuals are not nearly as rational or cognitively calculating as valence-expectancy theory would have us believe

9.6.3 INTERACTIONS

Path-Goal theory does not include statements about interactions between leader behaviours, interactions among moderator variables, time-lagged effects, relationships among dependent variables, the role of implicit theories held by leaders and followers, and many other aspects of real-world OB. All of these areas need to be reviewed.

9.6.4 COMPARISONS/CONTRASTS

It would also be useful (and interesting) to compare/contrast this analysis with other personnel in the Royal Air Force, other parts of HM Forces, other sectors (e.g. nurses), and personnel from the private and not-for-profit sectors. This is vital. Without further replication and revalidation, this research is somewhat limited and causality cannot be stated.

9.6.5 OTHER LEADER BEHAVIOURS

It would be interesting to see what effects the other four leader behaviours (achievement, representation, value, and group) would have on performance and satisfaction.

9.6.6 PERFORMANCE OR SATISFACTION

This research has examined — in some depth — performance of the work unit and satisfaction of the individual member of the work unit. Although a significant field in its own right, it would be interesting to determine which (performance or satisfaction) contributed most to organisational goals.

9.6.7 A QUALITATIVE APPROACH?

This research has a singular objective, namely to evaluate *The Reformulated 1996 Path-Goal Theory of Work Unit Leadership* via Structural Equation Modelling. Structural Equation Modelling (SEM) is a technique which effectively subsumes a whole range of standard multivariate analysis methods, including regression, factor analysis, and analysis of variance. SEM is a statistical methodology that takes a hypothesis-testing (i.e. confirmatory) approach to the multivariate analysis and provides an opportunity to hypothesise models of behaviour, and to test these models statistically.

To test the hypothesised models of behaviour, the researcher adopted a mainly quantitative methodology throughout. In addition, the major thrust of the research — to date — on path-goal theory has involved this positivistic paradigm, which was also supported throughout by Robert House (co-author of the research methodology).

Although quantitative methodologies have a rich tradition in path-goal research (Burns, 1990), there is now extensive (and intellectually robust) literature on the qualitative approach to leadership research and its future contribution to this field (Yukl, 2001). Of note, the reformulated '1996 Theory' is a theory of work unit leadership; it specifies leader

behaviours, which may enhance subordinate empowerment and satisfaction and work unit and subordinate effectiveness. It addresses the effects of leaders on the motivation and abilities of immediate subordinates and the effects of leaders on work unit performance. One is struck, therefore, by the fruitful qualitative possibilities of trying to establish the: “Effects of leaders on the motivation and abilities of immediate subordinates and the effects of leaders on work unit performance” (House, 1996, p323). For example, an ethnographic enquiry is concerned with capturing, interpreting, and explaining the way in which people in a group live, and make sense out of their world and their society or group (Bryman 2004). During the research period, the researcher was a serving officer in the Royal Air Force and ethnography would have been an ideal research approach for this context-specific study.

In summary, the American influence in leadership research (in general) and path-goal theory (in detail) cannot be overlooked; however, it seems that the theory’s conceptual sophistication, while probably necessary to capture nuanced understanding of the behavioural and psychological processes involved in various situations with various individuals, prevents adequate testing using traditional positivistic field methods. The conclusion is that path-goal theory — while probably not quite complex enough to describe dyadic leadership processes — is too complex for traditional field research methods.

Therefore, in light of experience with the development of path-goal theory, perhaps it is time to reconsider the interplay of theory and alternative research methodologies. Indeed, in view of previous failings in the positivistic approach (methodological limitations in traditional research approaches, measurement artefacts, sampling inadequacies, common method variance, improperly estimated statistical models due to specification error (especially surrounding interactions among moderator variables), and an absence of

longitudinal designs and studies), it (path-goal theory) would certainly seem ripe for new, more appropriate testing using a variety of powerful methods previously not applied much in this area. In this respect, qualitative methodologies cannot be discounted in further research on path-goal theory.

9.7 WHERE NEXT?

Over 35 years have passed since Robert House published his classic article, *A Path-Goal Theory of Leader Effectiveness* in *Administrative Science Quarterly* (1971). Based on the work of Georgopolous, Mahoney and Jones (1957), and the doctoral dissertation and earlier work of Evans (1968, 1970), House's path-goal conceptualization of leadership used Vroom's (1964) expectancy theory of motivation to identify the effects of leader behavior on subordinate outcome variables. From this initial development by Evans in 1968, path-goal theory has developed into a contingency form (House, 1971) and into a general diagnostic model (Kerr & Jermier, 1978). Once path-goal theory focused upon transactional calculative forms of leadership (the impact on subordinates' expectancies and, to a lesser extent, the provision of valued rewards), the gap in terms of the leader's role in need-arousal became clear. This, together with Burns's (1978) work on transformational leadership led to the development of better theories, namely the charismatic and transformational theories of leadership (House, 1977 and Bass, 1985) which take path-goal theory to its logical transcendental limit (Evans, 1996).

In its most succinct terms, the function of a leader — as explicated in path-goal theory — is: “To increase personal pay-offs to subordinates for work-goal attainment and make the path

to these pay-offs easier to travel by clarifying it, reducing road blocks and pitfalls, and increasing the opportunities for personal satisfaction en route”(House, 1971, p. 324). Thus, the effective leader is one who assists subordinates through paths, which ultimately lead to organizationally-desired and individually-valued outcomes. The need for such leadership is moderated by characteristics of the environment as well as by characteristics of the subordinates . As Bass (1990, p.627) notes: “The leader ‘needs to complement only what is missing in a situation to enhance the subordinate’s motivation, satisfaction, and performance”.

Unfortunately, research on the theory has yielded generally inconsistent findings and has been plagued with methodological shortcomings.¹¹⁸ In addition, path-goal theory is difficult to utilize fully and research findings (to date) give only limited support. Path-goal theory also has some conceptual difficulties:

- it suggests a one-way impact from leader to follower, which could promote dependency; and
- it fails to explain adequately the *relationship* between leadership behaviour and worker motivation.

¹¹⁸ Interested readers should consult more comprehensive reviews by Bass (1990), Fisher and Edwards (1988), House and Baetz (1979), Indvik (1986), Miner (1980), Schriesheim and Kerr (1977) and, more recently, Wofford and Liska (1993).

Moreover, interpreting the meaning of the theory can be very confusing because it is so complex and incorporates so many different aspects of leadership; consequently, it is difficult to implement.

Path-goal theory, however, was the earliest leadership theory that convincingly specified multiple leader behaviors. Despite previous attempts to identify important varieties of leader behavior (e.g. Stogdill, Wherry, & Jaynes, 1956), many theorists — at the time — had gravitated toward simplistic one- and two-dimensional models of leadership, usually emphasising task and relationship-oriented leader behavior. Path-goal theory specified four conceptually distinct varieties of leader behavior, denying what was taken-for-granted about the exclusiveness and primacy of task and relationship-oriented behaviors by including participative and achievement-oriented behaviours (Hunt, 1996). Path-goal theory also stated that leadership was, in essence, a dyadic more than a group phenomenon (Evans, 1996). Leaders were theorized to impact differentially the motivations of individuals by affecting valences and expectations. They also impacted the satisfactions of individual subordinates and the degrees to which individuals accepted the leader. This denied what was taken-for-granted about the uniformity and consistency of group leadership and opened the field up to considering individualising approaches to managerial leadership. Furthermore, path-goal theory accelerated the move toward contingency approaches in OB research by identifying more complex combinations of variables that moderated the effects of leader behaviors.

Research then emerged that showed not only the limitations of ‘one-best way’ thinking, but also the potential for refining explanations by examining how combinations of situational

variables moderated the effects of leader behaviors. This laid to rest the idea that leadership effects were anything simple. Finally, and most importantly, path-goal theory laid the groundwork for considering situations where behaviors of leaders were of little or no consequence. It stated that leader behavior would be motivational for subordinates to the extent that it complements the work environment and supplements it with what is otherwise lacking. Although this statement suggested that there are situations where leadership is irrelevant, House and associates stopped short of elaborating this theme. But, questioning of the primary, taken-for-granted assumption in leadership research (that *some* form of leader behavior would always have important effects) captured the attention of others who thought the role of formal leaders was often overblown. The idea gained momentum, resonating through the field of OB as reflected in the work of Calder (1977) Pfeffer (1977), Kerr and Jermier (1978), Meindl, Erlich, & Dukerich (1985) and others. Ironically, a major feature of the path-goal theory of leadership that made it interesting was that it bordered on denying the importance of leader behaviors in certain situations, thereby raising to awareness the fundamental assumption in the field (Evans, 1996).

While the road has been 'long and winding' with respect to published evidence bearing on the basic tenets of House's path-goal theory, one important point should be made before concluding this thesis. Paraphrasing the words of Fred Fiedler (1977), path-goal theory is in grave danger of being prematurely buried (or, at the least, of being ignored and perhaps dying of malnutrition). Reviewing the scientific journals which publish theory and empirical research on leadership, one cannot help but be struck by the lack of recent work on the path-goal theory of leadership.

Path-goal leadership theory is basically a 'functional' approach to leadership, calling for a diagnosis of functions, which need to be fulfilled in subordinates' work environments for them to be motivated, perform at high levels, and be satisfied. Using what House has called 'path-goal theorising,' the theory may be extended by:

- identifying key functions necessary for subordinates' motivation, performance, and satisfaction;
- identifying the degree to which these functions are provided by sources other than the leader (e.g., the task, co-workers, professional training, etc.); and
- predicting the effects of different types of leader behaviour based upon the assessments outlined in the two steps above.

What is missing is a 'theory,' 'model,' or 'framework' upon which to base such diagnoses.

One possibility is the combined motivation model developed years ago by Porter and Lawler (1968). Although it is clearly beyond the scope of this study to illustrate how path goal ideas may be extrapolated, Neider and Schriesheim (1988) provide a good example of how this might be accomplished. Briefly, they applied path-goal theorizing to the Porter and Lawler (1968) framework, and produced a three-stage model of leadership development which employs variables and relationships which were derived from the path goal approach (see again Figure 4.0 on page 100 and Bass, 1990, p 632 for a summary of this model).

In conclusion, it is worth noting Miner's (1980, p.350) assertion that: "Path-goal theory has a compelling logic to it that other theories have not achieved" and that "one cannot help but

conclude that in this respect, path-goal theory is on the right track.” Although the theory has not been adequately tested, path-goal theory has made an important contribution to the study of leadership by providing a conceptual framework to guide researchers in identifying potentially relevant situational variables. Today, many academics working in the field of OB know path-goal theory in its more simplified form, assume the validity of its major propositions, and use it as dominant guiding imagery when thinking about contingency approaches to leadership. It probably serves as a powerful implicit theory of leadership for non-specialist academics working in OB. It seems that path-goal theory also contains enough complex and subtle features to stimulate the imaginations of specialists. As Wofford and Liska (1993) identified, 120 studies have been conducted to test path-goal theory hypotheses and there are numerous other review-type and interpretive pieces that are focused on the fine points of this approach. The interior complexity of this literature has sustained traditional methods of inquiry for years and could do so for many more years. But, where might this lead? Reviews of the state of progress concerning path-goal theory point to methodological limitations in traditional research approaches; measurement artefacts; sampling inadequacies; common method variance; improperly estimated statistical models due to specification error (especially surrounding interactions among moderator variables); an absence of longitudinal designs and studies; and a number of other failings in positivistic technique (Schriesheim & Neider, 1996). It seems that the theory’s conceptual sophistication, while probably necessary to capture nuanced understanding of the behavioural and psychological processes involved in various situations with various individuals, prevents adequate testing using positivistic field methods. If the theory is difficult to test empirically in its present forms, what might the list of research methods deficiencies look like accompanying a second-generation path-goal theory with the

additional features mentioned in this thesis? The conclusion is that path-goal theory — while probably not quite complex enough to describe dyadic leadership processes — is too complex for traditional field research methods. In light of experience with the development of path-goal theory, perhaps it is time to reconsider the interplay of theory and empirical research methods (House, 1996). Path-goal theory should flourish in the next several years because it has not yet been discredited. In fact, there is a body of research that partially supports the approach: it includes the highly interesting premise that there are situations where the behavioural roles of the formal leader are quite insignificant; its subtext aligns with the current zeitgeist of empowerment from below; and it is ripe for new, more appropriate testing using a variety of powerful methods previously not applied much in this area.

In closing, it is considered that there is association between the variables; however, the direction of this association is not known and it is difficult to predict accurately. Without further research, which is replicated and revalidated with other cohorts, causality in the relationship of leader behaviour to outcome variable cannot be argued. To echo the words of Bob House — in the opening page of this thesis — further research is still required.

9.8 SUMMARY OF CHAPTER 9

9.8.1 INTRODUCTORY REMARKS

This chapter describes the contribution, which this research makes to the field of leadership and path-goal theory. This research advances understanding in three domains: theoretical, methodological, and managerial.

9.8.2 RESTATEMENT OF RESEARCH OBJECTIVE

This study has one objective: to evaluate *The Reformulated 1996 Path-Goal Theory of Work Unit Leadership* via Structural Equation Modelling.

9.8.3 SUMMARY OF THE RESEARCH

This research has established the following information:

- The Top 4 leader behaviours were supportive leader behaviour, path-goal leader behaviour, interaction facilitation leader behaviour, and work facilitation leader behaviour.
- The four principal task demands, which are similar for both officers and SNCOs, were: the management of change; introduction of training programmes (associated with the management of change); welfare/discipline/morale issues; and career guidance/personal development of subordinates.

- The most complex tasks are the management of change; the most challenging tasks are the career guidance/personal development of subordinates; and the most repetitive are welfare/discipline/morale issues.

9.8.4 CONCLUSIONS FROM THE RESEARCH

9.8.4.1. Theoretical. From the model developed from SEM:

- satisfaction and performance are separate parts of the dependent variable;
- the independent variable effects satisfaction directly and performance indirectly;
- satisfaction has a direct effect on performance; and
- the task demand moderates the relationship between leader behaviour and performance (only). Therefore, the effect of a leader's actions on subordinate satisfaction is not necessarily the same as the effect on subordinate performance: depending on the situation, leader behaviour may affect satisfaction and performance the same way, or both differently, or one but not the other.

In addition:

- SMvs also influence subordinate preferences for a particular pattern of leadership behaviour.
- The SMv influences the leader behaviour and satisfaction in different ways.

- The greatest implied casualty for the SMvs of M of C and CGPD is with the leader behaviour of 'path-goal' and 'interaction facilitation' for the SMv of WDM.
- Satisfaction is enhanced for the SMv of Management of Change with all four leader behaviours. For the SMv of 'Career Guidance/Personal Development of Subordinates' only the leader behaviour of path-goal enhances satisfaction.
- The working environment has changed significantly since the 1970s, and perhaps scholars and practitioners may see leadership as being very different today than as it was some 30 years ago; therefore, in purely theoretical terms, the environment in which leadership is enacted, may have evolved beyond path-goal theory.

9.8.4.2. Methodological. The methodology/research design used in this research was employed to eliminate the main weaknesses in previous research; co-authored by the researcher and Robert House, the methodology was independently validated with 2 leading researchers in the field.

The contextual significance of this work cannot be overlooked. However, the propositions examined in this research are tested against high grade staff, with the research being descriptive. The leader behaviours are all soft-skill orientated.

9.8.4.3. Managerial. When the environment (both internal and external) is dynamic, turbulent and in constant flux, it is important that leadership behaviours are soft-skill orientated. When there is significant technical and intellectual complexity, participation and consultation are also instructive. Supportive leadership behaviour is important with

difficult tasks. It seems probable that these tasks will be similar in both the public and private sectors in the UK.

9.8.5 LIMITATIONS OF RESEARCH

This research has several limitations: the five intervening motivational variables of the theory are not tested; the results reflect only four propositions; only one SMv is tested and no 'follower' moderator variable is tested; and the results are specific to the task demands and are context specific.

9.8.6. RECOMMENDATIONS FOR FURTHER STUDY

It would be useful to determine the relevant leader behaviours at the operational and tactical levels.

Perhaps it is time to develop and test path-goal theory with current theories of motivation.

Path-goal theory does not include statements about interactions between leader behaviours, interactions among moderator variables, time lagged effects, relationships among dependent variables, the role of implicit theories held by leaders and followers, and many other aspects of real-world OB. All these areas need to be reviewed.

This research should be compared/contrasted with other personnel in the Royal Air Force, other parts of HM Forces, other sectors (nurses), and personnel from the private and not-for-profit sectors.

It is important to examine and test the other behaviours cited in 1996.

9.8.7. WHERE NEXT?

The theory may be extended by (a) first, identifying key functions necessary for subordinates' motivation, performance, and satisfaction, (b) then, identifying the degree to which these functions are provided by sources other than the leader (e.g., the task, co-workers, professional training, etc.), and (c) predicting the effects of different types of leader behaviour based upon the assessments outlined in steps (a) and (b) above. What is missing is a 'theory,' 'model,' or 'framework' upon which to base such diagnoses.

Path-Goal theory has made an important contribution to the study of leadership by providing a conceptual framework to guide researchers in identifying potentially relevant situational variables.

Today, many academics working in the field of OB know the path-goal theory in its more simplified form, assume the validity of its major propositions, and use it as dominant guiding imagery when thinking about contingency approaches to leadership.

Path-Goal theory, while probably not quite complex enough to describe dyadic leadership processes, is too complex for traditional field research methods. Path-goal theory will flourish in the next several years because it has not yet been discredited: there is a body of research that partially supports the approach; it includes the highly interesting premise that there are situations where the behavioural roles of the formal leader are quite insignificant; and its subtext aligns with the current zeitgeist of empowerment from below.

Without further research, which is replicated and revalidated with other cohorts, causality in the relationship of leader behaviour to outcome variable cannot be argued.

ANNEXES

- A. The Leader Behaviour Description Questionnaire
- B. Pilot Research Methodology
- C. Leader Behaviour Questionnaire One
- D. Leader Behaviour Questionnaire One: Additional Data
- E. Task Demand Questionnaire One: Letter of Request
- F. Task Demand Questionnaire One: Additional Data
- G. Task Demand Questionnaire Two: Letter of Request
- H. Task Demand Questionnaire Two: Additional Data
- I. Summary Data about Average Ranks for Two Groups
- J. Leader Behaviour Questionnaire Two and Task Demand Questionnaire Three
- K. The Unit Performance Indicator Questionnaire

A. THE LEADER BEHAVIOUR DESCRIPTION QUESTIONNAIRE

BACKGROUND

Questionnaire research on effective leadership behaviour has been dominated by the influence of the Ohio State University Leadership Studies. A major objective of this programme of leadership research was to identify effective leadership behaviour. The initial task of the researchers was to develop questionnaires for subordinates to use in describing the behaviour of their leader or manager. The researchers compiled a list of about 1800 examples of leadership behaviour, and then reduced the list to 150 items that appeared to be good examples of important leadership functions. A preliminary questionnaire composed of these items was administered to samples of military and civilian personnel, and each person was asked to describe the behaviour of his or her supervisor (Fleishman, 1953; and Hemphill and Coons, 1957). Factor analysis of the questionnaire responses indicated that subordinates perceived their supervisor's behaviour primarily in terms of two dimensions or behaviour content categories, which were subsequently labelled consideration and initiating structure.

CONSIDERATION AND INITIATING STRUCTURE

Consideration is the degree to which a leader acts in a friendly and supportive manner, shows concern for subordinates and looks out for their welfare. Examples include doing personal favours for subordinates, finding time to listen to subordinates' problems, backing up or going to 'bat' for a subordinate, consulting with subordinates on important matters before going ahead, being willing to accept subordinates suggestions and treating a

subordinate as an equal. Initiating structure is the degree to which a leader defines and structures his or her own role and the roles of subordinates towards attainment of the group's formal roles. Examples include criticizing poor work, emphasizing the importance of meeting deadlines, assigning subordinates to tasks, maintaining definite standards of performance, asking subordinates to follow standard procedures, offering new approaches to problems, coordinating the activities of subordinates, and seeing that subordinates are working to capacity.

Leader Consideration (LC) and Leader Initiating Structure (LIS) were found to be relatively independent behaviour categories: this means that some leaders are high on LC and low on LIS; some leaders are low on LC and high on LIS; some leaders are low on both; and some leaders are high on both. Of course, most leaders probably fall on a continuum between the extreme high and low scores. Based on the results of the initial studies, two revised and shortened questionnaires were constructed to measure LC and LIS. These questionnaires were called the Leader Behaviour Description Questionnaire (LBDQ) and the Supervisory Behaviour Description (SBD or SBDQ). Although often treated as equivalent, the content of the behaviour categories for these two versions of the questionnaire is not the same (Schriesheim & Stogdill, 1975). A third questionnaire, called the Leader Opinion Questionnaire (LOQ), has been treated by some researchers as a measure of behaviour, but it is viewed more appropriately as a measure of attitudes rather than behaviour.

Eventually a fourth questionnaire (Leader Behaviour Description Questionnaire, Form XII) was developed by some Ohio State University researchers, who narrowed the scope of LC and LIS and added 10 additional scales (Stogdill, Goode and Day, 1962). Some of the new

scales in the LDBQ Form XII measure aspects of leadership behaviour (for example, representation and integration), but others measure traits (for example uncertainty tolerance) or skills (predictive accuracy and persuasiveness). The Ohio State leadership questionnaires (and modified versions) of them have been used in hundreds of studies by many different researchers over the last quarter of a century. However, even after the LBDQ XII was developed, most researchers continued to use only LC and LIS scales.

Hundreds of studies have been conducted on the effects of LC and LIS, but the results for most criteria have been inconsistent and inconclusive (Bass 1990; Kerr and Schriesheim , 1974; and Yukl, 1971). In some studies, subordinates were more satisfied and performed better with a structuring leader, whereas in other studies the opposite relationship or no significant relationship was found. The findings were also inconsistent with the relationship between LC and performance criteria. The only relationship that has been fairly consistent is the effect of LC and satisfaction criteria. As suggested by Fleishman and Harris (1962), most researchers have neglected to test for the possibility of curvilinear relationships, or for interactions between LC and LIS.

LIMITATIONS OF BEHAVIOUR QUESTIONNAIRES

Behaviour description questionnaires, like the ones described earlier, are susceptible to several types of bias and error (Luthans & Lockwood , 1984; Schriesheim and Kerr, 1977; and Uleman, 1991). One source of error is the use of ambiguous items that can be interpreted in different ways by different respondents. Most leadership questionnaires have a fixed-response format that requires respondents to think back over a period of several

months or years and indicate how often or how much a leader use the behaviour described in an item. An accurate judgement is difficult to make, since the respondent may not have noticed the behaviour at the time it occurred, or may be unable to remember how many times it occurred over a specified time period. Another source of error for fixed-response items is response bias: for example, some respondents answer each response in much the same way despite real differences in the leader's behaviour, because the respondent likes (or dislikes) the leader, Schriesheim, Kinicki & Schriesheim (1979). Responses are distorted also by stereotypes and implicit theories about what behaviours occur together (Eden and Leviatan, 1975; Gioia and Sims, 1985; and Rush, Thomas & Lord, 1977). Still another source of distortion is the tendency of some respondents to attribute desirable behaviour to a leader who is perceived to be effective, even although the behaviour was not actually observed (Green and Mitchell, 1979; and Mitchell, Larson & Green, 1977). When all the sources of error are taken into account, it is easy to see why retrospective behaviour description questionnaires are not highly accurate measures of behaviour.

PROBLEMS IN DETERMINING CAUSALITY

Most of the research on the effects of leadership behaviour has measured behaviour with questionnaires filled out by subordinates, and the resulting behaviour scores have been correlated with criterion measures obtained at the same point in time. When a significant correlation is found, there is no way to determine the direction of causality. For example, when a positive correlation is found between LC and subordinate performance, there is a variety of possible interpretations. Researchers usually assume that causality is from behaviour to outcomes, which favours the interpretation that considerate leaders cause the

subordinates to be more motivated and productive. An equal plausible assumption is that causality is in the opposite direction, which favours the interpretation that leaders are more considerate to subordinates who perform well, Green (1975). Another possible interpretation is the attribution hypothesis mentioned earlier – namely, that subordinates descriptions of leader behaviour are systematically influenced by perceptions of outcomes such as their own performance or group success. A fourth interpretation is that both LC and performance are affected in the same way by a third variable, which may result in a significant correlation even when there is no causal relationship between leader behaviour and performance. This possibility is not very likely for research in which outcome variables are measured independently of leader behaviour. However, many studies obtain measures of both the leader behaviour and the outcome criterion (e.g. effort, group performance) from the same respondent. In this case, it is likely that the correlation will be inflated due to some extraneous factor, such as how much the respondent likes the leader. For example, respondents who like the leader may give high ratings on both the behaviour and the outcome, whereas respondents who dislike the leader may give low ratings on both.

B. PILOT RESEARCH METHODOLOGY

C. LEADER BEHAVIOUR QUESTIONNAIRE ONE



Defence Studies (Royal Air Force)
Joint Doctrine and Concepts Centre
Shrivenham
SWINDON
SN6 8RF

Military Network: 94233 4270
British Telecom: (01793) 787270



DDS/45/11

Royal Air Force Engineer Officers
of Gp Capt and above.

September 2002

PhD RESEARCH: TESTING THE 1996 PATH-GOAL THEORY OF WORK UNIT LEADERSHIP WITH ENGINEER OFFICERS IN THE ROYAL AIR FORCE

I am a serving Officer currently undertaking a PhD in the field of leadership. Specifically, I hope to 'test' one of the more contemporary theories of leadership, namely 'The Reformulated 1996 Path-Goal Theory of Work Unit Leadership' by Professor R J House.

In simple terms, Professor House argues that a leader's job is to clear 'pathways' between subordinate effort and performance and between subordinate performance and organisational goals. To test this theory, I would like to use Engineer Officers in the Royal Air Force as a data source. I would like to study Engineer Officers for two main reasons:

- Engineer Officers in the Royal Air Force have significant supervisory responsibility over the many subordinates that they have under their command.
- In the Information Technology/Information Systems environment, leadership styles have changed to reflect a new emphasis on creativity rather than a task-culture approach: these styles now place greater emphasis on knowledge and expert power rather than the position and status power currently found in traditional command and control hierarchies such as the Royal Air Force.

However, I would like stress that this research is a leadership study – independent of current Royal Air Force engineering procedures – and is not intended to impact on any engineering practices in the Royal Air Force today.

Before I design quantitative questionnaires for my research, I would like to undertake a Pilot Study of all Engineering Officers in the Royal Air Force of Group Captain and above. Consequently, I write to you, to ask you for your help.

The Reformulated 1996 Path-Goal Theory of Work Unit Leadership has stipulated eight 'leader behaviours' that a leader may use with his/her subordinates, when setting tasks and

therefore completing goals. These behaviours are summarized at Enclosure One. In addition, Enclosure Two details these further eight behaviours in tabular form. Can I please ask you to indicate which four leader behaviours are most important — in your opinion — to Engineer Officers in the Royal Air Force today for the completion of goals (i.e. objectives). Once the results of the pilot study are known, I can then focus my research on specific areas and design further quantitative questionnaires.

On completion of Enclosure Two, can you please forward your response to Flt Lt W B Howieson at Defence Studies (Royal Air Force) in the enclosed, pre-addressed envelope.

Finally, I will guarantee that all results are confidential and that you each receive personal copies of the results from this initial Pilot Study.

W B HOWIESON
Flight Lieutenant
Defence Fellow
for Director Defence Studies (Royal Air Force)

Enclosure:

1. Summary of the Eight Leader Behaviours in the 1996 Path-Goal Theory of Work Unit Leadership.
2. Table of Leader Behaviours.

ENCLOSURE 1

THE REFORMULATED 1996 PATH-GOAL THEORY OF WORK UNIT LEADERSHIP

The theory specifies eight leader behaviours that are theoretically acceptable, satisfying, facilitative and motivational for subordinates. The following behaviours are summarised:

PATH-GOAL CLARIFYING BEHAVIOUR

This behaviour is capable of making subordinates' needs and preferences contingent on effective performance by:

- Clarifying the subordinates' performance goals.
- Clarifying the means by which subordinates can effectively carry out tasks.
- Clarifying the standards by which subordinates' performance will be judged.
- The judicious use of rewards and punishment, contingent on performance.

ACHIEVEMENT-ORIENTED LEADER BEHAVIOUR

This behaviour stresses pride in the subordinates' work and self-evaluation, based on personal accomplishment.

SUPPORTIVE LEADER BEHAVIOUR

This behaviour provides psychological support for subordinates. Such behaviour is especially needed under conditions in which tasks or relationships are psychologically or physically distressing. Supportive relationships increase the quality of relationships between superiors and subordinates and decrease subordinate stress.

WORK FACILITATION

This behaviour facilitates work by:

- Personally co-ordinating the work of subordinates.
- Providing mentoring, developmental experiences, guidance, coaching, counselling and feedback to assist subordinates in developing the knowledge and skills required to meet expectancies and performance standards.
- Reducing the obstacles to effective performance (by subordinates) by eliminating roadblocks, bottlenecks, and providing resources.
- Authorising subordinates to take actions and make decisions necessary to perform effectively.

INTERACTION FACILITATION

This behaviour facilitates collaboration and provides positive interaction, involving:

- Resolving disputes.
- Facilitating communication.
- Giving the minority a chance to be heard.

- Emphasising the importance of teamwork.
- Encouraging close and satisfying relationships among members.

GROUP-ORIENTED DECISION PROCESS

This behaviour concerns the manner by which decisions that affect the group are made. For example, the effectiveness of decisions are determined by the degree to which decisions meet physical and economic requirements (referred to as decision quality) and the degree to which decisions are acceptable to individuals who influence the implementation of decisions.

REPRESENTATION AND NETWORKING

This behaviour includes presentation of the group in a favourable manner, and communicating the importance of its work to other members of the organisation of which the group is a part. Therefore, effective networking of work unit leaders enhances such representation.

VALUE-BASED LEADER BEHAVIOUR

This behaviour helps subordinates identify (and meet with) organisational goals by: appealing to subordinates' cherished values and non-conscious motives; and engaging their (subordinates) self-perceived identities, their self-efficacy and sense of consistency.

ENCLOSURE 2

NOTES:

1. Can you please annotate in the following table, by placing an 'x', which four leader behaviours, in your opinion, are most relevant to Engineer Officers in the Royal Air Force today. (NB Please only 'x' four of the eight behaviours).
2. There is no requirement for you to complete personal details; the questionnaire is strictly confidential and the researcher guarantees that all information will be analysed based on strict confidence

LEADER BEHAVIOUR	
1. PATH-GOAL CLARIFYING BEHAVIOUR	
2. ACHIEVEMENT ORIENTED LEADER BEHAVIOUR	
3. SUPPORTIVE LEADER BEHAVIOUR	
4. WORK FACILITATION	
5. INTERACTION FACILITATION	
6. GROUP ORIENTED DECISION PROCESS	
7. REPRESENTATION AND NETWORKING	
8. VALUE BASED LEADER BEHAVIOUR	

RANK.....

D. LEADER BEHAVIOUR QUESTIONNAIRE ONE: ADDITIONAL DATA

			PATH-GOAL		Total
			No	Yes	
	AVM	Count	2	5	7
		% within rank	28.6%	71.4%	100.0%
		% within Path-Goal	6.9%	9.6%	8.6%
		% of Total	2.5%	6.2%	8.6%
	Air Cdre	Count	8	4	12
		% within rank	66.7%	33.3%	100.0%
		% within Path-Goal	27.6%	7.7%	14.8%
		% of Total	9.9%	4.9%	14.8%
	Gp Capt	Count	19	43	62
		% within rank	30.6%	69.4%	100.0%
		% within Path-Goal	65.5%	82.7%	76.5%
		% of Total	23.5%	53.1%	76.5%
Total	Count	29	52	81	
	% within rank	35.8%	64.2%	100.0%	
	% within Path-Goal	100.0%	100.0%	100.0%	
	% of Total	35.8%	64.2%	100.0%	

Table D-1: Cross-Tabulation of Rank versus Path-Goal

			Achievement		Total
			No	Yes	
	AVM	Count	5	2	7
		% within rank	71.4%	28.6%	100.0%
		% within Achievement	12.5%	4.9%	8.6%
		% of Total	6.2%	2.5%	8.6%
	Air Cdre	Count	4	8	12
		% within rank	33.3%	66.7%	100.0%
		% within Achievement	10.0%	19.5%	14.8%
		% of Total	4.9%	9.9%	14.8%
	Gp Capt	Count	31	31	62
		% within rank	50.0%	50.0%	100.0%
		% within Achievement	77.5%	75.6%	76.5%
		% of Total	38.3%	38.3%	76.5%
Total	Count	40	41	81	
	% within rank	49.4%	50.6%	100.0%	
	% within Achievement	100.0%	100.0%	100.0%	
	% of Total	49.4%	50.6%	100.0%	

Table D-2: Cross-Tabulation of Rank versus Achievement

			SUPPORT		Total
			No	Yes	
	AVM	Count	5	2	7
		% within rank	71.4%	28.6%	100.0%
		% within Support	20.8%	3.5%	8.6%
		% of Total	6.2%	2.5%	8.6%
	Air Cdre	Count	3	9	12
		% within rank	25.07%	75.0%	100.0%
		% within Support	12.5%	15.8%	14.8%
		% of Total	3.7%	11.1%	14.8%
	Gp Capt	Count	16	46	62
		% within rank	25.8%	74.2%	100.0%
		% within Support	66.7%	80.7%	76.5%
		% of Total	19.8%	56.8%	76.5%
Total	Count	24	57	81	
	% within rank	29.6%	70.4%	100.0%	
	% within Support	100.0%	100.0%	100.0%	
	% of Total	29.6%	70.4%	100.0%	

Table D-3: Cross-Tabulation of Rank versus Support

			WORK FACILITATION		Total
			No	Yes	
	AVM	Count	1	6	7
		% within rank	14.3%	85.7%	100.0%
		% within Work Facilitation	2.9%	12.8%	8.6%
		% of Total	1.2%	7.4%	8.6%
	Air Cdre	Count	8	4	12
		% within rank	66.7%	33.3%	100.0%
		% within Work Facilitation	23.5%	8.5%	14.8%
		% of Total	9.9%	4.9%	14.8%
	Gp Capt	Count	25	37	62
		% within rank	40.3%	59.7%	100.0%
		% within Work Facilitation	73.5%	78.7%	76.5%
		% of Total	30.9%	45.7%	76.5%
Total	Count	34	47	81	
	% within rank	42.0%	58.0%	100.0%	
	% within Work Facilitation	100.0%	100.0%	100.0%	
	% of Total	42.0%	58.0%	100.0%	

Table D-4: Cross-Tabulation of Rank versus Facilitation

			INTERACTIVE FACILITATION		Total
			No	Yes	
	AVM	Count	3	4	7
		% within rank	42.9%	51.7%	100.0%
		% within Interactive Facilitation	9.7%	8.0%	8.6%
		% of Total	3.7%	4.9%	8.6%
	Air Cdre	Count	3	9	12
		% within rank	25.0%	75.0%	100.0%
		% within Interactive Facilitation	9.7%	18.0%	14.8%
		% of Total	3.7%	11.1%	14.8%
	Gp Capt	Count	25	37	62
		% within rank	40.3%	59.7%	100.0%
		% within Interactive Facilitation	80.6%	74.0%	76.5%
		% of Total	30.9%	45.7%	76.5%
Total	Count	31	50	81	
	% within rank	38.3%	61.7%	100.0%	
	% within Interactive Facilitation	100.0%	100.0%	100.0%	
	% of Total	38.3%	61.7%	100.0%	

Table D-5: Cross-Tabulation of Rank versus Interactive Facilitation

			GROUP		Total
			No	Yes	
	AVM	Count	5	2	7
		% within rank	71.4%	28.6%	100.0%
		% within Group	7.0%	20.0%	8.6%
		% of Total	6.2%	2.5%	8.6%
	Air Cdre	Count	11	1	12
		% within rank	91.7%	8.3%	100.0%
		% within Group	15.5%	10.0%	14.8%
		% of Total	13.6%	1.2%	14.8%
	Gp Capt	Count	55	7	62
		% within rank	88.7%	11.3%	100.0%
		% within Group	77.5%	70.0%	76.5%
		% of Total	67.9%	8.6%	76.5%
Total	Count	71	10	81	
	% within rank	87.7%	12.3%	100.0%	
	% within Group	100.0%	100.0%	100.0%	
	% of Total	87.7%	12.3.2%	100.0%	

Table D-6: Cross-Tabulation of Rank versus Group

			REPRESENTATION AND NETWORKING		Total
			No	Yes	
	AVM	Count	5	2	7
		% within rank	71.4%	28.6%	100.0%
		% within Representation and Networking	11.1%	5.6%	8.6%
		% of Total	6.2%	2.5%	8.6%
	Air Cdre	Count	5	7	12
		% within rank	41.7%	58.3%	100.0%
		% within Representation and Networking	11.1%	19.4%	14.8%
		% of Total	6.2%	8.6%	14.8%
	Gp Capt	Count	35	27	62
		% within rank	56.5%	43.5%	100.0%
		% within Representation and Networking	77.8%	75.0%	76.5%
		% of Total	43.2%	33.3%	76.5%
Total	Count	45	36	81	
	% within rank	55.6%	44.4%	100.0%	
	% within Representation and Networking	100.0%	100.0%	100.0%	
	% of Total	55.6%	44.4%	100.0%	

Table D-7: Cross-Tabulation of Rank versus Representation and Networking

			VALUE		Total
			No	Yes	
	AVM	Count	2	5	7
		% within rank	28.6%	71.4%	100.0%
		% within Value	3.9%	16.7%	8.6%
		% of Total	2.5%	6.2%	8.6%
	Air Cdre	Count	7	5	12
		% within rank	58.3%	41.7%	100.0%
		% within Value	13.7%	16.7%	14.8%
		% of Total	8.6%	6.2%	14.8%
	Gp Capt	Count	42	20	62
		% within rank	67.7%	32.3%	100.0%
		% within Value	82.4%	66.7%	76.5%
		% of Total	51.9%	24.7%	76.5%
Total	Count	51	30	81	
	% within rank	63.0%	37.0%	100.0%	
	% within Value	100.0%	100.0%	100.0%	
	% of Total	63.0%	37.0%	100.0%	

Table D-8: Cross-Tabulation of Rank versus Value

E. TASK DEMAND QUESTIONNAIRE ONE: LETTER OF REQUEST



Royal Air Force Boulmer
ALNWICK
Northumberland
NE66 3JF

Military Network: 95818-7405
British Telecom: (01665) 607405



Dear Colleague

30 June 2004

LEADERSHIP RESEARCH: ROYAL AIR FORCE ENGINEERS

May I firstly introduce myself: at present, I am the Station Training and Development Officer at Royal Air Force Boulmer. Before this current post, I was a Weapon System Officer for 16 years and undertook tours on the Nimrod MR2, the Nimrod MR1 and the Dominie aircraft.

I hope, with your assistance, to undertake leadership research with Royal Air Force Engineers. In the Royal Air Force today, leadership is taught by identifying task needs and then applying appropriate leadership styles to these 'needs'. To help with this work, I have entered into a major research project with the Defence College of Aeronautical Engineering (Cranwell) and the Engineer Branch Sponsor at Headquarters Strike Command.

Over the next 6 months, data will be analyzed from 400 engineers (SNCOs, Junior Officers and Senior Officers) via a questionnaire. The questionnaire is very simple and is attached to this letter: it should take no more than 20 minutes to complete. The same questionnaire will be used for all 400 participants and, importantly, strict confidentiality will be adhered to throughout: **there is no requirement for names or other personal details.**

Once this material is analysed fully, it is hoped to use this data to inform both Defence College of Aeronautical Engineering (Cranwell) and the Engineer Branch Sponsor of appropriate leadership styles to help with the further development of engineer training in the Service.

May I please have your responses (in the pre-addressed envelope) by 31 Jul 04.

Thank you for your help and support.



INVESTOR IN PEOPLE

QUESTIONNAIRE

THIS QUESTIONNAIRE IS IN 3 PARTS:

PART ONE

In the Royal Air Force today, leadership is taught by identifying task demands, and then applying appropriate leadership styles to these demands. For example: a task demand may be completing a project on time, the maintenance of morale, or the motivation of individual team members.

In Table 1.0 below, can you please list 3 task demands that you are currently dealing with.

TASK
1
2
3

Table 1.0: Task Demands

PART TWO

Can you please annotate with an **X**, your generic rank as appropriate:

SNCO	
Junior Officer	
Senior Officer	

PART THREE

Can you please annotate with an **X**, your general work environment:

Main Operating Base	
Integrated Project Team.	
Training Environment.	
Headquarters	

THANK YOU FOR YOUR HELP

ANNEX F. TASK DEMAND QUESTIONNAIRE: ADDITIONAL DATA

SENIOR OFFICER	MAIN OPERATING BASE	INTEGRATED PROJECT TEAM	TRAINING ENVIRONMENT	HEADQUARTERS
	Preparing Ac Squadron Management Career Guidance Maintenance Welfare Welfare E2E E2E Personnel Management Re-structuring Training Discipline	General Management Developing new procedures Career Guidance Engineering Matters Change Management Welfare Staff work Morale Personnel Management E2E Teambuilding Discipline	Introduction of new training Teambuilding events Career Guidance General Management PD/Career Guidance Welfare Re-structuring Re-structuring Personnel Management Appraisals Morale Discipline	E2E Change Management Career Guidance Staff work Manpower Issues Welfare Re-structuring Planning Personnel Management Planning Introducing new procedures Discipline

Table F-1: Task Demands in Senior Officers: Comparisons by Functional Area

	MAIN OPERATING BASE	INTEGRATED PROJECT TEAM	TRAINING ENVIRONMENT	HEADQUARTERS
JUNIOR OFFICER	General Management Welfare/discipline Standards Engineering Matters Teambuilding events Welfare Re-organizing/re-structuring Team Management Training Cost savings/efficiency Re-organizing/re-structuring Discipline	Technical Engineering Motivation Management of Staff Industry Liaison Team Management Welfare E2E/Cost Savings Meetings Personal Development of Staff Management Information Systems Communication Motivation	Introduction of Training Syllabus Teambuilding Events Welfare General Management Morale/Welfare Discipline Motivation Mentoring Manpower Issues Personal Development of Staff Manning Levels Personal Development of Staff	Manpower Issues Motivation Counselling Multi-skilling Issues Manning Levels Welfare Policy Issues Deployment Planning Discipline Arranging Meetings Teambuilding Personal Development of Staff

Table F-2: Task Demands in Junior Officers: Comparisons by Functional Area

	MAIN OPERATING BASE	INTEGRATED PROJECT TEAM	TRAINING ENVIRONMENT	HEADQUARTERS
SNCO	General Engineering Morale Physical Fitness Levels Standards Welfare Training of Staff General Management Training of Staff Morale Re-organizing/re-structuring Standards/ Discipline	General Management Welfare/discipline Standards Engineering Matters Teambuilding events Re-organizing/re-structuring Team Management Training Man Management Welfare Re-organizing Personal Development of Staff Discipline	General Management Welfare/discipline Standards Man Management Re-organizing Personal Development of Staff Team Management Training Cost savings/efficiency Re-organizing/re-structuring	Training of Staff Arranging Sport Discipline Personal Development of Staff Man Management Welfare Re-organizing Personal Development of Staff Deployment Planning

Table F-3: Task Demands in SNCOs: Comparisons by Functional Area

G. TASK DEMAND QUESTIONNAIRE TWO: LETTER OF REQUEST



Royal Air Force Boulmer
ALNWICK
Northumberland
NE66 3JF

Military Network: 95818-7405
British Telecom: (01665) 607405



Dear Colleague

10 November 2004

RESEARCH WITH ROYAL AIR FORCE ENGINEERS

May I firstly introduce myself: at present, I am the Station Training and Development Officer at RAF Boulmer. Over the last 6 months, I have been working closely with the Defence College of Aeronautical Engineering at the Royal Air Force College Cranwell and Headquarters Strike Command. During this time, I have analysed information from over 400 Engineers from Main Operating Bases, Integrated Project Teams, Training Units and Headquarters Environments.

This research has revealed that the principal tasks faced by Engineers in the Royal Air Force today can be grouped around 4 main themes:

- The management of change: for example, introducing new procedures and practices.
- Introduction of associated training programmes: for example Trade Group 4 training.
- Welfare/discipline/morale issues: for example, improving motivation of Service personnel.
- Career guidance/personal development of subordinates: for example, making sure that people's career aspirations are met.

To continue with this research, your help would be greatly appreciated to analyse these themes in greater depth, via a questionnaire. The questionnaire is very simple and is attached to this letter: it should take no more than 20 minutes to complete. The same questionnaire will be used for all participants and, importantly, strict confidentiality will be adhered to throughout - **there is no requirement for names or other personal details.**

Once this material is analysed fully, it is hoped to use this data to inform both Defence College of Aeronautical Engineering at The Royal Air Force College Cranwell and Headquarters Strike Command of tasks faced by Engineers in the Royal Air Force. In this way, engineer training in the Service may be developed further.

May I please have your responses (in the pre-addressed envelope) by 30 Nov 04. Thank you for your help and support.



INVESTOR IN PEOPLE

QUESTIONNAIRE

On the following pages, the four principal tasks faced by Royal Air Force Engineers are shown: the management of change; introduction of associated training programmes; welfare/discipline/morale issues; and career guidance/personal development of subordinates.

Next to each task are 3 scales:

- Simple versus Complex
- Routine versus Challenging
- Varied versus Repetitive

Can you please place an **X** in each 'scale box' that best describes each task.

For example, for the task of *The Management of Change*, you may describe this task as shown below.

EXAMPLE

The Management of Change is:

a. *Simple or Complex:*

<i>Simple</i>				<i>Complex</i>		
1	2	3	4	5	6	7
				X		

b. *Routine or Challenging:*

<i>Routine</i>					<i>Challenging</i>	
1	2	3	4	5	6	7
					X	

c. *Varied or Repetitive:*

<i>Varied</i>				<i>Repetitive</i>		
1	2	3	4	5	6	7
	X					

THE MANAGEMENT OF CHANGE

The Management of Change is:

a. Simple or Complex:

Simple					Complex	
1	2	3	4	5	6	7

b. Routine or Challenging:

Routine					Challenging	
1	2	3	4	5	6	7

c. Varied or Repetitive:

Varied					Repetitive	
1	2	3	4	5	6	7

TRAINING PROGRAMMES

Introducing Training Programmes are:

a. Simple or Complex:

Simple					Complex	
1	2	3	4	5	6	7

b. Routine or Challenging:

Routine					Challenging	
1	2	3	4	5	6	7

c. Varied or Repetitive:

Varied					Repetitive	
1	2	3	4	5	6	7

WELFARE/DISCIPLINE/MORALE

Welfare/Discipline/Morale issues are:

- a. Simple or Complex:

Simple					Complex	
1	2	3	4	5	6	7

- b. Routine or Challenging:

Routine					Challenging	
1	2	3	4	5	6	7

- c. Varied or Repetitive:

Varied					Repetitive	
1	2	3	4	5	6	7

CAREER GUIDANCE/PERSONAL DEVELOPMENT OF SUBORDINATES

Career Guidance/Personal Development of Subordinates Issues are:

- a. Simple or Complex:

Simple					Complex	
1	2	3	4	5	6	7

- b. Routine or Challenging:

Routine					Challenging	
1	2	3	4	5	6	7

- c. Varied or Repetitive:

Varied					Repetitive	
1	2	3	4	5	6	7

Finally, can you please annotate with an **X**, your generic rank as appropriate:

Senior Officer	
Junior Officer	
SNCO	
JNCO	
Airman/Airwomen	

THANK YOU FOR YOUR HELP

ANNEX H: TASK DEMAND QUESTIONNAIRE TWO: ADDITIONAL DATA

MANAGEMENT OF CHANGE

Rank * Simple Versus Complex Cross Tabulation

			Simple Versus Complex					Total
			2	3	4	5	6	
Rank	Officer	Count	3	0	7	14	11	35
		% within Rank	8.6%	.0%	20.0%	40.0%	31.4%	100.0%
		% within Simple Versus Complex	60.0%	.0%	28.0%	41.2%	61.1%	40.7%
		% of Total	3.5%	.0%	8.1%	16.3%	12.8%	40.7%
	SNCO	Count	2	4	18	20	7	51
		% within Rank	3.9%	7.8%	35.3%	39.2%	13.7%	100.0%
		% within Simple Versus Complex	40.0%	100.0%	72.0%	58.8%	38.9%	59.3%
		% of Total	2.3%	4.7%	20.9%	23.3%	8.1%	59.3%
Total	Count	5	4	25	34	18	86	
	% within Rank	5.8%	4.7%	29.1%	39.5%	20.9%	100.0%	
	% within Simple Versus Complex	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
	% of Total	5.8%	4.7%	29.1%	39.5%	20.9%	100.0%	

Table H-1: Simple Versus Complex

Rank * Routine versus Challenging Cross Tabulation

			Routine versus Challenging					Total	
			2	3	4	5	6		challenging
Rank	Officer	Count	3	3	11	10	4	4	35
		% within Rank	8.6%	8.6%	31.4%	28.6%	11.4%	11.4%	100.0%
		% within Routine versus Challenging	50.0%	42.9%	33.3%	45.5%	30.8%	80.0%	40.7%
		% of Total	3.5%	3.5%	12.8%	11.6%	4.7%	4.7%	40.7%
	SNCO	Count	3	4	22	12	9	1	51
		% within Rank	5.9%	7.8%	43.1%	23.5%	17.6%	2.0%	100.0%
		% within Routine versus Challenging	50.0%	57.1%	66.7%	54.5%	69.2%	20.0%	59.3%
		% of Total	3.5%	4.7%	25.6%	14.0%	10.5%	1.2%	59.3%
Total	Count	6	7	33	22	13	5	86	
	% within Rank	7.0%	8.1%	38.4%	25.6%	15.1%	5.8%	100.0%	
	% within Routine versus Challenging	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
	% of Total	7.0%	8.1%	38.4%	25.6%	15.1%	5.8%	100.0%	

Table H-2: Routine Versus Challenging

Rank * Varied versus Repetitive Cross Tabulation

			Varied versus Repetitive						Total
			varied	2	3	4	5	6	
Rank	Officer	Count	2	11	6	10	1	5	35
		% within Rank	5.7%	31.4%	17.1%	28.6%	2.9%	14.3%	100.0%
		% within Varied versus Repetitive	100.0%	57.9%	37.5%	26.3%	20.0%	83.3%	40.7%
		% of Total	2.3%	12.8%	7.0%	11.6%	1.2%	5.8%	40.7%
	SNCO	Count	0	8	10	28	4	1	51
		% within Rank	.0%	15.7%	19.6%	54.9%	7.8%	2.0%	100.0%
		% within Varied versus Repetitive	.0%	42.1%	62.5%	73.7%	80.0%	16.7%	59.3%
		% of Total	.0%	9.3%	11.6%	32.6%	4.7%	1.2%	59.3%
Total	Count	2	19	16	38	5	6	86	
	% within Rank	2.3%	22.1%	18.6%	44.2%	5.8%	7.0%	100.0%	
	% within Varied versus Repetitive	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
	% of Total	2.3%	22.1%	18.6%	44.2%	5.8%	7.0%	100.0%	

Table H-3: Varied Versus Repetitive

INTRODUCTION OF TRAINING PROGRAMMES

Rank * Simple Versus Complex Cross Tabulation

			Simple Versus Complex					complex	Total
			2	3	4	5	6		
Rank	Officer	Count	2	4	10	14	4	1	35
		% within Rank	5.7%	11.4%	28.6%	40.0%	11.4%	2.9%	100.0%
		% within Simple Versus Complex	40.0%	28.6%	32.3%	56.0%	40.0%	100.0%	40.7%
		% of Total	2.3%	4.7%	11.6%	16.3%	4.7%	1.2%	40.7%
	SNCO	Count	3	10	21	11	6	0	51
		% within Rank	5.9%	19.6%	41.2%	21.6%	11.8%	.0%	100.0%
		% within Simple Versus Complex	60.0%	71.4%	67.7%	44.0%	60.0%	.0%	59.3%
		% of Total	3.5%	11.6%	24.4%	12.8%	7.0%	.0%	59.3%
Total	Count	5	14	31	25	10	1	86	
	% within Rank	5.8%	16.3%	36.0%	29.1%	11.6%	1.2%	100.0%	
	% within Simple Versus Complex	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
	% of Total	5.8%	16.3%	36.0%	29.1%	11.6%	1.2%	100.0%	

Table H-4: Simple Versus Complex

Rank * Routine versus Challenging Cross Tabulation

			Routine versus Challenging					challenging	Total
			2	3	4	5	6		
Rank	Officer	Count	3	6	12	8	3	3	35
		% within Rank	8.6%	17.1%	34.3%	22.9%	8.6%	8.6%	100.0%
		% within Routine versus Challenging	27.3%	50.0%	35.3%	40.0%	50.0%	100.0%	40.7%
		% of Total	3.5%	7.0%	14.0%	9.3%	3.5%	3.5%	40.7%
	SNCO	Count	8	6	22	12	3	0	51
		% within Rank	15.7%	11.8%	43.1%	23.5%	5.9%	.0%	100.0%
		% within Routine versus Challenging	72.7%	50.0%	64.7%	60.0%	50.0%	.0%	59.3%
		% of Total	9.3%	7.0%	25.6%	14.0%	3.5%	.0%	59.3%
Total	Count	11	12	34	20	6	3	86	
	% within Rank	12.8%	14.0%	39.5%	23.3%	7.0%	3.5%	100.0%	
	% within Routine versus Challenging	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
	% of Total	12.8%	14.0%	39.5%	23.3%	7.0%	3.5%	100.0%	

Table H-5: Routine Versus Challenging

Rank * Varied versus Repetitive Cross Tabulation

			Varied versus Repetitive						Total	
			Varied	2	3	4	5	6		repetitive
Rank	Officer	Count	2	6	4	12	7	3	1	35
		% within Rank	5.7%	17.1%	11.4%	34.3%	20.0%	8.6%	2.9%	100.0%
		% within Varied versus Repetitive	66.7%	46.2%	23.5%	41.4%	43.8%	42.9%	100.0%	40.7%
		% of Total	2.3%	7.0%	4.7%	14.0%	8.1%	3.5%	1.2%	40.7%
	SNCO	Count	1	7	13	17	9	4	0	51
		% within Rank	2.0%	13.7%	25.5%	33.3%	17.6%	7.8%	.0%	100.0%
		% within Varied versus Repetitive	33.3%	53.8%	76.5%	58.6%	56.3%	57.1%	.0%	59.3%
		% of Total	1.2%	8.1%	15.1%	19.8%	10.5%	4.7%	.0%	59.3%
Total	Count	3	13	17	29	16	7	1	86	
	% within Rank	3.5%	15.1%	19.8%	33.7%	18.6%	8.1%	1.2%	100.0%	
	% within Varied versus Repetitive	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
	% of Total	3.5%	15.1%	19.8%	33.7%	18.6%	8.1%	1.2%	100.0%	

Table H-6: Varied Versus Repetitive

WELFARE/DISCIPLINE/MORALE ISSUES

Rank * Simple Versus Complex Cross Tabulation

			Simple Versus Complex						Total	
			Simple	2	3	4	5	6		complex
Rank	Officer	Count	0	3	6	6	12	5	3	35
		% within Rank	.0%	8.6%	17.1%	17.1%	34.3%	14.3%	8.6%	100.0%
		% within Simple Versus Complex	.0%	60.0%	37.5%	35.3%	60.0%	27.8%	33.3%	40.7%
		% of Total	.0%	3.5%	7.0%	7.0%	14.0%	5.8%	3.5%	40.7%
	SNCO	Count	1	2	10	11	8	13	6	51
		% within Rank	2.0%	3.9%	19.6%	21.6%	15.7%	25.5%	11.8%	100.0%
		% within Simple Versus Complex	100.0%	40.0%	62.5%	64.7%	40.0%	72.2%	66.7%	59.3%
		% of Total	1.2%	2.3%	11.6%	12.8%	9.3%	15.1%	7.0%	59.3%
Total	Count	1	5	16	17	20	18	9	86	
	% within Rank	1.2%	5.8%	18.6%	19.8%	23.3%	20.9%	10.5%	100.0%	
	% within Simple Versus Complex	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
	% of Total	1.2%	5.8%	18.6%	19.8%	23.3%	20.9%	10.5%	100.0%	

Table H-7: Simple Versus Complex

Rank * Routine versus Challenging Cross Tabulation

			Routine versus Challenging						Total	
			Routine	2	3	4	5	6		challenging
Rank	Officer	Count	0	4	0	10	8	9	4	35
		% within Rank	.0%	11.4%	.0%	28.6%	22.9%	25.7%	11.4%	100.0%
		% within Routine versus Challenging	.0%	40.0%	.0%	45.5%	44.4%	50.0%	44.4%	40.7%
		% of Total	.0%	4.7%	.0%	11.6%	9.3%	10.5%	4.7%	40.7%
	SNCO	Count	5	6	4	12	10	9	5	51
		% within Rank	9.8%	11.8%	7.8%	23.5%	19.6%	17.6%	9.8%	100.0%
		% within Routine versus Challenging	100.0%	60.0%	100.0%	54.5%	55.6%	50.0%	55.6%	59.3%
		% of Total	5.8%	7.0%	4.7%	14.0%	11.6%	10.5%	5.8%	59.3%
Total	Count	5	10	4	22	18	18	9	86	
	% within Rank	5.8%	11.6%	4.7%	25.6%	20.9%	20.9%	10.5%	100.0%	
	% within Routine versus Challenging	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
	% of Total	5.8%	11.6%	4.7%	25.6%	20.9%	20.9%	10.5%	100.0%	

Table H-8: Routine Versus Challenging

Rank * Varied versus Repetitive Cross Tabulation

			Varied versus Repetitive						Total	
			Varied	2	3	4	5	6		repetitive
Rank	Officer	Count	3	15	7	3	4	2	1	35
		% within Rank	8.6%	42.9%	20.0%	8.6%	11.4%	5.7%	2.9%	100.0%
		% within Varied versus Repetitive	30.0%	57.7%	46.7%	17.6%	44.4%	33.3%	33.3%	40.7%
		% of Total	3.5%	17.4%	8.1%	3.5%	4.7%	2.3%	1.2%	40.7%
	SNCO	Count	7	11	8	14	5	4	2	51
		% within Rank	13.7%	21.6%	15.7%	27.5%	9.8%	7.8%	3.9%	100.0%
		% within Varied versus Repetitive	70.0%	42.3%	53.3%	82.4%	55.6%	66.7%	66.7%	59.3%
		% of Total	8.1%	12.8%	9.3%	16.3%	5.8%	4.7%	2.3%	59.3%
Total	Count	10	26	15	17	9	6	3	86	
	% within Rank	11.6%	30.2%	17.4%	19.8%	10.5%	7.0%	3.5%	100.0%	
	% within Varied versus Repetitive	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
	% of Total	11.6%	30.2%	17.4%	19.8%	10.5%	7.0%	3.5%	100.0%	

Table H-9: Varied Versus Repetitive

PERSONAL DEVELOPMENT/CAREER GUIDANCE OF SUBORDINATES

Rank * Simple Versus Complex Cross Tabulation

			Simple Versus Complex							Total
			Simple	2	3	4	5	6	complex	
Rank	Officer	Count	0	2	3	6	12	11	1	35
		% within Rank	.0%	5.7%	8.6%	17.1%	34.3%	31.4%	2.9%	100.0%
		% within Simple Versus Complex	.0%	33.3%	18.8%	31.6%	57.1%	55.0%	33.3%	40.7%
		% of Total	.0%	2.3%	3.5%	7.0%	14.0%	12.8%	1.2%	40.7%
	SNCO	Count	1	4	13	13	9	9	2	51
		% within Rank	2.0%	7.8%	25.5%	25.5%	17.6%	17.6%	3.9%	100.0%
		% within Simple Versus Complex	100.0%	66.7%	81.3%	68.4%	42.9%	45.0%	66.7%	59.3%
		% of Total	1.2%	4.7%	15.1%	15.1%	10.5%	10.5%	2.3%	59.3%
Total	Count	1	6	16	19	21	20	3	86	
	% within Rank	1.2%	7.0%	18.6%	22.1%	24.4%	23.3%	3.5%	100.0%	
	% within Simple Versus Complex	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
	% of Total	1.2%	7.0%	18.6%	22.1%	24.4%	23.3%	3.5%	100.0%	

Table H-10: Simple Versus Complex

Rank * Routine versus Challenging Cross Tabulation

			Routine versus Challenging						Total	
			Routine	2	3	4	5	6		challenging
Rank	Officer	Count	0	2	3	14	9	5	2	35
		% within Rank	.0%	5.7%	8.6%	40.0%	25.7%	14.3%	5.7%	100.0%
		% within Routine versus Challenging	.0%	100.0%	25.0%	46.7%	45.0%	29.4%	50.0%	40.7%
		% of Total	.0%	2.3%	3.5%	16.3%	10.5%	5.8%	2.3%	40.7%
	SNCO	Count	1	0	9	16	11	12	2	51
		% within Rank	2.0%	.0%	17.6%	31.4%	21.6%	23.5%	3.9%	100.0%
		% within Routine versus Challenging	100.0%	.0%	75.0%	53.3%	55.0%	70.6%	50.0%	59.3%
		% of Total	1.2%	.0%	10.5%	18.6%	12.8%	14.0%	2.3%	59.3%
Total	Count	1	2	12	30	20	17	4	86	
	% within Rank	1.2%	2.3%	14.0%	34.9%	23.3%	19.8%	4.7%	100.0%	
	% within Routine versus Challenging	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
	% of Total	1.2%	2.3%	14.0%	34.9%	23.3%	19.8%	4.7%	100.0%	

Table H-11: Routine Versus Challenging

Rank * Varied versus Repetitive CrossTabulation

			Varied versus Repetitive						Total	
			Varied	2	3	4	5	6		challenging
Rank	Officer	Count	0	7	12	4	10	2	0	35
		% within Rank	.0%	20.0%	34.3%	11.4%	28.6%	5.7%	.0%	100.0%
		% within Varied versus Repetitive	.0%	43.8%	46.2%	26.7%	55.6%	33.3%	.0%	40.7%
		% of Total	.0%	8.1%	14.0%	4.7%	11.6%	2.3%	.0%	40.7%
	SNCO	Count	4	9	14	11	8	4	1	51
		% within Rank	7.8%	17.6%	27.5%	21.6%	15.7%	7.8%	2.0%	100.0%
		% within Varied versus Repetitive	100.0%	56.3%	53.8%	73.3%	44.4%	66.7%	100.0%	59.3%
		% of Total	4.7%	10.5%	16.3%	12.8%	9.3%	4.7%	1.2%	59.3%
Total	Count	4	16	26	15	18	6	1	86	
	% within Rank	4.7%	18.6%	30.2%	17.4%	20.9%	7.0%	1.2%	100.0%	
	% within Varied versus Repetitive	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
	% of Total	4.7%	18.6%	30.2%	17.4%	20.9%	7.0%	1.2%	100.0%	

Table H-12: Varied Versus Repetitive

ANNEX I: SUMMARY DATA ABOUT AVERAGE RANKS FOR TWO GROUPS

Ranks				
	Rank	N	Mean Rank	Sum of Ranks
Simple Versus Complex	Officer	35	49.61	1736.50
	SNCO	51	39.30	2004.50
	Total	76		
Routine versus Challenging	Officer	35	45.19	1571.50
	SNCO	51	42.34	2159.50
	Total	76		
Varied versus Repetitive	Officer	35	39.21	1372.50
	SNCO	51	46.44	2367.50
	Total	76		
Simple Versus Complex	Officer	35	47.46	1696.00
	SNCO	51	40.10	2045.00
	Total	76		
Routine versus Challenging	Officer	35	47.01	1645.50
	SNCO	51	41.09	2095.50
	Total	76		
Varied versus Repetitive	Officer	35	44.73	1565.50
	SNCO	51	42.66	2175.50
	Total	76		
Simple Versus Complex	Officer	35	41.93	1467.50
	SNCO	51	44.57	2273.50
	Total	76		
Routine versus Challenging	Officer	35	47.44	1695.50
	SNCO	51	40.11	2045.50
	Total	76		
Varied versus Repetitive	Officer	35	39.76	1395.00
	SNCO	51	46.00	2346.00
	Total	76		
Simple Versus Complex	Officer	35	50.94	1773.00
	SNCO	51	37.39	1957.00
	Total	76		
Routine versus Challenging	Officer	35	42.73	1499.00
	SNCO	51	43.96	2242.00
	Total	76		
Varied versus Repetitive	Officer	35	45.01	1575.50
	SNCO	51	42.46	2165.50
	Total	76		

ANNEX J: LEADER BEHAVIOUR QUESTIONNAIRE TWO AND TASK DEMAND QUESTIONNAIRE THREE



Royal Air Force Boulmer
ALNWICK
Northumberland
NE66 3JF

Military Network: 95818-7405
British Telecom: (01665) 607405



Dear Colleague

30 March 2005

LEADERSHIP RESEARCH IN THE ROYAL AIR FORCE

May I firstly introduce myself: at present, I am the Training and Development Officer at Royal Air Force Boulmer. Over the last three years, I have been undertaking a part-time, off campus PhD in the field of Leadership at the University of Edinburgh.

I am very interested in the behaviours of leaders and how these behaviours affect the satisfaction of their subordinates and resultantly, the performance of the subordinates' work unit.

To determine this relationship (if any between leader behaviour and subordinate satisfaction and performance), I would like to ask engineers to help with this research. The research methodology involves asking personnel (Squadron Leaders and below) at Strike Command Main Operating Bases to complete two questionnaires. These two questionnaires are enclosed with this letter:

- Questionnaire A is for completion by all those personnel of the rank/grade of Flight Lieutenant and below.
- Questionnaire B is for completion by those personnel of Squadron Leader rank.

These two questionnaires are very simple and should take no more than 10 minutes to complete. The same questionnaire will be used for all participants and, importantly, strict confidentiality will be adhered to throughout - **there is no requirement for names or other personal details**. Squadron Leader Richard Painter (SLTD1 at Training Group Defence Agency at Headquarters Personnel and Training Command) will be administering these questionnaires on my behalf. In this way, I will not know of the units that this material is being sent to.

Can I please ask that you complete Questionnaire B and distribute Questionnaire A to your staff. Can you please return Questionnaire B to Richard directly and ask that your staff send Questionnaire A direct to Richard, thereby ensuring further



INVESTOR IN PEOPLE

confidentiality. Richard will then forward the completed material to me.¹¹⁹ Finally, the output of this research will be to inform the ongoing work of the Royal Air Force Leadership Centre. In this way, it is hoped that leadership training in the Service may be developed and advanced further.

I thank you – in advance – for your help and support.

¹¹⁹ I am most willing to discuss this research with you at your convenience.

QUESTIONNAIRE A

TO BE COMPLETED BY FLIGHT LIEUTENANT RANKS

THIS QUESTIONNAIRE IS IN TWO PARTS

PART I

Published research has shown that the principal tasks faced by engineers in the Royal Air Force today, can be grouped around 4 main themes:

- The management of change: for example, introducing new procedures and practices.
- Introduction of associated training programmes: for example, introducing training for Trade Group 4.
- Welfare/discipline/morale issues: for example, improving the motivation of Service personnel.
- Career guidance/personal development of subordinates: for example, making sure that people's career aspirations are met.

In addition, completing these tasks (especially within time and money constraints) can be a source of considerable stress, anxiety and frustration.

It is, therefore, argued/hypothesized that 'appropriate' behaviours —by a leader — can alleviate this stress, anxiety and frustration. In Table One to this Questionnaire, 16 statements are made concerning leadership behaviour. Can you please indicate how you consider that these behaviours (by your superior) reduce stress, anxiety and frustration in your workplace, when completing the above tasks.

EXAMPLE:

If you **agree** that a leader who *provides psychological support for subordinates* will help reduce anxiety, stress and frustration in the management of change, the introduction of associated training programmes, welfare/discipline/morale issues, and the career guidance/personal development of subordinates, then you would complete Table 1.0 as follows:

THIS LEADER BEHAVIOUR WILL REDUCE ANXIETY/STRESS/FRUSTRATION	STRONGLY DISAGREE	DISAGREE	NEITHER DISAGREE/AGREE	AGREE	STRONGLY AGREE
Provides psychological support for subordinates.				X	

PART I

THIS LEADER BEHAVIOUR WILL REDUCE ANXIETY/STRESS/FRUSTRATION	STRONGLY DISAGREE	DISAGREE	NEITHER DISAGREE/AGREE	AGREE	STRONGLY AGREE
Provides psychological support for subordinates.					
Clarifies subordinates' performance goals.					
Resolves disputes.					
Co-ordinates the work of subordinates					
Increases quality of relationships between superiors and subordinates.					
Clarifies the means by which subordinates can effectively carry out tasks.					
Facilitates communication and teamwork between work unit members.					
Provides mentoring, developmental experiences, guidance, coaching, counselling and feedback to assist subordinates in developing the knowledge and skills required to meet expectancies and performance standards.					
Encourages subordinates to apply their intellect to the job in hand.					
Clarifies the standards by which subordinates' performance will be judged.					
Gives the minority a chance to be heard.					
Reduces obstacles to effective performance (by subordinates).					
Enhances leader subordinate relationship and self-confidence and compensating for unpleasant aspects of the work.					
Uses rewards and/or punishment, contingent on performance.					
Encourages close and satisfying relationships among team members.					
Empowers subordinates.					

TABLE 1.0: LEADER BEHAVIOURS

PART II:

Can you please rate your **overall satisfaction** in your current work unit at Table 2.0. When making your choice, can you please consider the following manifestations of 'satisfaction':

- The relationships between you and your superior.
- The communication and teamwork between you and work unit members.
- The professional relationships between you and work unit members.

VERY DISSATISFIED	DISSATISFIED	NEITHER DISSATISFIED/SATISFIED	SATISFIED	VERY SATISFIED

TABLE 2.0: SATISFACTION LEVELS

THANK YOU FOR TAKING TIME TO COMPLETE THIS QUESTIONNAIRE

QUESTIONNAIRE B

TO BE COMPLETED BY SQUADRON LEADER RANKS

At Questionnaire A, it was stated that the principal tasks faced by engineers in the Royal Air Force today, can be grouped around four main themes:

- The management of change: for example, introducing new procedures and practices.
- Introduction of associated training programmes: for example, introducing training for Trade Group 4.
- Welfare/discipline/morale issues: for example, improving the motivation of Service personnel.
- Career guidance/personal development of subordinates: for example, making sure that people's career aspirations are met.

Further researched analysed these themes in terms of their complexity, the challenge required to complete them, and the repetitiveness of these tasks.

From this research, it was established that:

- The most complex tasks were the management of change.
- The most challenging tasks were the career guidance/personal development of subordinates.
- The most repetitive tasks were welfare/discipline/morale issues.

In Tables 1.0 – 3.0 below, can you please describe how much you are engaged with the management of change, career guidance/personal development of subordinates, and welfare/discipline/morale issues.

EXAMPLE:

If you consider that you are **engaged** with the management of change, then you would complete Table 1.0 as follows:

TASK COMPLEXITY	STRONGLY DISENGAGED	DISENGAGED	NEITHER DISENGAGED/ENGAGED	ENGAGED	STRONGLY ENGAGED
The Management of Change				X	

TASK COMPLEXITY	STRONGLY DISENGAGED	DISENGAGED	NEITHER DISENGAGED/ENGAGED	ENGAGED	STRONGLY ENGAGED
The Management of Change					

TABLE 1.0: ENGAGEMENT WITH THE MANAGEMENT OF CHANGE

TASK COMPLEXITY	STRONGLY DISENGAGED	DISENGAGED	NEITHER DISENGAGED/ENGAGED	ENGAGED	STRONGLY ENGAGED
Career guidance/Personal development of subordinates					

TABLE 2.0: ENGAGEMENT WITH CAREER GUIDANCE/PERSONAL DEVELOPMENT OF SUBORDINATES

TASK COMPLEXITY	STRONGLY DISENGAGED	DISENGAGED	NEITHER DISENGAGED/ENGAGED	ENGAGED	STRONGLY ENGAGED
Welfare/discipline/morale issues					

TABLE 3.0: ENGAGEMENT WITH WELFARE/DISCIPLINE/MORALE ISSUES

THANK YOU FOR TAKING TIME TO COMPLETE THIS QUESTIONNAIRE

ANNEX K: THE UNIT PERFORMANCE QUESTIONNAIRE

PERFORMANCE

Performance is:

- a. Team Performance: 1 = Poor; 5 = Excellent

1	2	3	4	5

- b. Productivity: 1 = Poor; 5 = Excellent

1	2	3	4	5

- c. Contribution to Organisational Goals: 1 = Poor; 5 = Excellent

1	2	3	4	5

- d. Organisational Citizenship Behaviour: 1 = Poor; 5 = Excellent

1	2	3	4	5

PUBLISHED PAPERS AS PART OF RESEARCH

- Howieson, W. B. (2004). *Path-goal theory revisited: a quantitative evaluation (and structural equation modeling) of The '1996 path-goal theory of work unit leadership'*. Presented at British Academy of Management Annual Conference, St. Andrews, August
- Howieson, W. B. (2004). *The task demands facing military engineers: new perspectives on the situational moderator variable in leadership research*. In Leadership Refrains: Encounters, Conversations and Enhancements. (Eds: Williamson, D., Wood, M., Case, P., Bolden, R., Martuarno, A., & Gosling, J.) Studying Leadership: 3rd International Workshop, University of Exeter, 2004. ISBN: 0-9549155-0-X
- Howieson, W. B., & Kahn, K. (2005). *Leading Change in Complex Environments: The Skills Approach to Leadership*. In Re-Thinking Leadership. (Eds: Clarke, N., Fox, S., Gleeson, D., White, M. I., Leach, T., McGuire, K., Puwar, N., Smith, A., and Watland, P.) 1st Annual Conference on Leadership Research for the Learning and Skills Sector. Lancaster University, June. ISBN: 1-86220-167-6

PATH-GOAL THEORY REVISITED: A QUANTITATIVE EVALUATION (AND STRUCTURAL EQUATION MODELLING) OF THE '1996 PATH-GOAL THEORY OF WORK UNIT LEADERSHIP'¹²⁰

BRIAN HOWIESON¹²¹

ABSTRACT

Over 30 years have passed since Robert J. House published his classic article, *A Path-Goal Theory of Leader Effectiveness* in 'Administrative Science Quarterly' (1971). Based on the work of Georgopolous *et al* (1957) and the doctoral dissertation - and earlier work - of Evans (1968, 1970), House's path-goal conceptualization of leadership, used Vroom's (1964) *Expectancy Theory of Motivation* to identify the effects of leader behavior on subordinate outcome variables. House and Mitchell (1974) further advanced path-goal theory and for the next 30 years, it has remained as the premier theory of dyadic supervision in the field of leadership. In light of over 300 empirical tests, House (1996) reformulated path-goal theory to its extant state.

This paper reviews a major research project to evaluate (and model) this reformulated Path-Goal theory, *The 1996 Path-Goal Theory of Work Unit Leadership*, with Royal Air Force Engineers. In detail, this paper will introduce Path-Goal Theory, summarize the empirical evidence published prior to the introduction of the 1996 Theory, highlight the salient points from the 1996 Theory, and offer a methodology to re-examine this contingency theory of leadership. The paper will then summarize the initial findings of the Pilot Study and explain the next stage of the research project.

Finally, the author will suggest guidelines for managers, responsible for exercising leadership at the dyadic level.

¹²⁰ I offer my sincere gratitude to the author of this theory, Professor Bob House (Wharton School of Management, The University of Pennsylvania), for his direction and advice with this project.

¹²¹ The Management School, The University of Edinburgh, William Robertson Building, 50 George Square, EDINBURGH, EH8 95Y. E-mail: w.b.howieson@sms.ed.ac.uk; Tel: 44 (0) 131 650 3900.

INTRODUCTION

WHAT IS PATH-GOAL THEORY?

In its most succinct terms, the function of a leader – as explicated in path-goal theory – is: “To increase personal pay-offs to subordinates for work-goal attainment and make the path to these pay-offs easier to travel by clarifying, reducing road blocks and pitfalls, and increasing the opportunities for personal satisfaction en route” (House, 1971, p. 324). Thus, the effective leader is one who assists subordinates through paths, which ultimately lead to organisationally-desired and individually-valued outcomes. The need for such leadership is moderated by characteristics of the environment as well as by characteristics of the subordinates (House & Mitchell, 1974). Therefore, as Bass (1990, p. 627) notes: “The leader needs to complement only what is missing in a situation to enhance the subordinate’s motivation, satisfaction, and performance.”

THE PURPOSE OF THIS PAPER

After nearly 35 years of critical examination, path-goal theory still stands as the premier theory of dyadic supervision in the field of leadership.¹²² Every organizational behavior textbook reviews and illustrates it and presents examples of research based on it. Indeed, according to Social Sciences Citation Index, House (1971) has been cited over 300 times since it was published.

However, while there would be some comfort derived from being able to answer the question about the ascendancy of path-goal theory, by stating that researchers have substantiated the theory’s core truth claims consistently, the predominant opinion of reviewers is that the theory has not been tested adequately and cannot be assessed conclusively based on the research evidence (Miner, 1980; Bass, 1990; Wofford & Liska, 1993; and Yukl, 2002). Moreover, paraphrasing the words of Fred Fiedler (1977): “Path-goal theory is in grave danger of being prematurely buried (or, at the least, of being ignored and perhaps dying of malnutrition).” Scanning the scientific journals and empirical research on leadership, one cannot help but be struck by the lack of recent work on *The Path-Goal Theory of Leadership*. Indeed, very little (if any) research has been undertaken since the reformulated path-goal theory, *The 1996 Path-Goal Theory of Work Unit Leadership*, was published in ‘Leadership Quarterly’ in 1996.¹²³

The purpose of this paper then, is to re-visit path-goal theory and to offer an insight into a major research programme currently running to evaluate and model this theory, via structural equation modelling.

SCOPE OF THE PAPER

This paper will: précis path-goal theory; review the major research findings undertaken to test path-goal theory; summarize the 1996 Theory; detail a methodology to evaluate and

¹²² The dyadic approach to leadership focuses on the relationship between a leader and another individual, who is usually a follower.

¹²³ Personal correspondence with James G. (Jerry) Hunt, Editor-in-Chief – ‘Leadership Quarterly’.

model the 1996 Theory; reveal research findings (to date); and offer guidelines to managers responsible for exercising leadership at the dyadic level.

PATH-GOAL THEORY OF LEADERSHIP

THE SITUATIONAL APPROACH TO LEADERSHIP

Path-Goal theory is a contingency theory of leadership, which is derived, in part, from the 'situational approach' to leadership research.

The situation approach to leadership began to receive increased attention in leadership theory from the 1950s onwards. The situational approach was initially called *Zeitgeist* (a German word meaning 'spirit of the time'): in essence, the leader is viewed as a product of the time and the situation. Therefore, a person with the particular qualities or traits – that a situation requires – will emerge as the leader. In detail, the situational approach emphasizes the importance of contextual factors such as the nature of the work performed by the leader's unit, the nature of the external environment, and the characteristics of followers.¹²⁴ Situational leadership theory has two major subcategories:

- One line of research treats leader behaviour as the dependant variable, and researchers seek to discover how this behaviour is influenced by aspects of the situation, such as the type of organisation or leader position. The research investigates how leaders cope with demands and constraints from subordinates, peers, superiors, and outsiders. The primary research method is a comparative study of two or more situations. The dependent variables may be managerial perceptions and attitudes, managerial activities and behaviour patterns, or influence processes.
- The other subcategory of situational research attempts to identify aspects of the situation that moderate the relationship between leader behaviours (or traits) and leadership effectiveness. The assumption is that different behaviour patterns (or trait patterns) will be effective in different situations and that the same behaviour pattern (or trait pattern) is not optimal in all situations. Theories describing this relationship are called Contingency Theories of Leadership.

Although comparative research on the way leadership behaviour varies across situations provides some useful insights, it is only an indirect approach to discovering what type of leadership is optimal in a given situation. A more direct approach is to determine how leader or behaviours are related to indicators of leadership effectiveness in different situations. Aspects of the situation that enhance or nullify the effects of a leader's traits or behaviours are called 'situational moderator variables'. For ease of analysis, Figure 1.0 demonstrates the differences between moderator and intervening variables in the relationship between cause and effect.

¹²⁴ *Zeitgeist* probably fell out of favour because in the 1980s, management researchers became very interested in the emotional and symbolic aspects of leadership, which help us understand how leaders influence followers to make self-sacrifices and put the needs of the mission or organisation above their materialistic self-interests. The theories of charismatic and transformational leadership describe this important aspect of leadership. Path-goal theory, however, includes the highly interesting premise that there are situations where the behavioural roles of the formal leader are quite insignificant and its subtext aligns with the current zeitgeist of empowerment from below.

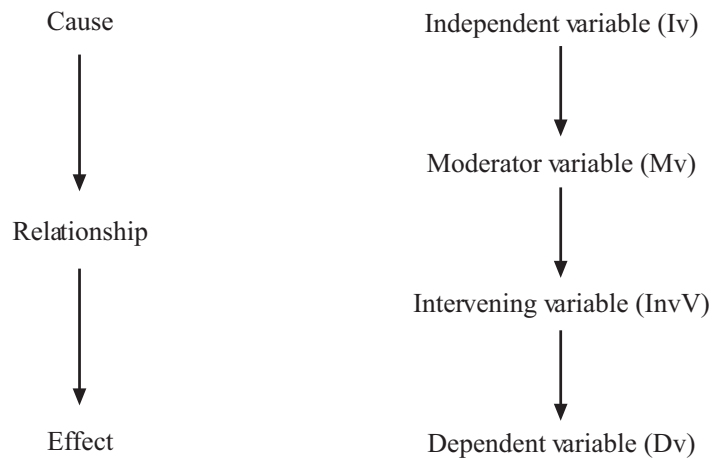


Figure 1.0: 'The Cause – Relationship – Effect' Process in Leadership Research

PATH-GOAL THEORY

The Path-Goal Theory of Leadership (House & Mitchell, 1974) is a widely recognized theoretical development from contingency approach to leadership research and is derived from the *Expectancy Framework of Motivation Theory*. Although Georgopoulos *et al* (1957) and his colleagues, at the University of Michigan's Institute of Social Research, used path-goal concepts and terminology many years ago (to analyse the impact of leadership on performance), the modern development of path-goal theory is usually attributed to Evans (1970), *The effects of supervisory behaviour on the path-goal relationship* and House (1971), *A path-goal theory of leader effectiveness*, who wrote separate papers on the subject. In essence, the path-goal theory attempts to explain the impact that leader behaviour has on subordinate motivation, performance and satisfaction. The reinforcement of change in the subordinate – by the leader – is a prominent aspect of path-goal theory. Initially, Georgopoulos *et al* (1957) and Evans (1970) suggested that the successful leader shows a follower the rewards (GOALS) that are available to him or her. The leader also shows the follower the behaviours (PATHS) through which the rewards may be obtained (House, 1971). The leader clarifies the goals of the followers, as well as the paths to those goals. This clarification enhances the psychological state of the followers and arouses them to increase their efforts to perform well. Thus, the followers achieve satisfaction from the job to be done. The leaders may enhance satisfaction with the work itself as well as provide valued extrinsic rewards, such as recommendations for pay increases that are contingent on the subordinates' performance.¹²⁵ Moreover, path-goal theory suggests that these various leadership behaviours can be and actually are used by the same leader in different situations.¹²⁶ Two of the situational factors that have been identified, are the personal characteristic of the subordinate and the environmental pressures and demands facing the subordinate. Therefore, by employing behaviour contingent on situational factors, the leader attempts to influence subordinates' perceptions and motivate them, which in turn leads to their role clarity, goal expectations, performance and satisfaction. In other words, by doing the preceding, the leader attempts to make the path to subordinates' goals as smooth as possible. But to accomplish this path-goal facilitation, the leader must use the

¹²⁵ However, the leader needs to be able to control the rewards that subordinates value.

¹²⁶ This is how it differs, in one respect, from Fielder's Contingency Model.

appropriate style contingent on the situational variables present. Figure 2.0 portrays a simple model of Path-Goal Theory.

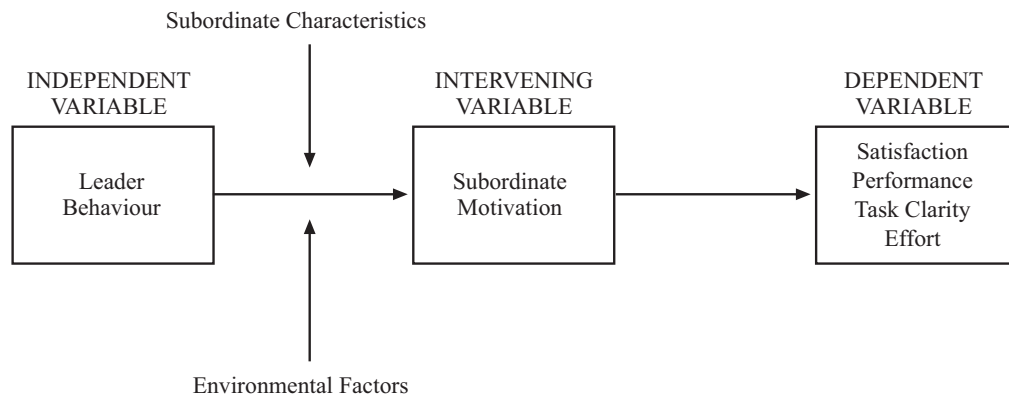


Figure 2.0: A Simple Model of Path-Goal Theory

House (1971) explained the effects of two specific kinds of leader behaviour on the satisfaction of subordinates, the subordinates' acceptance of the leader, the expectations of subordinates that effort will result in effective performance, and that effective performance is the path to rewards. These two behaviours are supportive leadership (similar to consideration) and directive leadership (similar to initiating structure). Although still in its infancy, House & Mitchell (1974) advanced further path-goal theory in their paper, *Path Goal Theory of Leadership*. Their main argument was that subordinates are motivated by leader behaviour to the extent that this behaviour influences expectancy, instrumentality, valence and ultimately, goal attractiveness. In addition, House & Mitchell (1974, p. 82) offered a new development in the research on dyadic theories of leadership: "While the state of theorising about leadership in terms of subordinates' paths and goals is in its infancy, we believe it is promising for two reasons. First, it suggests effects of leader behaviour that have not yet been investigated but which appear to be fruitful areas of inquiry. And, second, it suggests – with some precision – the situational factors on which the effects of leader behaviour are contingent." House & Mitchell (1974) added two more leader behaviours to the path-goal saga. The four leader behaviours included in the 1974 theory are: directive leadership; supportive leadership; participative leadership; and achievement-oriented leadership. Summarised briefly, these behaviours are:

- Supportive Leadership: Giving consideration to the needs of subordinates, displaying concern for their welfare, and creating a friendly climate in the work unit.
- Directive Leadership: Letting subordinates know what they are expected to do, giving specific guidance, asking subordinates to follow rules and procedures, scheduling and coordinating the work.
- Participative Leadership: Consulting with subordinates and taking their opinions and suggestions into account.
- Achievement-Oriented Leadership: Setting challenging goals, seeking performance improvements, emphasising excellence in performance, and showing confidence that subordinates will attain high standards.

Furthermore, a number of studies suggest that the same leader – in various situations – can show these different leadership styles. For example, a leader may show directiveness toward subordinates in some instances and be participative or supportive in other instances (House & Dessler, 1974; and Hill & Hughes, 1974). Thus, the traditional method of characterising a leader as either highly supportive or highly directive is invalid; rather, it can be concluded that leaders can vary their behaviour in a particular fashion, in supervising their subordinates.

GENERAL PROPOSITIONS FROM PATH-GOAL THEORY

The Path-Goal Theory of Leadership has two general propositions. First, leader behaviour is acceptable and satisfying to subordinates to the extent that the subordinates see such behaviour as either an immediate source of satisfaction or as instrumental to future satisfaction. Second, the leader's behaviour will be motivational (i.e. increase effort) to the extent that such behaviour makes satisfaction of subordinate's needs contingent on effective performance and such behaviour complements the environment of subordinates by providing coaching, guidance, support and rewards necessary for effective performance. These two propositions suggest that the leader has several strategic functions:

- To recognize and/or arouse subordinates' needs for outcomes over which the leader has come control.
- To increase personal payoffs to subordinates for work-goal attainment.
- To make the path for those payoffs easier to travel by coaching and direction.
- To help subordinates clarify expectancies.
- To reduce frustrating barriers.
- To increase the opportunities for personal satisfaction contingent on effective performance.

According to path-goal theory, the effect of leader behaviour on subordinate satisfaction and effort depends on aspects of the situation, including task characteristics and subordinate characteristics. These 'situational moderator variables' determine both the potential for increased subordinate motivation and the manner in which the leader must act to improve motivation. Situational variables also influence subordinate preferences for a particular pattern of leadership behaviour, thereby influencing the impact of the leader on subordinate satisfaction. House & Mitchell (1974) detailed two situational moderator variables in their paper: the personal characteristics of the subordinates and the environmental pressures and demands with which subordinates must cope with, in order to accomplish the work goals and to satisfy their needs.

THE PERSONAL CHARACTERISTICS OF SUBORDINATES

Runyon (1973) and Mitchell *et al* (1975) showed that subordinates' score on a measure called Locus of Control (LoFC) moderates the relationship between participative leadership style and subordinate satisfaction. The LoFC measure reflects the degree to which an individual sees the environment as systematically responding to his or her behaviour.

People who believe that what happens to them occurs because of their behaviour are called internals; people who believe that what happens to them occurs because of luck or chance are called externals. Mitchell's (1975) findings suggest that internals are more satisfied with a participative leadership style and externals are more satisfied with a directive style. A second characteristic of subordinates on which the effects of leader behaviour are contingent is subordinates' perception of their own ability, with respect to their assigned tasks. The higher the degree of perceived ability relative to task demands, the less the subordinate will view leader directiveness and coaching behaviour as acceptable. Where the subordinate's perceived ability is high, such behaviour is likely to have little positive effect on the motivation of the subordinate and to be perceived as excessively close control. Thus, the acceptability of the leader's behaviour is determined in part by the characteristics of the subordinates.

THE ENVIRONMENT OF THE SUBORDINATE

This variable consists of those factors that are not within the control of the subordinate, but which are important to satisfaction or the ability to perform effectively. The theory asserts that effects of the leader's behaviour on the psychological states of subordinates are contingent on other parts of the subordinates' environment that are relevant to subordinate motivation. Three broad classifications of this second situational moderator variables (the environment) are: the subordinates' tasks; the formal authority system of the organisation; and the primary work group. Assessment of the environmental conditions makes it possible to predict the kind – and amount – of influence that specific leader behaviours will have on the motivation of subordinates. Any of these three environmental factors could act upon the subordinate in any of three ways:

- To serve as stimuli that motivates and directs the subordinate to perform necessary task operations.
- To constrain variability in behaviour.¹²⁷
- Environmental factors may serve as rewards for achieving desired performance: it is possible for the subordinate to receive the necessary cues to do the job (and the needed rewards for satisfaction) from sources other than the leader, for example, co-workers in the primary work group.

Thus, the effect of the leader on subordinates' motivation will be a function of how deficient the environment is with respect to motivational stimuli, constraints or rewards. Moreover, with respect to the environment, path-goal theory also asserts that when goals and paths to desired goals are apparent (because of the routine nature of the task, clear group norms, and objective controls of the formal authority systems), attempts by the leader to clarify paths and goals will be both redundant and seen by subordinates as imposing unnecessary, close control. Although such control may increase performance by preventing soldiering or malingering, it also will result in decreased satisfaction. Further, with respect to the work environment, the theory asserts that the more dissatisfying the task, the more the

¹²⁷ Constraints may help the subordinate by clarifying expectancies that effort leads to rewards or by preventing the subordinate from experiencing conflict and confusion. In juxtaposition, constraints also may be counterproductive to the extent that they restrict initiative or prevent increases in effort from being associated positively with rewards.

subordinates will resent leader behaviour directed at increasing productivity or enforcing compliance to organisational rules and procedures. Finally, with respect to environmental variables, the theory states that leader behaviour will be motivational to the extent that it helps subordinates cope with environmental uncertainties, threats from others or sources of frustration. Such leader behaviour is predicted to increase subordinates' satisfaction with the job context and to be motivational to the extent that it increases the subordinates' expectations that their effort will lead to valued rewards.

PRACTICAL APPLICATIONS FROM PATH-GOAL THEORY¹²⁸

When the task is stressful, boring, tedious, or dangerous, supportive leadership leads to increased subordinate effort and satisfaction by increasing self-confidence, lowering anxiety, and minimising unpleasant aspects of the work. In expectancy theory terminology, the leader increases both the intrinsic valence (enjoyment) of doing the task and the expectancy that it will be successfully completed. However, if a task is interesting and enjoyable, and subordinates are already confident, then supportive leadership has little, if any, effect. When the task is unstructured and complex, the subordinates are inexperienced, and there is little formalisation of rules and procedures to guide the work, then directive leadership will result in higher subordinate satisfaction and effort. The role ambiguity that exists when subordinates do not understand how to do the work effectively causes them to have a low expectancy of success, even for a maximum effort. By reducing role ambiguity, the leader increases expectancies and thus effort. The theory further assumes that role ambiguity is unpleasant, and reducing it will lead to greater subordinate satisfaction. When the task is structured or subordinates are highly competent, directive leadership will have no effect on effort. Moreover, in this situation, if subordinates perceive close supervision and direction to be an unnecessary imposition of leader control, satisfaction may actually decline. Effort can be increased by finding new and larger performance rewards and making them more closely contingent upon subordinate performance. This option was included in the initial formulation of the theory by Evans (1970) and House (1971) but was neglected in most subsequent versions and in the validation research, perhaps because positive reward behaviour does not fit well into the prevailing definition of directive behaviour. The propositions for participative leadership and achievement-oriented leadership are not as well developed or researched as those for supportive and directive leadership. Participative leadership is hypothesised to increase subordinate effort and satisfaction when the task is unstructured by increasing role clarity. When the task is structured, this behaviour has little or no effect. Participative leadership may also increase the intrinsic valence of the work and thus, satisfaction for subordinates with a high need for achievement and autonomy. Achievement-oriented leadership is hypothesised to increase subordinate effort and satisfaction when the task is unstructured (complex and non-repetitive) by increasing self-confidence and the expectation of successfully accomplishing a challenging task or goal. When the task is simple and repetitive, this behaviour has little or no effect.

PATH-GOAL THEORY: THE LEGACY

At the time of writing, it has been 33 years since the original publication of *The Path-Goal Theory of Leader Effectiveness* (House, 1971). Path-goal theory has given us a two-fold legacy (House, 1996). First, the framework for analysis of leadership – in terms of substitutes for leadership offered by Kerr and Jermier (1978) – grew out of early work

¹²⁸ For further analysis, see Northouse (2004).

conducted by House, Filley & Kerr (1971). Substitutes theory is an extension of path-goal theory, in that it elaborates (in substantial detail) many of the moderating variables suggested by path-goal theory, and is widely cited in the organisational behavioural literature and represented in most organisational behaviour textbooks. Second, path-goal theory led to the foundation of the *1976 Theory of Charismatic Leadership* (House 1977).¹²⁹ In contrast to earlier leadership theory – which primarily addressed the effects of leaders on follower cognitions and behaviours – charismatic leadership theory primarily addresses the effects of leaders on followers' valences, emotions, non-conscious motivation and self-esteem. Charismatic theory has enjoyed considerable support from a number of studies using a wide variety of methods and samples, Yukl (2002).

RESEARCH FINDINGS TO DATE ¹³⁰

OVERVIEW

Research conducted to test path-goal theory has yielded mixed results. For example, Wofford and Liska (1993) reviewed 120 survey studies on the theory and conducted a meta-analysis of the results for task and relations behaviour, and despite the large number of studies that have tested the theory, the results have been inconclusive. Not enough studies are available to provide an adequate test of hypotheses about situational moderators of participative and achievement-oriented leadership. Most propositions about situational moderators of directive leadership are not supported. There is some evidence that directive leadership correlates more strongly with satisfaction for subordinates with low ability, but only an indirect test of the proposition was possible. There has been little or no moderating effect of the situation on the relationship between leader supportive behaviour and subordinate satisfaction with the leader. Moreover, most studies have used subordinate questionnaires to measure leader behaviour and have used a static correlational design (Yukl, 2002). Another limitation of the research is that most studies deal with only a few aspects of the theory while ignoring other aspects, such as the intervening motivational processes (expectancies and valences). In addition, many studies have measured surrogates instead of the situational variables actually specified by the theory (Yukl, 2002). Taken together, these limitations of the research suggest that the theory has yet to be adequately tested. Furthermore, methodological limitations have made it difficult to interpret the results from much of the research published to test the theory (Wofford & Liska, 1993; Yukl, 1989). As House (1996 p.324) says: “This state of affairs is largely a result of the use of inappropriate methods used to test the theory. The use of inappropriate methods used is partially due to the methodological precedents established in the original tests (House, 1971), as well as the prevailing norms in the 1970s and 1980s, which were rather lenient, with respect to the methodological and conceptual vigour. Furthermore, the boundary conditions of the 1971 Theory were not adequately specified.”

CONCEPTUAL WEAKNESSES

Path-goal theory also has some conceptual deficiencies that limit its utility, Yukl (2002). In general, the greatest weakness is the use of expectancy theory as the primary basis for

¹²⁹ The current theories of charismatic leadership were strongly influenced by the ideas of the sociologist, Max Weber.

¹³⁰ For a full analysis of the research findings published on Path-Goal theory, see Bass (1990, pp. 626-633)

explaining leader influence. This rational decision model provides an overly complex and seemingly unrealistic description of human behaviour (Behling & Starke, 1973; Mitchell, 1974; and Schriesheim & Kerr, 1977). Expectancy theory does not take into account emotional reactions to decision dilemmas, such as denial or distortion of relevant information about expectancies and valences, Yukl (2002). Expectancy theory limits the explanation of leadership influence to changes in subordinate perceptions about the likely outcomes of different actions. Another conceptual limitation is the reliance on broad categories of leader behaviour that do not correspond closely to the mediating processes. It is easier to make a link between leader behaviour and subordinate motivation by using specific behaviours such as clarifying role expectations, recognising accomplishments, giving contingent rewards, modelling appropriate behaviours for subordinates to imitate, and communicating high expectations about subordinate performance. For example, the theory says that directive leadership will be beneficial when the task is unstructured, but directive leadership may not be beneficial for an unstructured task if there is another situational determinant of subordinate role clarity, such as a high level of professional training and experience. Further, it is assumed that role ambiguity will cause a person to have an unrealistically low expectancy, and that leader behaviour resulting in greater clarity will automatically increase expectancies. However, clarification of the subordinate's role sometimes makes it evident that successful task performance and the attainment of specific task goals are more difficult than the subordinate initially believed (Yukl, 1989). It is also assumed that role ambiguity is determined primarily by task structure (defined as a characteristic of the task, not the employee), but a more appropriate moderator variable is an employee's ability and experience in relation to the task. The same, supposedly structured task may be clear to an experienced subordinate but ambiguous to an inexperienced subordinate. Finally, Path-Goal theory does not take into account how levels of stress, organizational culture and climate, working conditions, technology, economic conditions, or type of organizational design affect the leadership process.

THE MAIN PROBLEM IN TESTING PATH-GOAL THEORY

Path-Goal theory is very complex: the independent variable consists of four leader behaviours; the moderator variable involves a number of situational and follower traits; the intervening variable has five aspects (follower expectancies and valences); and the dependant variable has two outcomes (performance and satisfaction). This is shown generally in Figure 3.0.

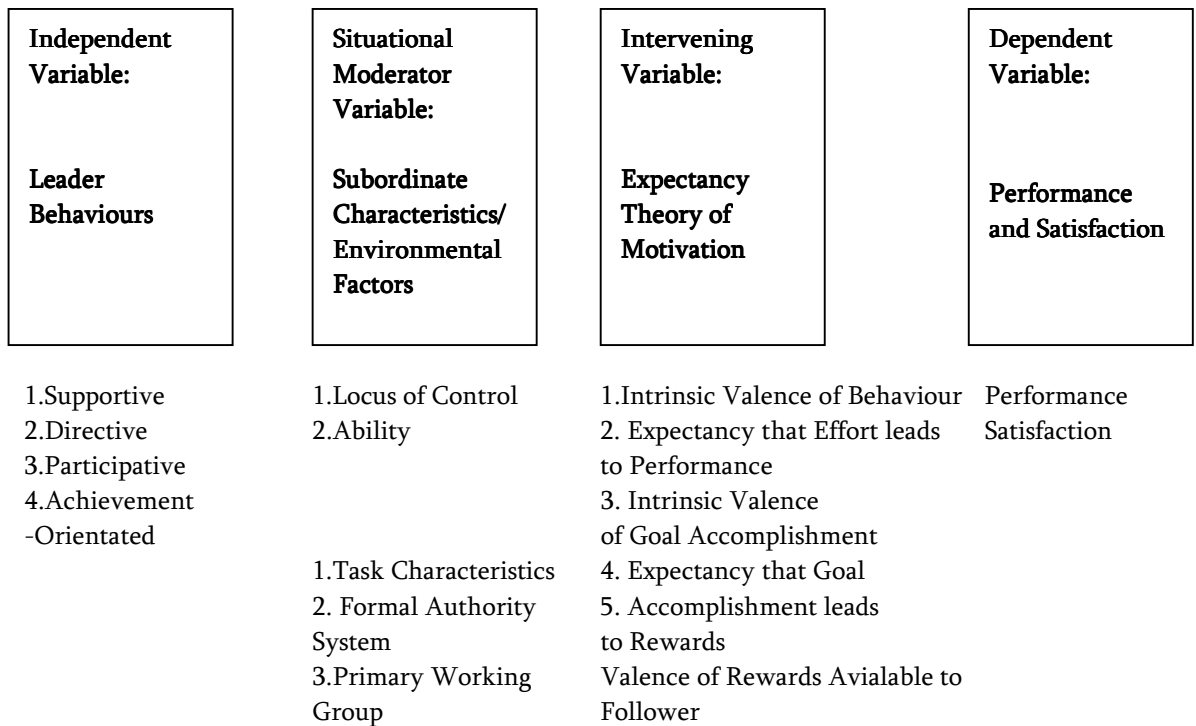


Figure 3.0: Path-Goal Theory – ‘A Plethora of Variables’

Reviews of the state of progress concerning the path-goal theory point to methodological limitations in traditional research approaches: measurement artefacts; sampling inadequacies; common method variance; improperly estimated statistical models due to specification error (especially surrounding interactions among moderator variables); an absence of longitudinal designs; and a number of other failings in positivistic technique. It seems that the theory’s conceptual sophistication, while probably necessary to capture nuanced understanding of the behavioural and psychological processes involved in various situations with various individuals, prevents adequate testing using positivistic field methods (Jermier, 1996). Moreover, although the theory specifically articulated the role of motivation as the mediator between leader behaviour and subordinate satisfaction and performance, most tests of path-goal theory have focused on the direct effects, under different contingencies, of leader behaviour on satisfaction and performance. These tests have been very restrictive in the kinds of leader behaviours examined, the dependent variables studied, and the moderator variables examined. Evans (1987) produced a summary from the bulk of the published research to test path-goal theory, which demonstrated how restricted the efforts have been. Nearly all the studies have focused on two leader behaviours (instrumental and supportive) as they interacted with task structure to affect performance or, more likely, satisfaction. The number of studies that examined components of the motivation theories was small. The number of studies that included individual characteristics of the subordinate – as moderators – was minimal and only two studies looked at joint task and individual characteristics as moderators. In the light of the absence of studies testing the critical motivational hypotheses of the theory, it is hard to argue that the theory has undergone reasonable testing. It has not.¹³¹

¹³¹ Path-goal theory has made an important contribution to the study of leadership by providing a conceptual framework to guide researchers in identifying potentially relevant situational variables. However, path-goal theory is very subtle and sophisticated. The conclusion is

1996 PATH-GOAL THEORY OF WORK UNIT LEADERSHIP

The substantial amount of empirical research conducted to test path-goal theory (Bass, 1990) suggested that the original theory (and its derivatives) was in need of reformulation. In the light of this evidence, House (1996) suggested a number of propositions as a reformulated 1996 Path-Goal Theory of Leadership. The reformulated theory, *The 1996 Path-Goal Theory of Work Unit Leadership*, is a theory of work unit leadership: it specifies leader behaviours that enhance subordinate empowerment and satisfaction and work unit and subordinate effectiveness. It addresses the effects of leaders on the motivation and abilities of immediate subordinates and the effects of leaders on work unit performance.

THE INDEPENDENT VARIABLE OF THE THEORY: LEADER BEHAVIOURS

The theory specifies eight leader behaviours that are theoretically acceptable, satisfying, facilitative and motivational for subordinates. The behaviours are summarised in Table 1.0 below:

that the path-goal theory, while probably not quite complex enough to describe dyadic leadership processes, is too complex for traditional field research methods.

Behaviour	Description
Path-Goal Clarifying Behaviour	<p>This behaviour is capable of making subordinates' needs and preferences contingent on effective performance by:</p> <ul style="list-style-type: none"> • Clarifying the subordinates' performance goals. • Clarifying the means by which subordinates can effectively carry out tasks. • Clarifying the standards by which subordinates' performance will be judged. • The judicious use of rewards and punishment, contingent on performance.
Achievement-Orientated Leader Behaviour	<p>This behaviour stresses pride in the subordinates' work and self-evaluation, based on personal accomplishment.</p>
Supportive Leader Behaviour	<p>This behaviour provides psychological support for subordinates. Such behaviour is especially needed under conditions in which tasks or relationships are psychologically or physically distressing. Supportive relationships increase the quality of relationships between superiors and subordinates and decrease subordinate stress.</p>
Work Facilitation	<p>This behaviour facilitates work by:</p> <ul style="list-style-type: none"> • Personally co-ordinating the work of subordinates. • Providing mentoring, developmental experiences, guidance, coaching, counseling and feedback to assist subordinates in developing the knowledge and skills required to meet expectancies and performance standards. • Reducing the obstacles to effective performance (by subordinates) by eliminating roadblocks, bottlenecks, and providing resources. • Authorizing subordinates to take actions and make decisions necessary to perform effectively.
Interaction Facilitation	<p>This behaviour facilitates collaboration and provides positive interaction, involving:</p> <ul style="list-style-type: none"> • Resolving disputes. • Facilitating communication. • Giving the minority a chance to be heard. • Emphasizing the importance of teamwork. • Encouraging close and satisfying relationships among members.
Group-Orientated Decision Process	<p>This behaviour concerns the manner by which decisions that affect the group are made. For example, the effectiveness of decisions are determined by the degree to which decisions meet physical and economic requirements (referred to as decision quality) and the degree to which decisions are acceptable to individuals who influence the implementation of decisions.</p>
Representation and Networking	<p>This behaviour includes presentation of the group in a favourable manner, and communicating the importance of its work to other members of the organisation of which the group is a part. Therefore, effective networking of work unit leaders enhances such representation.</p>
Value Based Leader Behaviour	<p>This behaviour helps subordinates identify (and meet with) organisational goals by: appealing to subordinates' cherished values and non-conscious motives; and engaging their (subordinates) self-perceived identities, their self-efficacy and sense of consistency.</p>

Table 1.0: Leader Behaviours

It is unlikely that any one leader will have the ability to engage in all of the behaviours all, or even most, of the time. Effective leaders likely select those behaviours with which they are most comfortable, based on their personality and repertoire of abilities. The specific combinations of leader behaviours most effective for a given individual will likely depend on that individual's social skills and abilities. Those behaviours with which leaders are not comfortable, or for which leaders do not have the necessary abilities or social skills, but which are nevertheless required in specific situations, can be shared with, or delegated to, work unit members. No claim is made that the theory includes an exhaustive set of leader behaviours. It is also likely that some of the behaviours are substitutable for each other. For example, articulation of a vision, coupled with role modelling of appropriate behaviours, may be substitutable for the path-goal clarifying behaviours described above. Or, leader interaction facilitation or peer supportiveness may be substitutable for, or make unnecessary, supportive leadership.

THE INTERVENING VARIABLES OF THE THEORY: FOLLOWER EXPECTANCIES AND VALENCIES

The following five variables are the intervening motivational variables of the theory: intrinsic valence of behaviour, expectancy that effort leads to accomplishment, intrinsic valence of goal accomplishment, expectancy that goal accomplishment leads to valent rewards and the valence of rewards available to followers. House (1996), states that to his knowledge, there have been no tests of the effects of leader behaviour on follower valences. Further, the only test of the effects of leader behaviour on follower expectancies is that of House & Dessler (1974), which yielded rather strong support for the theory, based on two independent samples.

THE MODERATOR VARIABLES OF THE THEORY: SITUATIONAL AND TRAIT

The moderators of the 1996 Theory remain consistent with the original path-goal theory, namely the personal characteristics of subordinates (LofC and the subordinates' perception of their own ability, with respect to their assigned tasks) and the environment of the subordinate (those factors that are not within the control of the subordinate: the subordinates' tasks, the formal authority system of the organization, and the primary work group).

THE DEPENDANT VARIABLES OF THE THEORY: PERFORMANCE AND SATISFACTION OF THE SUBORDINATES

The theory asserts that leaders have a direct influence on the independent variables, via the intervening and moderator variables, and that these variables, in turn, influence subordinate satisfaction, effort and performance. However, because there are so many additional intervening variables that may affect performance and satisfaction, the prevailing literature does not include adequately controlled tests of the prediction of path-goal theory, with the exception of tests, which use satisfaction with supervision as a dependent variable.

IMPLICIT ASSUMPTIONS AND BOUNDARY CONDITIONS

The initial version of the theory makes two assumptions (House, 1996). First, it was assumed that individuals choose the level of effort they will devote to their tasks on the basis of the degree to which they expect to receive, or experience, valued outcomes as a result of their effort. Thus, the theory makes a strong self-interest driven assumption about the nature of subordinates' work motivation. Second, the theory assumed that the propositions of valence-expectancy theory of motivation (Vroom 1964) were adequate to account for individual work motivation: valence-expectancy theory on which path-goal theory of leadership rests implicitly assumes that individuals cognitively calculate work outcomes contingent on the level of effort they put forth and that they consciously choose the level of effort to be expended which will maximise the attainment of valent outcomes. Thus path-goal theory of leadership makes a strong rationality assumption about individual work motivation. In the reformulated 1996 Theory, these two assumptions are defined as boundary conditions.

LIMITATIONS

The reformulated theory, while broader than the original path-goal theory, remains somewhat limited in scope. It does not concern emergent-informal leadership, leadership as it affects several levels of managers and subordinates in organisations, political behaviour of leaders, strategic leadership of organisations or leadership as it relates to change. These limitations reflect the limitations of current knowledge about effective leadership. As House (1996) says: “*Hopefully, future empirical research and theoretical developments will provide additional useful information about leadership not addressed in the theory presented here.*”

METHODOLOGY

The 1996 Path-Goal Theory of Work Unit Leadership is extremely complex. This reformulated theory includes eight classes of leader behaviour, individual differences of subordinates and task moderator variables that are related to each other in 26 propositions. It is, therefore, very difficult to try and evaluate it in its entirety. However, this methodology (co-authored by the author and Robert J House) will hopefully eliminate some of the errors in the previous research, undertaken to test path-goal theory and further develop this dyadic theory of leadership.^{132,133}

To evaluate the 1996 Theory, Royal Air Force Engineers were chosen as a suitable sample. This cohort was selected for various reasons: leadership research has its origins in military organizations; the Royal Air Force takes leadership development very seriously and it was hoped that the response rate for the quantitative and qualitative investigation would be significant;¹³⁴ and Royal Air Force Engineers are at the forefront of some of the most sophisticated technology available.¹³⁵

¹³² For further analysis and methodological limitations of previous research, see House (1996, pp. 329-330) and House & Adita (1997, p. 423).

¹³³ Given the number of variables involved in the theory, it may be impossible to test the theory accurately, even with a significant amount of time and high quality data. In reality, there is probably a trade-off between the sophistication of the model and the consequential inability to capture the resulting multi-variable complexity.

¹³⁴ Reference should be made to Wong *et al* (2003) for an analysis of context-specific leadership research.

¹³⁵ Although outside the scope of this study, the author is intrigued by ‘personal’ and ‘expert’

The research methodology has four distinct stages:

1. LEADER BEHAVIOUR: THE PILOT STUDY

A questionnaire will be designed and validated to measure the Leader Behaviours specified in the 1996 Theory, which are expected to be relevant to the study population of Royal Air Force Engineers. Of the eight behaviours cited in the 1996 Theory, it is important to determine (and rank) the four behaviours most prevalent to the study population.¹³⁶

2. THE SITUATIONAL MODERATOR VARIABLE: TASK DEMANDS

A Task Demand Questionnaire (the main situational moderator variable to be tested) will be designed and validated which members of the population must meet, in order to be effective. The task demands should reflect the moderators specified in the 1996 Theory, as well as other unusual task demands; for example, source of stress, uncertainty, frustration or dissatisfaction. The design of this Questionnaire will involve two distinct elements:

- (a) Ask 400 Engineers (Senior Officers, Junior Officers and Senior Non-Commissioned Officers) in the IT/IS field, to describe 10 of their tasks (i.e. task demands) that they must complete on a weekly basis to be successful engineers. To ease this analysis, 3 themes will be focused on which - it is understood - are causing the greatest amount of frustration, dissatisfaction, uncertainty and stress: unrealistic tasks; poor communication; and lack of resources.

These ten tasks will then be ranked to determine the 'Top 4' tasks.^{137,138}

- (b) At a later date, ask the same cohort to describe each of the 'Top 4' tasks in terms of adjectives:¹³⁹

- Simple versus Complex.
- Routine versus Challenging.
- Conventional versus Abstract.

power and its relationship to leadership. In a military organisation, rank offers significant personal power. However, as HM Forces move towards a more 'network-centric' organisational design (and culture), expert power, especially in the IT/IS field, may usurp the personal power of superior officers.

¹³⁶ Time constraints do not allow for a full evaluation of all leader behaviours to be undertaken.

¹³⁷ Again, time constraints do not allow all Situational Moderator Variables, described in Path-Goal Theory, to be analysed.

¹³⁸ Qualitative analysis.

¹³⁹ It will be important to determine if the Officers perceive the tasks to be the same as the subordinates. In other words, it will be important to check to see if the responses are isomorphic. Importantly, weakness of leadership theory (and research), to date, is that only subordinates have been asked to comment on task demands. In other words, it is important to determine if there is inter-rater agreement.

- Varied versus Repetitive.

3. THE LEADER BEHAVIOUR QUESTIONNAIRE

A Leader Behaviour Questionnaire will be designed and validated. This questionnaire will be designed to accommodate the 'Top 4 Behaviours' cited from the Leader Behaviour Pilot Study.^{140,141}

4. THE LEADER BEHAVIOUR AND TASK DEMAND QUESTIONNAIRE: FUSION OF THE INDEPENDENT VARIABLE AND SITUATIONAL MODERATOR VARIABLE

Three months after a separate cohort of Officers have taken up a supervisory position in which they have responsibility for managing at least eight subordinates, the Task Demand Questionnaire and Leader Behaviour Questionnaire will be administered.

- (a) Data will be collected with respect to: motivational effects of leaders; satisfaction of subordinates with leaders; performance of subordinates; and performance of leaders.¹⁴²

Approximately six months after the questionnaires have been administered, the superiors of the Officers (the subject Officers) will be asked to rate the quality of team in terms of performance, reliability, turnover and costs.

- (a) It will be important to test to see if the responses of subordinates should be aggregated or should be treated individually.
- (b) It will be important to compute correlations between the responses of subordinates and some measures of effectiveness of the Engineer Officer.
- (c) The more objective the measures of effectiveness the better: reports of subordinate's subjective opinions of leader effectiveness would not be adequate. This information should come from sources independent of both the leaders and the leaders' subordinates.
- (d) It may be possible to test for Organisational Citizenship Behaviour: high performing teams display good citizenship.

STATISTICAL ANALYSIS: STRUCTURAL EQUATION MODELLING

¹⁴⁰ It is likely that the Leader Behaviour Questionnaire will be issued to 2 samples: one sample where there is agreement between the Officer and subordinate in terms of task demands; the other sample where there is disagreement between the Officer and subordinate in terms of task demand.

¹⁴¹ This questionnaire will use four previous questionnaires that have been used with respect to these behaviours: the design of the supportive, path-goal and interaction facilitation behaviours will be designed, from previous work undertaken by Robert J House and the work facilitation behaviours will be taken from Bowers & Seashore (1961).

¹⁴² If the Officer 'self-reports' the same leader behaviour as his/her subordinates, then it is likely that the 'unit' will be more effective (therefore, 'level of agreement between officer and subordinate' is then a situational moderator variable).

For Step 4 (manipulation of the Independent Variable - via the Situational Moderator Variable - to determine the effect on the Dependent Variable (performance and satisfaction of the subordinates), it is intended to use Structural Equation Modelling (LISREL) to examine the overall fit of the theory to empirical data, controlling for extraneous variables that might affect follower performance and satisfaction.

RESEARCH RESULTS: STAGE 1 – THE LEADER BEHAVIOUR PILOT STUDY

BACKGROUND

In spring 03, 87 questionnaires were sent to every Royal Air Force Engineer Officer of Group Captain Rank and above: Group captain, Air Commodore and Air-Vice Marshal. At this stage, it was deemed important to measure 'expert opinion.' In other words, this cohort are working at the corporate level of the Royal Air Force, with some having over 25 years experience of military engineering.

For ease of analysis, Table 2.0 offers a comparison of these Air Force ranks (Group Captain, Air Commodore and Air-Vice Marshal) with their civilian equivalent in terms of remuneration, responsibility, span of control and interface with central government.¹⁴³

Rank	Civilian Equivalent
Air-Vice Marshal	Senior Manager up to Chairman or Chief Executive – depending on size of organization. In personnel terms, size of organization ranges from 10000 to 50000. Extensive management and strategic planning experience including international and geo-political aspects. Also has considerable experience of interface with Government policy making and administrative machinery.
Air Commodore	Managing Director of company of up to 10000 staff. Extensive management and operational experience.
Group Captain	Middle up to Senior Manager/Operations Director: highly qualified and experienced in administration and personnel management. In personnel terms, 500 to 5000 employees.

Table 2.0: Comparison of Royal Air Force Rank and Civilian Equivalent

THE RESULTS

The respondents were asked to indicate which 4 leader behaviour (of these eight behaviours cited in the 1996 Theory) were important to Engineer Officers in the RAF with respect to goal-setting and objective achievement. The response rate was excellent: 81 responses were received, giving an overall response rate of 93%. The data was analysed using SPSS, Version 11.1.

Table 3.0 portrays the basic analysis of the results.

¹⁴³ Comparison provided by Coutts Consulting Group/Ministry of Defence (see: www.ctp.org.uk)

Rank	Frequency	%	Cumulative %
Air-Vice Marshal	7	8.6	8.6
Air Commodore	12	14.8	23.5
Group Captain	62	76.5	100.0
Total	81	100.0	100.0

Table 3.0: Descriptive Statistics

THE 'TOP 4' BEHAVIOURS

The Top 4 leader behaviours were: supportive leader behaviour, path-goal leader behaviour, interaction facilitation leader behaviour, and work facilitation leader behaviour. This information is shown in Table 4.0.^{144,145}

Rank Order	Behaviour
1	Support
2	Path-Goal
3	Interaction Facilitation
4	Work Facilitation
5	Achievement
6	Representation
7	Value
8	Group

Table 4.0: The 'Top 4 leader Behaviours'

It was then deemed important to determine if each rank within the cohort (Group Captain, Air Commodore and Air-Vice Marshal) scored the leader behaviours differently: for example, did each 'rank' have different preferences for Leader Behaviours? The preferred Leader Behaviours, scored by rank, are shown in Table 5.0.

¹⁴⁴ More detailed results are available (on request) from the author.

¹⁴⁵ These results reflect a historically contingent RAF culture.

Rank		
Air-Vice Marshal	Air Commodore	Group Captain
1 Work Facilitation	1= Support; Interaction Facilitation	1 Support
2 = Value; Path-Goal	2	2 Path-Goal
3	3 Achievement	3 = Work Facilitation; Interaction Facilitation
4 Interaction Facilitation	4 Representation	4
5 = Achievement; Support; Group; Representation	5 Value	5 Achievement
6	6=Path-Goal; Work Facilitation	6 Representation
7	7	7 Value
8	8 Group	8 Group

Table 5.0: Preferred Leader Behaviours by Rank

As the number of Air-Vice Marshals was only seven, the results (of this cohort) were treated with caution. Each rank cohort has different Top 4 scores; however, the Leader Behaviour of Support (a Leader Behaviour that offers psychological support for subordinates, especially required under conditions in which tasks or relationships are psychologically or physically distressing) appears as the top Leader Behaviour for the Air Cdre and Gp Capt cohort. In addition, the Leader Behaviour of Interaction Facilitation (a Leader Behaviour that facilitates collaboration and provides positive interaction) is a consistent Top 4 placing. Finally, it is interesting to note that all cohorts scored the Leader Behaviour of Group-Orientated Decision Process, or 'Group' (a Leader Behaviour which concerns the manner by which decisions that affect the group are made) as the least preferred Leader Behaviour. On balance, this is perhaps the only result that could be expected: Leadership Behaviour, although generally consultative and participatory in the Royal Air Force, cannot accommodate decision-making by committee.

RESEARCH RESULTS: STAGE 2 (ELEMENT 1) – THE SITUATIONAL MODERATOR
(TASK DEMANDS)
BACKGROUND

At the time of writing, 400 questionnaires have issued to 400 Royal Air Force Engineers: Senior Officers, Junior Officers and Senior Non-Commissioned Officers. The purpose of this questionnaire is to determine (and evaluate) the current tasks and demands faced by Engineers, both Officers and SNCOs, '*at the coalface*' in the Royal Air Force today.¹⁴⁶

RESEARCH RESULTS: STAGE 2 (PART 2) – THE SITUATIONAL MODERATOR
(TASK DEMANDS)

Once this qualitative data is analysed, in terms of the 'Top 4 Task demands', the same cohort will be asked to rate these demands on a Likert Scale to probe these areas in greater depth, to determine the degree of complexity, challenge, abstraction and repetitiveness.

¹⁴⁶ Preliminary results are available from the author on request.

FUTURE RESEARCH DIRECTIONS: STAGE 3 & 4

In 2005, it is intended to 'marry' a newly designed Leader Behaviour Questionnaire (designed by the author and Robert J House) with a Task Demand Questionnaire (established from the research results of Stage 2 above) and administer this material to a new cohort of RAF Engineers. Structural Equation Modelling will analyse this multi-variable data, in concert with objective opinions of the superiors of the work-unit, which is being studied.

GUIDELINES FOR MANAGERS

Current managerial literature emphasises empowerment of subordinates. The reformulated Path-Goal Theory specifies several ways such empowerment can be accomplished by all managers, House (1996):

- Path-goal clarification establishes delegation for authority and responsibility.
- Work facilitation enhances subordinates' development and ability to work autonomously.
- Supportive leadership enhances psychological security.
- Achievement oriented leader behaviour arouses achievement oriented behaviour and encourages subordinates to take intermediate level calculated risks.
- Group decision process allows subordinates to influence decision-making.
- Interaction facilitation empowers followers to engage in reciprocal co-ordination and inter dependent action.
- Representation enhances the legitimacy of work units and the resources available to work unit members.
- Value based leadership strengthens subordinate' self-efficacy and conviction in the appropriateness of their actions. Value based leadership strengthens collective identification and the motivation for work unit members to contribute to collective goals.

Thus, the reformulated theory could well be entitled a theory of work unit empowerment. The advantage of this theory over the frequently found exhortations for empowerment in the managerial literature is that the theory specifies not only empowerment behaviours, but also the conditions under which such behaviours will theoretically be effective.

Similar to the original path-goal theory, the reformulated theory asserts that: *“Leader behaviour is justified only to the extent that it is satisfying and instrumental to the performance of subordinates.”*

REFERENCES

- Bass, B. M. (1990). *Handbook of leadership: a survey of theory and research*. New York: Free Press.
- Behling, D., & Starke, F. A. (1973). The *postulates of expectancy theory*. *Academy of Management Journal*, 16, 373 – 388.
- Bowers, D. G. & Seashore, S. E. (1966). *Predicting organizational effectiveness with a four-factor theory of leadership*. *Administrative Science Quarterly*, 11, 238-263.
- Evans, M. G. (1968). *The effects of Supervisory Behaviour upon Worker Perception of their Path-Goal Relationships*. Doctoral Dissertation: Yale University.
- Evans, M. G. (1970). *The effects of Supervisory Behaviour upon the path-goal relationship*. *Organizational Behaviour and Human Performance*, 5, 277 –298.
- Evans, M. G. (1996). R J House's "A Path-Goal Theory of Leader Effectiveness." *Leadership Quarterly*, 7, 3, pp. 305 – 310.
- Fielder, F.E. (1977). *A rejoinder to Schriesheim and Kerr's premature obituary of the contingency model*. In J. G. Hunt & L. L. Larson (Eds.), *Leadership: The cutting edge* (pp. 45-51). Carbondale: Southern Illinois University Press.
- Georgopoulous, B. S., Mahoney, G. M. & Jones Jnr, N. W. (1957). *A path-goal approach to productivity*. *Journal of Applied Psychology*, 41, 345-353.
- Hill, W. A. & Hughes, D. (1974). *Variations in leader behaviour as a function of task type*. *Organization Behaviour and Human Performance*, 11, 83-96.
- House, R. J. (1971) *A Path-Goal Theory of Leader Effectiveness*. *Administrative Science Quarterly*. September 1971, 321 – 338.
- House, R. J. (1977). *A 1976 theory of charismatic leadership*. In J. G. Hunt & L. L. Larson (Eds.), *Leadership: The cutting edge* (pp. 45-51). Carbondale: Southern Illinois University Press.
- House, R. J., Filley, A. C., & Kerr, S. (1971) *Relation of leader consideration and initiating structure to R and D subordinate satisfaction*. *Administrative Science Quarterly*, 16: 19-30.
- House, R. J., & Dessler, G. (1974). *The path-goal theory of leadership: Some post hoc and a priori tests*. In J. Hunt and L. Larson (Eds.), *Contingency approaches to leadership*. Carbondale, IL: Southern Illinois Press.
- House, R. J., & Mitchell, T. R. (1974). *Path-goal theory of leadership*. *Contemporary Business*, 3 (Fall), 81-98.
- House, R. J., & Aditya, R. N. (1997). *The Social Scientific Study of Leadership: Quo Vadis?* *Journal of Management*, 23, 3, 409-473.

- Jermier, J. M. (1996). *The Path-goal Theory of Leadership: A Subtextual Analysis*. *Leadership Quarterly*, 7, 3, pp. 311 – 317.
- Kerr, S., & Jermier, J. M. (1978). *Substitutes of leadership: their meaning and measurement*. *Organizational Behaviour and Human Performance*, December 1978, pp. 375-403.
- Mitchell, T. R. (1974). *Expectancy models of job satisfaction, occupational preference and effort: A theoretical, methodological and empirical appraisal*. *Psychological Bulletin*, 81, 1053 – 1077.
- Mitchell, T. R., Smysere, C.M. & Weed, S. E. (1975). *Locus of control: supervision and work satisfaction*. *Academy of Management Journal*, 18, 623-630.
- Northouse, P. G. (2004) *Leadership and Practice*, (3rd Edition) Thousand Oaks, Ca: Sage Publications.
- Runyon, K. E. (1973). *Some interactions between personality variables and managements styles*. *Journal of applied Psychology*, 57, 3, 288-294.
- Schriesheim, C. A., & Kerr, S. (1977). *Theories and measures of leadership: A critical appraisal*. In J. Hunt and L. Larson (Eds.), *Leadership: The cutting edge*. Carbondale, IL: Southern Illinois Press.
- Vroom, V. H. (1964). *Work and Motivation*. New York: Wiley.
- Yukl, G. (2002). *Leadership in organizations*. 5th Edition, Englewood Cliffs, NJ: Prentice Hall.

THE TASK DEMANDS FACING MILITARY ENGINEERS: NEW PERSPECTIVES ON THE SITUATIONAL MODERATOR VARIABLE IN LEADERSHIP RESEARCH

W BRIAN HOWIESON

THE ROYAL AIR FORCE

ABSTRACT

Comparative research on the way managerial behaviour varies across situations provides some useful insights in determining the role requirements of leaders (Yukl, 2002). However, this research is only an indirect approach for discovering what type of leadership is 'optimal' in a given situation. A more direct approach is to determine how leader traits or behaviours are related to indicators of leadership effectiveness in different situations (Yukl, 2002). Aspects of the situation that enhance or indeed, nullify, the effects of a leader's traits or behaviors are called 'Situational Moderator Variables' (SMVs). Indeed, theories of leadership that explain leadership effectiveness in terms of SMVs are called Contingency Theories of Leadership. The purpose - and principal aim of this paper - is to describe, code and compare the SMVs that face Engineers in the Royal Air Force today. The paper will offer: an introduction to Contingency Theories of Leadership; an analysis of the meaning and implications of SMVs in leadership theory; a research methodology to illicit SMVs in Royal Air Force Engineers; and reveal the results of this on-going research with military engineers. Questionnaires (N=360) were sent to Royal Air Force Engineers working in 4 operating environments (Main Operating Bases, Integrated Project Teams, Training Environments and Corporate Headquarters). Respondents were asked to list the 3 principal tasks (SMVs) that they were required to complete on a weekly basis. Of particular interest were those tasks that caused anxiety, frustration, anxiety and stress. The questionnaires were also administered/sub-divided into 3 main cohorts to further allow comparison of task demands (SMVs) between ranks: Senior Officers; Junior Officers; and Senior Non-Commissioned personnel. The results were grouped, coded and compared between operating domains and between functional levels (i.e. 'rank'). This paper will offer a full analysis of the task demands (SMVs) between operating domains and between functional level. In this way, it is hoped that leadership scholars - and researchers alike - may be able to apply this information (evidence-based SMVs) to various contingency theories of leadership, to advance further knowledge and understanding of this area of leadership.

INTRODUCTION

Leadership has probably been written about, formally researched and informally discussed more than any other single topic, and despite all the attention given to leadership, there is still considerable controversy (Luthans, 2002). Indeed, in the research on leadership, behavioural scientists have attempted to discover what traits, abilities, behaviours, sources of power, or how aspects of the situation determine how well a leader is able to influence followers and accomplish group objectives. Moreover, the reasons why some people emerge as leaders and the determinants of the way the leader acts, are other important questions that have been investigated; however, although some progress has been made in probing the mysteries surrounding leadership, many questions remain unanswered (Luthans, 2002).

A general theory of leadership that explains all aspects of the process adequately has yet to be developed.

In the contingency approach to leadership, an attempt is made to specify the conditions - or SMv - that moderates the relationship between leader traits or behaviours (the Independent Variable) and performance criteria (the Dependent Variable).

CONTINGENCY THEORIES OF LEADERSHIP

Contingency theories of leadership are derived, in part, from the 'situational approach' to leadership research.

The situation approach to leadership began to receive increased attention in leadership theory from the 1950s onwards. The situational approach was initially called *Zeitgeist* (a German word meaning 'spirit of the time'): in essence, the leader is viewed as a product of the time and the situation. Therefore, a person with the particular qualities or traits – that a situation requires – will emerge as the leader. In detail, the situational approach emphasizes the importance of contextual factors such as the nature of the work performed by the leader's unit, the nature of the external environment, and the characteristics of followers.¹⁴⁷ Situational leadership theory has two major subcategories:

- One line of research treats leader behaviour as the dependant variable, and researchers seek to discover how this behaviour is influenced by aspects of the situation, such as the type of organisation or leader position. The research investigates how leaders cope with demands and constraints from subordinates, peers, superiors, and outsiders. The primary research method is a comparative study of two or more situations. The dependent variables may be managerial perceptions and attitudes, managerial activities and behaviour patterns, or influence processes.
- The other subcategory of situational research attempts to identify aspects of the situation that moderate the relationship between leader behaviours (the Independent Variable) and leadership effectiveness (the Dependent Variable). The assumption is that different behaviour patterns (or trait patterns) will be effective in different situations and that the same behaviour pattern (or trait pattern) is not optimal in all situations. Theories describing this relationship are called Contingency Theories of Leadership.

THE MEANING AND IMPLICATIONS OF SMvs IN LEADERSHIP THEORY

Various leadership behaviours can be and actually are used by the same leader in different situations. Situational factors are numerous and can range from the personal characteristic of the subordinate to the environmental pressures and task demands facing the subordinate. Therefore, by employing behaviour contingent on situational factors, the leader attempts to

¹⁴⁷ *Zeitgeist* probably fell out of favour because in the 1980s, management researchers became very interested in the emotional and symbolic aspects of leadership, which help us understand how leaders influence followers to make self-sacrifices and put the needs of the mission or organisation above their materialistic self-interests. The theories of charismatic and transformational leadership describe this important aspect of leadership. Contingency Theories of Leadership, however, includes the highly interesting premise that there are situations where the behavioural roles of the formal leader are quite insignificant and its subtext aligns with the current zeitgeist of empowerment from below.

influence subordinates' perceptions and motivate them, which in turn leads to their performance and satisfaction. Therefore, the leader must use the appropriate style contingent on the situational moderator variables present.

This basic analysis is shown in Figure 1.0 below.

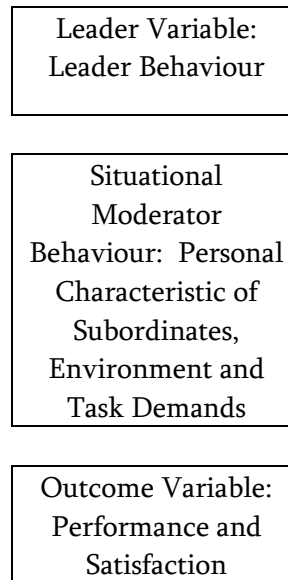


Figure 1.0: Relationship Between Leader Variable, Situational Moderator Variable and Outcome Variable

The research in this paper is designed to look specifically at Task Demands, and specifically, how the tasks faced by the group, by the organisation, and by its individual members affect and are affected by leadership. Indeed, the roles required by the tasks have consequences for the members' satisfaction, the group's productivity, and the organization's performance. This SMv (Task Demands) consists of those factors that are not within the control of the subordinate, but which are important to satisfaction or the ability to perform effectively. Therefore, assessment of the Task Demands makes it possible to predict the kind – and amount – of influence that specific leader behaviours will have on the motivation of subordinates.

Moreover, the requirements of Task Demands affect whether a leader is needed, who emerges as a leader, how the leader behaves, and what kinds of leadership behaviour result in greater productivity and satisfaction of the followers. Different tasks call for different abilities, and the leaders who emerge have different competencies that are relevant to the requirements of the different tasks (Bass, 1990). Moreover, the degree of structure, routineness, complexity, and interdependence of tasks and the intellectual, rather than the manipulative requirements, systematically alter the amount and kind of leadership that will be most effective.

RESEARCH METHODOLOGY TO ESTABLISH SMvs IN ROYAL AIR FORCE ENGINEERS

To establish SMvs in a military environment, Royal Air Force Engineers were chosen as a suitable sample. This cohort was selected for various reasons: leadership research has its origins in military organizations; the Royal Air Force takes leadership development very seriously and it was hoped that the response rate for the qualitative investigation would be

significant; and Royal Air Force Engineers are at the forefront of some of the most sophisticated technology available.

A Task Demand Questionnaire was designed, validated and administered to 360 engineers (Senior Officers, Junior Officers and Senior Non-Commissioned Officers) working in the IT/IS field. The Questionnaire asked the respondents to describe 10 of their tasks (i.e. Task Demands) that they must complete on a weekly basis. To ease the analysis, 3 themes were focused on which – it is understood – caused the greatest amount of frustration, dissatisfaction, uncertainty and stress: unrealistic tasks; poor communication; and lack of resources.

These tasks were then grouped and coded to determine the ‘Top 3’ tasks.

RESEARCH RESULTS

Tables: 1.0 to 8.0 show SMvs in Royal Air Force Engineers in 4 operating environments: Main Operating Bases; Integrated Project Teams; Training Environments; and Corporate Headquarters. In addition, the SMvs are shown corresponding to rank: Senior Officers; Junior Officers; and Senior Non-Commissioned personnel.

MAIN OPERATING BASE			INTEGRATED PROJECT TEAM			TRAINING ENVIRONMENT			HEADQUARTERS			
SENIOR OFFICER	Task	Team	Individual	Task	Team	Individual	Task	Team	Individual	Task	Team	Individual
	Preparing Aircraft	Squadron Management	Career Guidance	General Management	Developing New Procedures	Career Guidance	Introduction of New Training	Team Building Events	Career Guidance	Cost Savings	Change Management	Career Guidance

Table 1.0: Principal Task Demands of Senior Officers: Comparisons by Functional Area

MAIN OPERATING BASE			INTEGRATED PROJECT TEAM			TRAINING ENVIRONMENT			HEADQUARTERS			
JUNIOR OFFICER	Task	Team	Individual	Task	Team	Individual	Task	Team	Individual	Task	Team	Individual
	General Management	Welfare/discipline	Standards	Technical Engineering	Motivation	Management of Staff	Introduction of Training Syllabus	Teambuilding Events	Welfare	Manpower Issues	Motivation	Counseling

Table 2.0: Principal Task Demands of Junior Officers: Comparisons by Functional Area

MAIN OPERATING BASE			INTEGRATED PROJECT TEAM			TRAINING ENVIRONMENT			HEADQUARTERS			
SNCO	Task	Team	Individual	Task	Team	Individual	Task	Team	Individual	Task	Team	Individual
	General Engineering	Morale	Physical Fitness Levels	N/A	N/A	N/A	N/A	N/A	N/A	Training of Staff	Arranging Sport	Discipline

Table 3.0: Principal Task Demands of SNCOs: Comparisons by Functional Area

SENIOR OFFICER	TASK	TEAM	INDIVIDUAL
	<ul style="list-style-type: none"> ◆ Aircraft Management ◆ General Management ◆ Introduction of New Training ◆ Cost Savings 	<ul style="list-style-type: none"> ◆ Squadron Management ◆ Development of New Procedures ◆ Teambuilding ◆ Change Management 	<ul style="list-style-type: none"> ◆ Career Guidance/Personal Development of Subordinates

Table 4.0: Principal Task Demands of Senior Officers: Comparisons at Task/Team/Individual Level

JUNIOR OFFICER	TASK	TEAM	INDIVIDUAL
	<ul style="list-style-type: none"> ◆ General Management ◆ Technical Engineering ◆ Introduction of New Training ◆ Manpower Issues 	<ul style="list-style-type: none"> ◆ Welfare ◆ Discipline ◆ Personnel Management ◆ Teambuilding ◆ Motivating Staff 	<ul style="list-style-type: none"> ◆ Career Guidance/Personal Development of Subordinates

Table 5.0: Principal Task Demands of Junior Officers: Comparisons at Task/Team/Individual Level

SNCO	TASK	TEAM	INDIVIDUAL
	<ul style="list-style-type: none"> ◆ General Management ◆ Training of Subordinates 	<ul style="list-style-type: none"> ◆ Morale ◆ Arranging Sport 	<ul style="list-style-type: none"> ◆ Fitness of Staff ◆ Career Guidance/Personal Development of Subordinates ◆ Discipline

Table 6.0: Principal Task Demands of SNCOs: Comparisons at Task/Team/Individual Level

OFFICER
<ul style="list-style-type: none"> ◆ Management of Change ◆ Training ◆ Welfare/Discipline/Morale ◆ Career Guidance/Personal Development of Subordinates

Table 7.0: Principal Task Demands of Officers

SNCO
<ul style="list-style-type: none"> ◆ Management of Change ◆ Training ◆ Welfare/Discipline/Morale ◆ Career Guidance/Personal Development of Subordinates

Table 8.0: Principal Task Demands of SNCOs

REFERENCES

- Bass, B. M. (1990). *Handbook of leadership: a survey of theory and research*. New York: Free Press.
- Luthans, F. (2002). *Organizational Behavior (Ninth Edition)*. York: McGraw-Hill Irwin.
- Yukl, G. (2002). *Leadership in organizations*. 5th Edition, Englewood Cliffs, NJ: Prentice Hall.

LEADING CHANGE IN COMPLEX ENVIRONMENTS: THE SKILLS APPROACH TO LEADERSHIP

BRIAN HOWIESON¹ & HOWARD KAHN²

Royal Air Force¹, Heriot-Watt University²

tdf-oc@boulmer.raf.mod.uk, h.kahn@hw.ac.uk

ABSTRACT

Similar to the trait approach to leadership, the skills approach to leadership takes a 'leader-centred' perspective. While personality certainly plays an integral role in leadership, the Skills Approach suggests that knowledge and abilities are needed for effective leadership (Northouse, 2004). A significant number of studies on 'leadership skills' began to appear in the academic literature from the early 1990s; these studies were based (primarily) on Katz's (1955) article in *Harvard Business Review*, 'Skills of an Effective Administrator'. Katz (1955) advanced that effective administration (i.e. leadership) depends on 3 basic personal skills: technical, human and conceptual. Northouse (2004) defines technical skill as having knowledge about and being proficient in a specific type of work or activity, human skill as having knowledge about and being able to work with people, and conceptual skill as having the abilities to work with ideas and concepts.

Today, engineers in the Royal Air Force work in complex environments, often under significant time pressures. Moreover, they are asked to be change agents and balance the demands and needs of many stakeholders including superiors, educated (and capable) subordinates, industry suppliers (contractors), governmental departments, taxpayers, and customers. If productivity and work-unit harmony is to be maximized, someone has to manage this change; consequently, that someone had better have technical, human and conceptual skills.

The purpose and principal aim of this paper is to apply the Skills Approach to Leadership to Royal Air Force Engineers working in large Integrated Project Teams (IPTs). In this way, it is hoped to suggest how individuals in this cohort may enhance their leadership abilities. In detail, the paper will:

- Advance the research undertaken by Howieson (2004), by rating (quantitatively) the principal tasks demands faced Royal Air Force Engineers in IPTs.
- Describe leadership – in this context-specific environment – from a 'skills' perspective, concentrating specifically on the required individual attributes and competencies.
- Provide a structure for understanding the nature of effective leadership, based on the quantitative information revealed above.

It is hoped that this analysis will allow researchers and practitioners alike to comprehend further what skills will be required to achieve leadership outcomes (the management of change and work-unit performance) in a complex environment.

KEYWORDS

Leadership, Skills, Royal Air Force, Engineers

INTRODUCTION

This research is undertaken within the context of a military domain, specifically, the Royal Air Force. In terms of size, the number of people in the Royal Air Force is considerable: as at 1st February 2004, there were 53 230 personnel in the Service. When one also considers civilians and dependants, this figure could easily be inflated to 200 000. Therefore, the size of the Royal Air Force means that leaders (even rather junior ones) often command large numbers of subordinates, and crucially, leadership at all levels tends to have a large impact on the performance and satisfaction of personnel. Moreover, the role of the military in world affairs has recently expanded: while many thought that the military's role would be diminished after the fall of the Berlin Wall, the military has been more active in recent years than during the days of the Cold War. Consider, for example, the role of the Royal Air Force in the Persian Gulf in the early 1990s, followed by major involvements in Bosnia, Kosovo and then back to the Persian Gulf in 2003. Today, the war on terrorism and current operations around the globe continue to illustrate the use of the Air Force as a key element of national power. Moreover, the Royal Air Force is similar to other large public sector organizations in the UK in that it has tendencies toward a hierarchical bureaucracy and must remain responsive to the taxpayer. It differs significantly, however, in that the military ultimately exists to fight and win the nation's wars. Critically, and despite the headline-grabbing high-tech aspects of recent armed conflict, waging war continues to be an intensely human endeavour: as a result, the military needs leaders (not managers, programme directors, or supervisors) to accomplish its primary mission. At the lowest level, military leadership can be the difference between life and death for many people. At the highest level, the survival of our nation relies upon the leaders in the military. Thus, culturally, leadership was, is, and will continue to be a mainstay of the military. Indeed, long before leadership became a topic of discussion in the corporate, academic, or even public realm, militaries have been enamoured by leadership (e.g. Sun Tzu, *The Art of War*, c.500 BC). The military emphasizes the importance of leadership and strives to develop leaders through formal education, operational assignments, and self-development.

In summary then, the military is unique in that it is a huge and increasingly diverse organization, which plays a key role in both the nation and the world. It is a traditionally hierarchical institution that finds itself in an uncertain, volatile world executing missions with very high consequences.

THE RESEARCH

The Task Demands Facing Royal Air Force Engineers – Qualitative Research

For this research, Royal Air Force Engineers were chosen as a suitable sample. This cohort was selected for various reasons: leadership research has its origins in military organizations; the Royal Air Force takes leadership development very seriously and it was hoped that the response rate for the quantitative and qualitative investigation would be significant; and Royal Air Force Engineers are at the forefront of some of the most sophisticated technology available.

In July 2004, 300 questionnaires were sent – by Headquarters Strike Command at Royal Air Force High Wycombe – to 300 Engineers, employed in IPTs (i.e. organizations that work with the Ministry of Defence, Civil Servants, Procurement Professionals, Private Sector (Defence Industries) and many other stakeholders). This sample varied in rank from Senior Non-Commissioned personnel (SNCO) to Officers (both Junior and Senior). For ease of analysis, Table 1.0 offers a comparison of these Air Force ranks (SNCO, Junior Officer, Senior Officer) with their civilian equivalent in terms of remuneration, responsibility, and span of control.

Rank	Civilian Equivalent
SNCO	Middle manager/senior supervisor/purchasing manager/personnel officer/training manager with responsibility for up to 50 staff. Frequently very highly qualified in a trade or profession and very experienced in training and instructing others.
Junior Officer	Deputy/assistant manager, operations manager. Professionally qualified and will be trained and experienced in general management and team leadership techniques.
Senior Officer	Branch or functional manager/department head – total responsibility of workforce of around 100 to 200.

Table 1.0: Comparison of Royal Air Force Rank with Civilian Equivalent

Two hundred and fifty eight responses were received giving a response rate of 86 %. The data was analysed by a Content Analysis. This analysis revealed that 4 principal task demands were found to be:

- The Management of Change (MofC).
- Introduction of Training Programmes (IofT) associated with the Management of Change.
- Welfare/Discipline/Morale issues (WDM).
- Personal Development of Subordinates/Career Guidance (PDCG).

The Task Demands Facing Royal Air Force Engineers – Quantitative Research

In November 2004, 130 questionnaires were sent to Engineers who were again employed in IPTs (a different sample). The respondents were asked to indicate - in a Likert Scale - how 'simple versus complex', 'routine versus challenging', and 'varied versus repetitive', were the principal task demands established from the qualitative research above.

Eighty-five responses were received giving a response rate of 65%. Fifty-five of these responses were from SNCOs, 30 from Officers. The data was analyzed using the program *Statistical Software for the Social Sciences* (Version 11.1).

It was deemed important – from the outset – to determine if the Officers perceived the tasks to be the same as the subordinates. In other words, it was important to check if the responses were isomorphic. Importantly, a major weakness of leadership theory (and research) to date is that only subordinates have been asked to comment on task demands. In other words, it is important to determine if there is inter-rater agreement.

The results are as follows:

The Management of Change (MofC):

- Officers and SNCOs judge (equally) that the MofC is more complex than simple.
- Officers and SNCOs judge (equally) that the MofC has an equal rating between routine and challenging.
- Officers and SNCOs judge (equally) that the MofC has an equal rating between varied and repetitive.

Introduction of Training Programmes (IofT):

- Officers see the IofT as slightly more complex than SNCOs.
- Officers and SNCOs judge (equally) that the IofT has an equal rating between routine and challenging.
- Officers and SNCOs judge (equally) that the IofT has an equal rating between varied and repetitive.

Welfare/Discipline/Morale issues (WDM):

- SNCOs see WDM issues as slightly more complex than do Officers.
- Officers and SNCOs judge (equally) that the WDM issues have an equal rating between routine and challenging.
- Officers judge WDM issues as slightly more varied than SNCOs.

Personal Development of Subordinates/Career Guidance (PDCG):

- Officers see PDCG issues as more complex than SNCOs.
- Officers and SNCOS judge (equally) that PDCG issues have an equal rating between routine and challenging.
- Officers and SNCOS judge (equally) that PDCG issues have an equal rating between varied than repetitive.

In general, while there are some slight differences in the data, it is accepted that the results are isomorphic and, therefore, that there is inter-rater agreement (as analysed by cross-tabulation and by Mann-Whitney (non-parametric) tests.

The Task Demands Facing Royal Air Force Engineers – Complex/Challenging/Repetitive?

From the research, it was established further that:

- The most complex tasks were the management of change.
- The most challenging tasks were the career guidance/personal development of subordinates.
- The most repetitive tasks were welfare/discipline/morale issues.

In relative terms, 'IofT' was regarded as straightforward as there are a significant amount of private sector training providers who could help implement training solutions to meet customer needs.

THE SKILLS APPROACH TO LEADERSHIP

The impetus for research on skills was a classic article published by Robert Katz in the Harvard Business Review in 1955, entitled "*Skills of an Effective Administrator*". Katz's article appeared at a time when researchers were trying to identify a definitive set of leadership traits (Northouse 2004, p35). Katz's approach was an attempt to transcend the trait problem by addressing leadership as a set of developable skills. As pointed out earlier, Katz suggested that effective administration (i.e. leadership) depends on 3 basic personal skills: technical, human, and conceptual. Katz argued that these skills are quite different from the traits or qualities of leaders. Of note, skills imply what leaders can accomplish whereas traits imply who leaders are (i.e. their innate characteristics).

This idea was advanced further in 2000, when Mumford *et al* published a comprehensive skills-based model of leadership, which was based on research that argued that a leader's effectiveness depends on his/her ability to solve complex organizational problems. The model is characterized as a *capability* model because it examines the relationship between a leader's knowledge and skills (i.e. capabilities) and the leader's performance. Moreover, they (Mumford *et al*) argued that leadership capabilities can be developed over time and through education and experience (Northouse 2004, p30). This model is shown, in simple terms, at Figure 1.0.

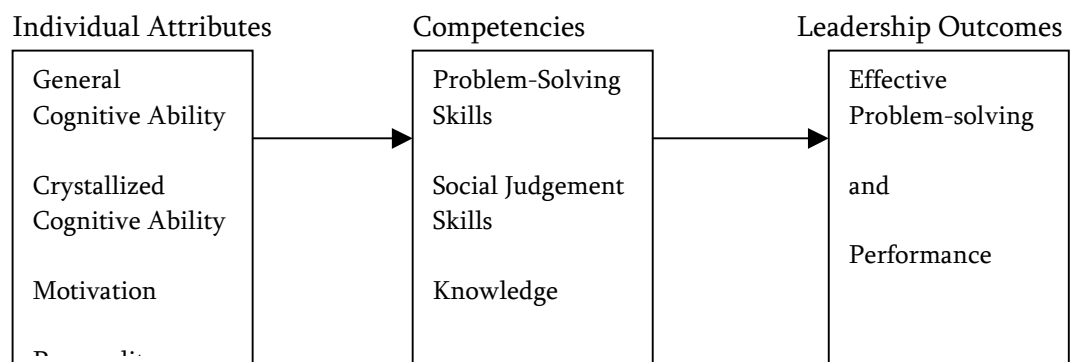


Figure 1.0: Three Components of the Skills Model

(Source: The Skills Approach to Leadership, P G Northouse (2004, p 40), SAGE Publications.)

The skills approach suggests that many individuals have the potential for leadership. If people are capable of learning from their experiences, they can acquire leadership. Rather than emphasizing what leaders do, the skills approach frames leadership as the capabilities (knowledge and skills) that make effective leadership possible.

From Figure 1.0:

- The individual attributes that have an impact on leadership skills and knowledge are general cognitive ability, crystallized cognitive ability, motivation, and personality. These attributes play an important role in the skills model - complex problem-solving is a very difficult process and becomes more difficult as people move up in the organization.

- In terms of competencies, problem-solving skills, social judgement skills, and knowledge are at the heart of the skills model. These 3 competencies are the key factors that account for effective performance.
- Effective problem-solving and performance represent the 'outcomes' of leadership. These outcomes are strongly influenced by the leader's competencies (i.e. problem-solving skills, social judgement skills, and knowledge). When leaders exhibit these competencies, they increase their chances of problem-solving and overall performance.

In the model, performance outcomes refer to how well the leader has done her or his job. To measure performance, standard external criteria are employed (e.g. team performance, reliability, productivity, contribution to organizational goals, organizational citizenship behaviour, etc.).

The skills approach works by providing a *map* of how to reach effective leadership in an organization: leaders need to have problem-solving skills, social judgement skills, and knowledge. Workers can improve their capabilities in these areas through training and experience. Although each leader's personal attributes affect his or her skills, it is the leader's *skills* themselves that are most important in addressing organizational problems. The skills approach is primarily descriptive - it describes leadership from a skills perspective. Rather than providing prescriptions for success in leadership, the skills approach provides a structure for understanding the nature of effective leadership. At the heart of the model are 3 competencies: problem-solving skills, social judgement skills, and knowledge. Through job experience and training, leaders can improve their abilities to become better problem solvers and more effective leaders. The skills approach is a leader-centred model that stresses the importance of developing particular leadership skills. In addition, when leadership is framed as a set of skills, it becomes a process that people can study and practice to become better at performing their jobs (Northouse, p50).

Finally, the skills approach provides a structure that is very consistent with the curricula of most leadership education programmes. Leadership education programmes throughout the country have traditionally taught classes in creative problem-solving, conflict resolution, listening, and teamwork (Northouse, 2004, p51). Clearly, the skills approach provides a structure that helps to frame the curricula of leadership education and development programmes. From a wider perspective, the skills approach may be used in the future as a template for the design of extensive leadership development programmes for engineers in the Royal Air Force.

UTILISING THE SKILLS APPROACH TO LEADERSHIP

Having determined the four principal demands made of Officers and SNCOs, namely the management of change, the introduction of training programmes associated with the management of change, welfare/discipline/morale issues, and the personal development of subordinates/career guidance, we turn our attention to how leaders can best meet these demands. The skills approach to leadership indicates that, since it is a skill, leadership can be taught, learned and developed (though, as Peele (2005) notes, we should remember that it is still uncertain whether leadership skills can be taught or are the result of background, upbringing, family, etc.; in contrast, Useem (2003) suggests that staff at all levels within an

organization have the potential to be leaders: 'Everybody can lead at every level; there are no excuses'.

The skills approach to leadership suggests that it is the *interpersonal* skills of leaders which need to be developed and utilised in organizations undergoing downsizing, reorganizations, redeployments and other organizational transitions (e.g. Fleenor, 2003, Wright and Taylor, 1985). Interpersonal skills such as listening, creative problem-solving, conflict resolution skills, persuasiveness, social sensitivity, and much more 'are needed to influence people, avoid unwanted influence, develop co-operative relationships, establish and maintain networks, understand individuals, facilitate teamwork, and resolve conflicts' (Yukl, 2002). Despite these persuasive arguments, when we examined the online ISI database *Web of Knowledge*, and the titles of articles there, we found that charismatic leadership had 85 references, transactional leadership 33, transformational leadership 136, emotional leadership 2, and the skills approach to leadership none. It appears that little research has, to date, been done in this area.

We would contend that interpersonal skills are needed to lead and effectively meet the needs of a team of highly-educated and competent engineers, and others, such as have been the subject of this research. They themselves similarly require to develop these skills if they are become effective leaders. Wright and Taylor (1984) suggest that three main interpersonal skills are necessary for such leaders:

1. Diagnostic skills, needed to identify what needs to be done in order to maintain, and if necessary improve, high levels of work performance.
2. Perceptual skills, required in order to determine what factors affect a subordinate's work performance. This skill appears to be related to emotional intelligence, which will enable a leader to recognise their own feelings and those of others, to motivate themselves and manage emotions in their relationships.
3. Behavioural skills are needed by leaders for three reasons. Firstly, to enable leaders to use verbal and non-verbal techniques in order to interact adequately with their colleagues. Secondly, to ensure that their verbal and non-verbal interactions have been properly sequenced in order to get their message across. Thirdly, to make certain that the subordinate has been allowed the appropriate amount of participation and has been shown an adequate amount of consideration.

From their research, Wright and Taylor (1998) reach six conclusions:

1. Traditional leadership theory is limited because it does not take into account the skills that effective leaders require.
2. In developing a skills approach to leadership it is possible to describe and consequently train leaders to deal with a wide variety of situations. These include the management of change, staff training, dealing with staff welfare, discipline and morale and career guidance, and the personal development of subordinates.
3. That such skills as are required can be most effectively acquired by practice, with feedback and guidance. Role-playing is seen as the best method for achieving these skills.
4. Feedback and guidance should be given by knowledgeable interpersonal skills tutors.
5. Such tutors may not be easily available
6. Such tutors can themselves be developed through practice with feedback and guidance via tutor training courses.

The cohort of Officers and SNCOs we examined perceive that they face four major task demands. How can the skills approach to leadership help them to meet these four tasks and develop themselves as leaders?

The management of change and introducing training programmes

If we look at how staff should be prepared for and supported through the change process, from our experience we suggest that the eight stages which have been proposed by John Kotter (1995) are achievable by the leader who employs the skills approach to leadership. The eight stages are as follows:

1. Establish a sense of urgency. This is achieved when 75% of senior management is honestly convinced that 'business as usual' is no longer an acceptable plan.
2. Form a powerful guiding coalition of believers, who should be relatively powerful in terms of the roles they hold in the organization.
3. Create a change vision which can be communicated in five minutes or less and provokes a reaction that signifies both understanding and interest.
4. Communicate the change vision. A transformation effort requires most members to understand, appreciate, commit and try to make the change effort happen. To do this the leader should make use of every existing communication channel and opportunity.
5. Empower others to act on the vision. Kotter states that this entails several different actions including allowing organization members to make changes in their areas of involvement, the allocation of budget money to the new initiative, allowing time to talk about the vision, changing the way work is organised in order to put people where the effort needs to be, and freeing up key people from existing responsibilities so that they can concentrate on the new effort.
6. Create short-term wins. This helps keep the urgency level up.
7. Consolidate improvements and sustain the momentum for change. Kotter warns that victory should not be declared too soon and that leaders of change must go into the process believing that their efforts will take years to complete.
8. Institutionalise the new approaches. This requires that the culture of the organization itself is altered so that the changes made become part of its 'bloodstream'. Two techniques help this occur. First, a conscious attempt must be made to show people how the new approaches, behaviours and attitudes have helped improve the organization. Second, the organization must ensure that the next generation of leaders believes in and embodies the new ways.

Kotter stresses the importance of following the steps in sequence. The first four steps above 'unfreeze' the status quo. Stages five to seven introduce the new practices. The final step 'grounds the change in the corporate culture and makes them stick' (Kotter, 1996). The leader who follows the skills approach, with its emphasis upon the interpersonal aspects of leadership, will use the interpersonal skills noted earlier in all eight stages of the change process. While there certainly has to be support from those directly outside the team developing and implementing the change, the leader must use the techniques outlined to support the team and meet the organization's aims. Of course, it may be necessary to provide individual team members with training courses and programmes to help them manage change.

Welfare, discipline and morale issues

When required to discipline staff, the skills-based leader will make use of progressive discipline. This is an approach in which discipline is carried out so that penalties increase if the employee does not correct the problems. Usually this consists of firstly talking to the individual, then providing a written warning, followed by suspension without pay (though suspension with pay is sometimes used to give the employee time to consider their position), and finally termination of employment. In most cases these procedures are done in conjunction with human resources/personnel staff and follow the organization's disciplinary code. Skills-based leadership requires that the leader is aware of the individual's (and team's) problems and at the very least discusses these with the problem employee as soon as possible. Again, the leader is providing feedback to the individual. A skills-based leader will not avoid dealing with difficult personnel.

Skill-based leadership requires that leaders offer supportive leadership and ensures, as best as they can, a positive workplace climate. Such a leader ensures that team members are clear about their role (role clarity), that there is a positive culture of co-worker interaction, and that decisions are based on consultation.

As regards employee welfare, it is important that a leader determines what employees want and what they feel is missing or negative in the organization. This is achieved by talking to and listening to colleagues. The leader will seek to ensure that the employer offers adequate employee welfare, as near as possible to that desired by the team. Employee welfare covers such areas as safety at work, risk assessment, health programmes, crisis management, equal opportunities, etc. While these are set at the organizational level, leaders recognise that employee welfare is important in maintaining job satisfaction and performance. Simple tasks such as ensuring adequate and clean toilets, the provision of drinking water, satisfactory ventilation and general cleanliness may fall to a leader.

What does the skills approach to leadership suggest should be done to ensure that the morale of the team is maintained at a high level? Klann (2004) suggests that there are a number of techniques which the skills-oriented leader can use. A number of them have been mentioned above. They may not fit well with the cultures of UK organizations, but are certainly worth mentioning. Keep up-to-date with the team's thinking by holding a regular (weekly) meeting. Have discussions where new ideas can be generated, and problems solved. Celebrate team members' birthdays. Get together to celebrate special events and take the team on a field trip. Do some form of work for the local community. Eat together as a team and designate an area as a 'team room'.

Personal development of subordinates and career guidance

How can a skills-based leadership help colleagues with their personal development and with career guidance? The best leaders we have met provide team members with a chance to develop new skills, perhaps by ensuring they are transferred to other teams doing a different type of work. They consult with their colleagues and recommend that staff go on appropriate development courses. They ask their colleagues what their goals are (and understand that very often staff do not know, or cannot articulate, what they want). They provide feedback to their team, which they meet regularly, and to individuals, on performance. Where possible, they award staff for good work, and make certain that the work of their best team members is made known outside the team, to others within the organization. In order to do all this, leaders will especially have to use their communication skills.

SUMMARY

In this paper we have examined the principal task demands made of three groups of highly-qualified and -trained engineers working in the Royal Air Force, as they perceive them to be. These task demands were seen as important attributes of the team leaders of these engineers and in the potential leadership development of the engineers themselves. We have explained the main attributes of the skills approach to leadership and shown how the principal task demands made of engineers working in the Royal Air Force can be met by using the skills approach to leadership. We have also indicated that using the skills approach to leadership will enable these engineers to enhance their leadership abilities. The results of this study should not be confined to the RAF engineers. We believe that they are as valid in any complex environment where the twin desires of the successful management of change and of high work-unit performance are desired. Further research in other organizations should be carried out in an attempt to support the results shown here. Such research will also indicate the validity of the skills approach to leadership, which involves a leader using interpersonal skills such as listening to colleagues and showing interest, respect, support and empathy. Not only will these skills improve team performance, they will also help reduce the stress which is often associated with teams operating in an environment of complex change.

REFERENCES

- Fleenor, J. (2003) Creative leadership, tough times: soft skills make the difference. <http://www.ccl.org/CCLCommerce/pdf/research/cclcreative.pdf> (accessed May 2005).
- Howieson, W. B. (2004). The task demands facing military engineers: new perspectives on the situational moderator variable in leadership research. In *Leadership Refrains: Encounters, Conversations and Enhancements*. (Eds: Williamson, D., Wood, M., Case, P., Bolden, R., Martuarno, A., & Gosling, J.) Studying Leadership: 3rd International Workshop, University of Exeter.
- Katz, R. L. (1955, January – February). Skills of an effective administrator. *Harvard Business Review*, 33-42.
- Klann, G. (2004). *Building Your Team's Morale, Pride, and Spirit*. Center for Creative Leadership E-Book.
- Kotter, J. P. (1995). Leading Change: Why transformation efforts fail. *Harvard Business Review*, 61, March-April.
- Kotter, J. P. (1996). *Leading Change*. Boston, Mass.: Harvard Business School Press.
- Mumford, M.D., Zaccaro, S. J., Connelly, M. S., & Marks, M. A. (2000). Leadership skills: conclusions and future directions. *Leadership Quarterly*, 11(1), 155-170.
- Northouse, P. G. (2004). *Leadership: Theory and Practice (3rd Edition)*. Sage Publications: Thousand Oaks, CA.
- Useem, M. (2003). *Why Everyone in an Enterprise Can -- and Should -- Be a Leader*. <http://knowledge.wharton.upenn.edu/index.cfm?fa=viewArticle&id=893> (accessed May 2005).
- Wright, P. L. & Taylor D. S. (1984). *Improving leadership performance*. Prentice-Hall: Englewood Cliffs, N.J.
- Wright, P. L. & Taylor D. S. (1998). The implications of a skills approach to leadership. *Journal of Management Development*, 4, 3, 15-28.
- Yukl, G. (2002) *Leadership in Organizations*. Prentice-Hall: Upper Saddle River, N.J.

BIBLIOGRAPHY

- Abdel-Halim, A. A. (1981). Personality and task moderators of subordinate responses to perceived leader behaviour. *Human Relations*, 73-88.
- Aguinis, H., Nesler, M. S., Hosoda, M., & Tedeschi, J. T. (1994). The use of influence tactics in persuasion. *Journal of Social Psychology*, 124, 4, 429-438.
- Algattan, A. R. A. (1985). Test of the path-goal theory of leadership in the multinational domain. Paper, Academy of Management, San Diego, CA.
- Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modelling in practice: A review and recommended two-step approach. *Psychological Bulletin*, 103, 411-423.
- Arbuckle, J. L., & Wotkhe, W. (1999). *AMOS 4.0 user's guide*. Chicago: Smallwaters.
- Ashour, A. S. (1973). The contingency model of leadership effectiveness: An evaluation. *Organisational Behaviour and Human Performance*, 9, 339-355.
- Basdarraco, J. (2002). *Leading Quietly – an Unorthodox Guide to Doing the Right Thing*. Harvard Business School Press.
- Bales, R. F. (1950). A set of categories for the analysis of small group interaction. *American Sociological Review*, 15, 257-263.
- Barnard, C. I. (1938). *The functions of the executive*. Cambridge, MA: Harvard University Press.
- Barnard, C. I. (1952). A definition of authority. In R. K. Merton, A. P. Gray, B. Hockey, & H. C. Selven (Eds.), *Reader in bureaucracy*. New York: Free Press.
- Baron, R. A. (1986). *Behaviour in Organizations*, 2nd ed., Allyn & Bacon: Boston.
- Barton, R. S. (1984). Cognitive and developmental aspects of empowerment: An empirical comparison between citizen leaders and non-leaders (attribution, self-efficacy). Doctoral Dissertation, University of Oregon.
- Bass, B. M. (1965). *Organizational psychology*. Boston: Allyn & Bacon.
- Bass, B. M. (1985). *Leadership and performance beyond expectations*. New York: Free Press.
- Bass, B. M. (1990). From transactional to transformational leadership: learning to share the vision. *Organizational Dynamics*, Winter 1990, 272-273.
- Bass, B. M. (1990). *Handbook of leadership: a survey of theory and research*. New York: Free Press.
- Bass, B. M., Valenzi, E. R., Farrow, D. L., & Solomon, R. J. (1975). Management styles associated with organizational, task, personal, and interpersonal contingencies. *Journal of Applied Psychology*, 60, 720-729.

- Bass, B. M., & Avolio, B. (1993). Transformational Leadership: a response to critiques. In M Chemmers & R Ayman (Eds.), *Leadership Theory and Research: perspectives and directions* (pp. 81-107). Orlando, FL: Academic Press.
- Behling, D., & Starke, F. A. (1973). The postulates of expectancy theory. *Academy of Management Journal*, 16, 373 – 388.
- Belbin, M. (1993). *Team Roles at Work*. London: Heinemann.
- Bennis, W. (1959). Leadership theory and administrative behaviour: The problem of authority. *Administrative Science Quarterly*, 4, 259 – 260.
- Bennis, W. (1999). The end of leadership. *Organizational Dynamics*, Summer 1999, 71-80.
- Benne, K. D., & Sheats, P. (1948). Functional roles of group members. *Journal of social issues*, 2, 42-47.
- Bennis, W. G., & Nanus, B. (1985). *Leaders: The strategies for taking charge*. New York: Harper & Row.
- Bentler, P. M. (1983). Multivariate analysis with latent variables: causal modelling. *Annual Review of Psychology*, 31, 419-456.
- Bettin, P. J., & Kennedy, J. K., Jr. (1990). Leader experience and leader performance: Some empirical support at last. *Leadership Quarterly*, 1, 219 – 228.
- Bowers, D. G. & Seashore, S. E. (1966). Predicting organisational effectiveness with a four-factor theory of leadership' *Administrative Science Quarterly*, 11, 238-263.
- Burns, J. M. (1978). *Leadership*. New York: Harper & Row.
- Browne, M. W., & Cudeck, R. (1989). Alternative ways of assessing model fit. In K. A. Bollen & J. S. Long (Eds.), *Testing Structural Equation Models* (pp 445-455). Newbury Park, CA: Sage.
- Bryman, A. (2004). *Social Research Methods (2nd Revised Edition)*. Oxford University Press.
- Byrne, B. M. (1994). *Structural equation modelling with EQs and EQS/Windows: Basic concepts, applications and programming*. Thousand Oaks, CA: Sage.
- Calder, B. J. (1977). An attribution theory of leadership. In B. M. Staw & G. R. Salancik (Eds.), *New Directions in Organisational Behaviour* (pp. 179-204). Chicago: St. Clair.
- Campbell, J. P. (1977). The cutting edge of leadership: an overview. In J. Hunt and L. Larson (Eds.), *Leadership: The cutting edge*. Carbondale, IL: Southern Illinois Press.
- Carlyle, T. (1841). *Heroes and hero worship*. Boston: Adams.
- Cartwright, D & Zander, A. (1960). *Group Dynamics – Research and Theory*. Evanston, IL: Row, Peterson.

- Coffey, A., & Atkinson, P. (1996). *Making Sense of Qualitative Data*. Thousand Oaks, CA: Sage.
- Cohen, S. G. (1991). *Teams and teamwork: future directions*. Los Angeles: Centre for Effective Organizations, University of Southern California.
- Conger, J. A., & Kanungo, R. N. (1987) Towards a behavioural theory of charismatic leadership in organizational settings. *Academy of Management*, 12, 637-647.
- Craig, R. D. (1983). Policy capturing in the evaluation of self-esteem as a moderator of the relationship between supervisory style and subordinate satisfaction in the path-goal theory of leadership. *Dissertation Abstracts International*, 44 (9B), 2928.
- Crouch, A., & Yetton, P. (1987). Manager behaviour, leadership style, and subordinate performance: An empirical extension of the Vroom-Yetton conflict rule. *OB and Human Decision Processes*, 39, 384-396.
- Dessler, G. (1973). *An investigation of the path-goal theory of leadership*. Doctoral Dissertation. Baruch College, The University of New York.
- Dessler, G., & Valenzi, E. R. (1977). Initiation of structure and subordinate satisfaction: A path analysis test of path-goal theory. *Academy of Management Journal*, 20, 251-259.
- Den Hartog, D. N., House, R. J., Hanges, P. J., Ruiz-Quintanilla, S. A., Dorfman, P. W., Dickson, M., & Associates. (1999). Cultural specific and cross-culturally generalizable implicit leadership theories: Are the attributes of charismatic transformational leadership universally endorsed? *Leadership Quarterly*, 10, 219 – 256.
- DfES (2002) *Government Response to the Report of the Council for Excellence in Management and Leadership*. Nottingham, DfES Publications.
- Diamantopoulos, A., & Schlegelmilch, B. (1997). *Taking the Fear Out of Data Analysis: A Step-by-Step Approach*. Thomson Learning; New Edition.
- Dowd, J. (1936). *Control in human societies*. New York: Appleton-Century.
- Downey, H. K., Sheridan, J. E., & Slocum, J. W., Jr (1975). Analysis of relationships among leader behaviour, subordinate job performance and satisfaction: A path-goal approach. *Academy of Management Journal*, 18, 53-262.
- Drath, W. H., & Palus, C. J. (1994). *Making common sense: Leadership as meaning-making in a community of practice*. Greensboro, NC: Center for Creative Leadership.
- Dvir, T., & Shamir, B. (2003). Follower developmental characteristics as predicting transformational leadership: a longitudinal field study. *Leadership Quarterly*, 14, 3, 327-344.
- Eden, D., & Leviatan, U. (1975). Implicit leadership theory as a determinant of the factor structure underlying supervisory behaviour scales. *Journal of Applied Psychology*, 60, 736 – 741.

- EFQM (2000) *Assessing for Excellence: A practical Guide for Self-Assessment*, Brussels: Eurorpean Foundation for Quality Management.
- Ettling, J. T, & Jago, A. G. (1988). Participation under conditions of conflict: More on the validity of the Vroom-Yetton Model. *Journal of Management Studies*, 25, 73-83.
- Etzioni, A. (1961). *A comparative analysis of complex organizations*. New York: Free Press.
- Evans, M. G. (1968). *The effects of Supervisory Behaviour upon Worker Perception of their Path-Goal Relationships*. Doctoral Dissertation: Yale University.
- Evans, M. G. (1969). Conceptual and operational problems in the measurement of various aspects of job satisfaction. *Journal of Applied Psychology*, 53, 93-101.
- Evans, M. G. (1970). The effects of Supervisory Behaviour upon the path-goal relationship. *Organizational Behaviour and Human Performance*, 5, 277 - 298.
- Evans, M. G. (1974). Extensions of path-goal theory of motivation. *Journal of Applied Psychology*, 59, 172 – 178.
- Evans, M. G. (1986). *Path-goal theory of leadership: A Meta analysis*. Unpublished Pare. Toronto: University of Toronto.
- Evans, M. G. (1996). R.J. House's "A path-goal theory of leader effectiveness". *Leadership Quarterly*, Volume 7, Issue 3 , Autumn 1996.
- Farrow, D, L., & Bass, B.M. (1977). *A phoenix emerges: The importance of manager and subordinate personality in contingency leadership analyses (Tech. Rep. 77-1)*. Rochester, NY: University of Rochester.
- Festinger, E. A. (1980). *Retrospections on social psychology*. Oxford, UK: Oxford University Press.
- Field, R. H. G. (1979). A critique of the test of the Vroom-Yetton contingency model of leadership behaviour. *Academy of Management Review*, 4, 249-257.
- Field, R. H. G. (1982). A test of the Vroom-Yetton normative model of leadership. *Journal of Applied Psychology*, 67, 523-532.
- Field, R. H. G., & House, R. J. (1990). A test of the Vroom-Yetton model using manager and subordinate reports. *Journal of Applied Psychology*, 75, 362-366.
- Field, R. H. G., Read, P. C. & Louviere, J. J. (1990). The effect of situation attributes on decision making in the Vroom-Jago model of participation. *Leadership Quarterly*, 1, 165-176.
- Fielder, F.E. (1964). A contingency model of leadership effectiveness. In L. Berkowitz (Ed.), *Advances in experimental psychology*. New York: Academic Press.
- Fielder, F.E. (1967). *A Theory of Leadership Effectiveness*. New York: McGraw-Hill.

- Fielder, F.E. (1973). The contingency mode: A reply to Ashour. *Organizational Behavior and Human Performance*, 9, 356-368.
- Fielder, F.E. (1977). A rejoinder to Schriesheim and Kerr's premature obituary of the contingency model. In J. G. Hunt & L. L. Larson (Eds.), *Leadership: The cutting edge* (pp. 45-51). Carbondale: Southern Illinois University Press.
- Fielder, F.E. (1986). The contribution of cognitive resources to leadership performance. *Journal of Applied Psychology* (pp. 59-112). New York: Academic Press.
- Fielder, F.E. (1992). Time-based measures of leadership experience and organisational performance: A review of research and a preliminary model. *Leadership Quarterly*, 3, 5-23.
- Fielder, F. E., & Chemers, M. M. (1982). *Improving leadership effectiveness: The leader match concept* (2nd ed.). New York: John Wiley.
- Fielder, F. E., & Garcia, J. E. (1987). *New approaches to leadership: Cognitive resources and organisational performance*. New York: John Wiley.
- Fielder, F. E., & House, R. J. (1988). *Leadership: a report of progress*. In C Cooper (Ed.), *International review of industrial and organizational psychology*. Greenwich, CT: JAI Press.
- Filley, A. C. & House, R. J. (1969). *Managerial Process and Organizational Behavior*. Glenview, IL: Scott Foresman.
- Filley, A. C., House, R.J. & Kerr, S. (1976). *Managerial Processes and Organizational Behavior*. 2nd Ed., Glenview: IL.
- Fisher, B. M., & Edwards, J. E. (1988, August). Consideration and initiating structure and their relationships with leader effectiveness: A meta-analysis. *Proceedings of the Academy of Management*, 201-205.
- Fleishman, E. A. (1953). The description of supervisory behaviour. *Personnel Psychology*, 37, 1-6.
- Fleishman, E. A. (1957). A leader behaviour description for industry. In R. M. Stogdill & A. E. Coons (Eds.), *Leader Behaviour: Its description and measurement*. Columbus: Ohio State University, Bureau of Business Research.
- Fleishman, E. A. & Harris, E. F. (1962). Patterns of leadership behaviour related to employee grievances and turnover. *Personnel Psychology*, 15: 43-56.
- Fleishman, E. A. (1971). Twenty years of consideration and structure. In *Symposium on Contemporary Development in the Study of Leadership*. Carbondale: Southern Illinois University.
- Fleishman, E. A. (1972). *Examiner's manual for the supervisory behaviour description questionnaire*. Washington, DC: Management Research Institute.

- Fleishman, E. A., Mumford, M.D., Zaccaro, S. J., Levin, K. Y., Korotkin, A.L., & Hein, M.B. (1991). Taxonomic efforts in the description of leader behaviour: A synthesis and functional interpretation. *Leadership Quarterly*, 2, 245-287.
- Fornell, C., & Larcker, D. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, 28(Feb): 39-50.
- Fornell, C. (1982). *Second Generation of Multivariate Analysis: Measurement and Evaluation*. Greenwood Press.
- Frost, D. C. (1983). Role perceptions and behaviours of the immediate superior moderating effects on the prediction of leadership effectiveness. *Organizational Behavior and Human Performance*, 31, 123-142.
- Fulk, J., & Wendler, E. R. (1982). Dimensionality of leader-subordinate interactions: A path-goal investigation. *Organizational Behavior and Human Performance*, 30, 241 – 264.
- Fulmer, R.M. (1977) The evolving paradigm of leadership development, *Organisational Dynamics*, 25 (4): 59-73.
- Gabaro, J. J. (1985, May - June). When a new manager takes charge. *Harvard Business Review*, 110-123).
- Galbraith, J. R. (1973). *Designing complex organizations*. Menlo Park, CA: Addison-Wesley.
- Galbraith, J. & Cummings, L. L. (1967). An empirical investigation of the motivational determinants of past performance: interactive effects between instrumentality, valence, motivation and ability. *Organisational Behaviour and Human Performance* 2: 237-257.
- Galton, F. (1869). *English men of science: Their nature and nurture*. New York: Appleton-Century.
- Garver, M.S., Mentzer, J.T. (1999), "Logistics research methods: employing structural equation modelling to test for construct validity", *Journal of Business Logistics*, Vol. 20 No.1, pp.33-57.
- Gibb, C. A. (1947). The principles and traits of leadership. *Journal of Abnormal and Social Psychology*, 42, 267-284.
- Gibson, F. W., Fielder, F. E., & Barrat, K. M. (1993). Stress, babble and the utilization of the leader's intellectual abilities, *Leadership Quarterly*, 4, 198-208.
- Gerbing, D. W., & Anderson, J. C. (1993). Monte Carlo evaluations of goodness of fit indices for structural equation models. In K. A. Bollen & J. S. Long (Eds.), *Testing Structural Equation Models* (pp 40-65). Newbury Park, CA: Sage.
- Gemmill, G. & Oakley, J. (1992). Leadership: an alienating social myth? *Human Relations*, 45, 2, p113.
- Georgopoulous, B. S., Mahoney, G. M. & Jones Jnr, N. W. (1957). A path-goal approach to productivity. *Journal of Applied Psychology*, 41, 345-353.

- Gibson, F. W. (1992). Leader abilities and group performance as a function of stress. In K. Clark, M. B. Clark, & D. P. Campbell (Eds.), *Impact of leadership* (pp. 333-343). Greensboro, NC: Centre for Creative Leadership.
- Gioia, D. A., & Simms, H. P., Jr. (1985). On avoiding the influence of implicit leadership theories in leader behaviour descriptions. *Journal of Educational and Psychological Measurement*, 45, 217-237.
- Graen, G. (1976). Role making processes within complex organizations. In M. D. Dunnette (Ed.), *Handbook of Industrial and Organizational Psychology*. Chicago: Rand McNally.
- Graen, G. B., Alvares, K.M., Orris J. B., & Martella, J. A. (1970). Contingency model of leadership effectiveness: Antecedent and evidential results. *Psychological Bulletin*, 74, 285-296.
- Graen, G. B., & Cashman, J. F. (1975). A role-making model of leadership in formal organizations: A developmental approach. In J. G. Hunt & L. L. Larson (Eds.), *Leadership Frontiers*, Kent, OH: Kent State University Press.
- Greene, C. N. (1975). The reciprocal nature of influence between leader and subordinate. *Journal of Applied Psychology*, 65, 453-458.
- Green, S. G., & Mitchell, T. R. (1979). Attributional processes of leaders in leader-member exchanges. *OB and Human Performance*, 23, 429-458.
- Greene, C. N. (1979a). Questions of causation in the path-goal theory of leadership. *Academy of Management Journal*, 22, 22-41.
- Greene, C. N. (1979b). A longitudinal investigation of modifications to a situational model of leadership effectiveness. *Proceedings, Academy of Management, Atlanta, GA*, 52-58.
- Greenleaf, R. (1977). *Servant as Leader*. Center for Applied Studies.
- Griffin, R. W. (1979). Task design determinants of effective leader behaviour. *Academy of Management Review*, 4, 215-224.
- Gummesson, E. (2000). *Qualitative Method in Management Research* (2nd Edition). London: Sage Publications.
- Hackman, J. R., & Morris, C. G. (1975). Group tasks, group interaction processes, and group performance effectiveness: A review and proposed integration. In L. Berkowitz (Ed.), *Advances in experimental social psychology*. New York: Academic Press.
- Hackman, J. R., Brousseau, K. R., & Weiss, J. A. (1976). The interaction of task design and group performance strategies in determining group effectiveness. *OB and Human Performance*, 16, 350-365.
- Hair, J. F., Black, B., Babin, B., Anderson, R., & Tatham, R. L. (2007). *Multivariate Data Analysis*. Prentice Hall; 6th Revised US Edition.

- Halpin, A. W. (1966). *Theory and research in administration*. New York: MacMillan.
- Halpin, A. W., & Winer, B. J. (1957). A factorial study of the leader behaviour descriptions. In R. M. Stogdill and A. E. Coons (Eds.), *Leader behaviour: its description and measurement*. Columbus, OH: Bureau of Business Research, Ohio State University, pp. 39-51.
- Heilman, M. E., Hornstein, H. A., Cage, J. H., & Herschlag, J. K. Field, R. H. G. (1984). Reactions to prescribed leader behaviour as a function of role perspective: The case of the Vroom-Yetton Model. *Journal of Applied Psychology*, 69, 50-60.
- Hemphill, J. K. (1950). Relations between the size of the group and the behaviour of superior leaders. *Journal of Abnormal and Social Psychology*, 32: 11-12.
- Hemphill, J. K., & Coons, A. E. (1957). Development of the leader behaviour description questionnaire. In R. M. Stogdill and A. E. Coons (Eds.), *Leader behaviour: its description and measurement*. Columbus, OH: Bureau of Business Research, Ohio State University, pp. 6-38.
- Hickman, C. F. (1990). *Mind of a manager: soul of a leader*. New York: John Wiley.
- Hill, W. A. & Hughes, D. (1974). Variations in leader behaviour as a function of task type. *Organization Behaviour and Human Performance*, 11, 83-96.
- Hollander, E. P. (1979). Leadership and social exchange processes. In K. J. Gergen, M.S. Greenberg, & R. H. Willis (Eds.), *Social Exchange: Advances in theory and research*. New York: Plenum Press.
- Hosking, D. M. (1988). Organizing, leadership and skilful process. *Journal of Management Studies*, 25, 147 – 166.
- House, R. J. (1971) A Path-Goal Theory of Leader Effectiveness. *Administrative Science Quarterly*. September 1971, 321 – 338.
- House, R. J. & Dessler, G. (1974) The path-goal theory of leadership: some post hoc and a priori tests. In J. G. Hunt & L. L. Larson (Eds.), *Contingency approaches to leadership*. Carbondale: Southern Illinois University Press.
- House, R. J., Filley, A. C., & Gujaratii, D. N. (1971a) Leadership style, hierarchical influence and the satisfaction of subordinate role expectations: a test of Likert's influence proposition. *Journal of Applied Psychology*.
- House, R. J., Filley, A. C., & Kerr, S. (1971b) Relation of leader consideration and initiating structure to R and D subordinate satisfaction. *Administrative Science Quarterly*, 16: 19-30.
- House, R. J., & Mitchell, T. R. (1974). Path-goal theory of leadership. *Contemporary Business*, 3 (Fall), 81-98.
- House, R. J., Valency, A., & Van der Krabben, (1974) Tests and extensions of path-goal theory of leadership II. Unpublished Paper.

- House, R. J., Burrell, D. & Dessler, G. (1975) Tests and extensions of path-goal theory of leadership. Unpublished Paper.
- House, R. J. (1977) A 1976 theory of charismatic leadership. In J. G. Hunt & L. L. Larson (Eds.), *Contingency approaches to leadership*. Carbondale: Southern Illinois University Press.
- House, R. J., & Shamir, B. (1993). Towards the integration of transformational, charismatic, and visionary theories. In M. Chemers & R. Ayman (Eds.), *Leadership Theory and Research: perspectives and directions* (pp. 81-107). Orlando, FL: Academic Press.
- House, R. J., Hanges, P. J., Ruiz-Quintanilla, S. A., Dorfman, P. W., Dickson, M., & Associates. (1999). Cultural influences on leadership and organizations. Project GLOBE. In W. H. Mobley, M. J. Gessner, & V. Arnold (Eds.), *Advances in global leadership*. Stamford, CT: JAI Press.
- House, R. J., Wigdor, A. W. & Shulz, K. (1970). Leader behaviour, psychological participation, employee satisfaction and performance: an extension of prior investigations and a motivation theory interpretation. In W. M. Frey (ed.), *Proceedings Seventh Annual Conference of Eastern Academy of Management: 179-195*. Amherst: University of Massachusetts.
- Howell, J. P., & Dorfman, P. W. (1981). Substitutes for leadership: Test of a construct. *Academy of Management Journal*, 24, 714-728.
- Howell, J. P., & Dorfman, P. W. (1986). Leadership and substitutes for leadership among professional and non-professional workers. *Journal of Applied Behavioural Science*, 22, 29-46.
- Howell, J. P., Bowen, D. E., Dorfman, P. W., Kerr, S., & Podsakoff, P. M. (1990). Substitutes for leadership: Effective alternatives to ineffective leadership. *Organisational Dynamics*, 19, 21-38.
- Hu, L. -T., & Bentler, P. M. (1995). Evaluating model fit. In R. H. Hoyle (Ed.), *Structural Equation modelling: Concepts, issues and applications* (pp. 76-99). Thousand Oaks, Ca: Sage.
- Hunt, J. G. (1991). *Leadership: A new synthesis*. Newbury Park, CA: Sage.
- Hunt, J. G. (1996). Introduction to citation classics. *Leadership Quarterly*, Volume 7, Issue 3, Autumn 1996.
- Indvik, J. (1985). A path-goal theory investigation of superior-subordinate relationships. Doctoral Dissertation, University of Wisconsin, Madison.
- Indvik, J. (1986). Path-goal theory of leadership: A Meta analysis. In *Proceedings of the Academy of Management Best Papers Meetings*, pp. 189-192.
- Indvik, J. (1986a). Path-goal theory of leadership: A Meta analysis. In *Proceedings of the Academy of Management Best Papers Meetings*, pp. 189-192.

- Indvik, J. (1986b). A path-goal theory investigation of achievement-orientated and participative leader message behaviours. Paper, Academy of Management, Chicago.
- Indvik, J. (1988). A more complete test of goal theory. Paper, Academy of Management, Anaheim, CA.
- Ivancevich, J. M., & Donnelly, J. H. (1974). A study of role clarity and need for clarity for three occupational groups. *Academy of Management Journal*, 17, 28-36.
- Jacobs, T. O. (1970). Leadership and exchange in formal organizations. Alexandria, VA: Human Resources Research Organization.
- Jacobs, T. O., & Jaques, E. (1987). Leadership in complex systems. In J Zeidner (Eds.), *Human Productivity enhancement: Organizations, personnel, and decision-making*. Vol.2. New York: Praeger.
- Jacobs, T. O., & Jaques, E. (1990). Military executive leadership. In K. E. Clark and M. B. Clark (Eds.), *Measures of Leadership*. West Orange, NJ: Leadership Library of America.
- Jago, A. G., & Vroom, V. H. (1980). An evaluation of two alternatives to the Vroom/Yetton normative model. *Academy of Management Journal*, 23, 347 - 355.
- James, W. (1880). Great men, great thoughts, and their environment. *Atlantic Monthly*, 46, 441-459.
- Janda, K. F. (1960). Towards the explication of the concept of leadership in terms of the concept of power. *Human relations*, 13, 345 – 363.
- Jermier, J. J. (1996). The path-goal theory of leadership: A subtextual analysis. *Leadership Quarterly*, Volume 7, Issue 3 , Autumn 1996.
- Joreskog, K. G., & Sorbom, D. (1988). LISREL 7: A guide to the programme and applications. Chicago: SPSS, Inc.
- Joreskog, K. G., & Sorbom, D. (1993). LISREL 8: structural equation modelling with the SIMPLIS command language. Chicago: Scientific Software International.
- Kabanoff, B. (1991). Equity, equality, power and conflict. *Academy of Management Review*, 16, 416 - 441.
- Kanter, R. M. (1982, July-August). The middle manager as innovator. *Harvard Business Review*, 95-105).
- Karmel, B. (1978). Leadership: A challenge to traditional research methods and assumptions. *Academy of Management Review*, 3, 475 – 482.
- Katz, D. (1977). The influence of group conflict on leadership effectiveness. *Organizational Behaviour and Human Performance* 20, 265-286.

- Katz, D., & Kahn, R. L. (1978). *The social psychology of organizations*. 2nd Edition. New York: John Wiley.
- Katzenbach, J & Smith, D. (1993). *The Wisdom of Teams: Creating the High Performance Organisation*. Boston, MA: Harvard Business School Press.
- Kelman, H. C. (1985). Compliance, identification, and internalization: Three processes of attitude change. *Journal of Conflict Resolution*, 2, 51-56.
- Keller, R. T. (1987). A test of the path-goal theory of leadership with need for clarity as a moderator in the research and development organizations. Paper, Academy of Management, New Orleans.
- Kennedy, J. K., Jr. (1982). Middle LPC leaders and the contingency model of leader effectiveness. *OB and Human Performance*, 30, 1 - 14.
- Kerr, S., & Jermier, J. M. (1978). Substitutes for leadership: Their meaning and measurement. *Organisational Behaviour and Human Performance*, 22, 375 - 403.
- Kerr, S., & Jermier, J. M. (1978). Substitutes of leadership: their meaning and measurement. *OB and Human Performance*, December 1978, pp. 375-403.
- Kerr, S., & Schriesheim, C. A. (1974). Consideration, initiating structure and organizational criteria – an update of Korman's 1966 review. *Personnel Psychology*, 27, 555-568.
- Klein, K. J., Dansereau, F., & Hall, R. J. (1994). Levels issues in theory development, data collection, and analysis. *Academy of Management Review*, 19, 195-229.
- Korman, A. K. (1966). Consideration, initiating structure and organisational structure – a review. *Personnel Psychology*, 19, 153-164.
- Korman, A. K. (1988). *The outsiders. Jews and Corporate America*. Lexington, MA: Lexington Books.
- Korman, A. K., & Tanofsky, R. (1975). Statistical problems of contingency models in OB. *Academy of Management Journal*, 18, 393-397.
- Kotter, J. P. (1982). *The general managers*. New York: Free Press.
- Kotter, J. P. (1988). *The leadership factor*. New York: Free Press.
- Kroll, M. J., & Pringle, C. D. (1985). Individual differences and path-goal theory. The role of leader effectiveness. *Southwest Journal of Business and Economics*, 2(3), 11-20.
- Lawler, E. E. (1988). Substitutes for hierarchy. *Organisational Dynamics*, 17(Summer), 5-15.
- Loehlin, J. C. (2003). *Latent Variable Models: An Introduction to Factor, Path, and Structural Equation Analysis*. Lawrence Erlbaum Associates Inc, US: Rev Edition.

- Lord, R. G., Binning, J. F., Rush, M. C., & Thomas, J.C. (1978). The effects of performance cues and leader behaviour on questionnaire ratings of leader behaviour. *OB and Human Performance*, 21, 27-39.
- Lawrence, P. R., & Lorsch, J. (1967, November- December). New management job: The integrator. *Harvard Business Review*, 142-151.
- Lawrence, P. R., & Lorsch, J. (1969). *Organization and the environment: Managing differentiation and integration*. Homewood, IL: Richard D. Irwin.
- Likert, R. (1967). *The human organization: Its management and value*. New York: McGraw-Hill.
- Likert, R. (1977). Management styles and the human component. *Management Review*, 66, 23-28, 43-45.
- Lord, R. G. & Mather, K. J. (1991). *Leadership and information processing: Linking perceptions and performance*. Boston: Unwin-Hyman.
- Luthans, F., & Lockwood, D. L. (1984). Towards an observation system for measuring leader behaviour in natural settings. In J. G. Hunt, D. Hosking, C. A. Schriesheim, and R Stewart (Eds.), *Leaders and managers: International perspectives on managerial behaviour and leadership*. New York: Pergamon Press.
- Luthans, F. (2001). *Organizational Behaviour*. 9th (International Edition). McGraw-Hall Irwin.
- Maier, N. R. H. (1963). *problem solving discussions and conferences: Leadership methods and skills*. New York: McGraw-Hill.
- Maier, N. R. H. (1967). Assets and liabilities in group problem solving: The need for integrative function. *Psychological Review*, 74, 239-249.
- Manz, C. C. (1992). *Mastering self-leadership: Empowering yourself for personal excellence*. Englewood Cliffs, NJ: Prentice Hall.
- Margerison, C. J, & Glube, R. (1979). Leadership decision making: An empirical test of the Vroom and Yetton Model. *Journal of Management Studies*, 16-45.
- Marsh, H. W., Balla, J. R., & McDoald, R. p. (1988). Goodness of fit indexes in confirmatory factor analysis: the effect of sample size. *Psychological Bulletin*, 103, 391-410.
- Mass, H. S. (1950). Personal and group factors in leader's social perception. *Journal of Abnormal and Social Psychology*, 45: 54-63.
- MacCallum, R. C., Browne, M. W., & Sugawara, H. M. (1996). Power analysis and determination of sample size for covariance structural modelling. *Psychological Methods*, 1, 130-149.
- McClelland, D. C. (1985). *Human motivation*. Glenview, IL: Scott, Foresman.

- McGrath, J. E. (1984). *Groups: Interaction and performance*. Englewood Cliffs, NJ: Prentice Hall.
- McMahon, J. T. (1972). The contingency theory: Logic and method revisited. *Personnel Psychology*, 25, 697-711.
- Meindl, J. R. (1990). On leadership: An alternative view to the conventional wisdom. *Research in OB*, 12, 159-203.
- Meindl, J. R., Ehrlich, S. B., & Dukerich, J. M. (1985). The romance of leadership. *Administrative Science Quarterly*, 30, 78-102.
- Miles, R. H. M., & Petty, M. M. (1977). Leader effectiveness in small bureaucracies. *Academy of Management Journal*, 20, 238-250.
- Mintzberg, H. (1973). *The nature of managerial work*. New York: Harper & Row.
- Mintzberg, H. (1983). *Power in and around organizations*. Englewood Cliffs, NJ: Prentice-Hall.
- Mintzberg, H. (1999). *Managing Quietly*. *Leader to Leader*, No.12, Spring [www.pdf.org/leaderbooks/L2L/spring99/mintzberg.html]
- Mischel, W. (1973). Toward a cognitive social learning reconceptualization of personality. *Psychological Review*, 80, 252-283.
- Mitchell, T. R. (1974). Expectancy models of job satisfaction, occupational preference and effort: A theoretical, methodological and empirical appraisal. *Psychological Bulletin*, 81, 1053 – 1077.
- Mitchell, T. R. (1979). Organizational behaviour. *Annual Review of Psychology*, 30, 243-281.
- Mitchell, T. R., Smysere, C.M. & Weed, S. E. (1975). Locus of control: supervision and work satisfaction. *Academy of Management Journal*, 18, 623-630.
- Mitchell, T. R., Larson, J. R., Jr., & Green, S. G. (1977). Leader behaviour, situational moderators and group performance: An attributional analysis. *OB and Human Performance*, 18, 254-268.
- Mumford, M. D. (1986). Leadership in the organizational context: Some empirical and theoretical considerations. *Journal of Applied Psychology*, 16, 508-531.
- Murphy, S. E., Blyth, D., & Fielder, F. E. (1992). Cognitive resources theory and the utilisation of the leader's and group member's technical competence. *Leadership Quarterly*, 3, 237-255.
- Neider, L. L., & Schriesheim, C. A. (1988). Making leadership effective: A three stage model. *Journal of Management Development*, 7(5), 10-20.
- Northouse, P. G. (2004). *Leadership: Theory and Practice (3rd Edition)*. London: Sage Publications Ltd.

- Oaklander, H., & Fleishman, E. A. (1964). Patterns of leadership related to organisational stress in hospital settings. *Administrative Science Quarterly*, 8: 520-532.
- Osborn, R. N. (1974). Discussant Comments In J. Hunt and L. Larson (Eds.), *Contingency approaches to leadership*. Carbondale, IL: Southern Illinois Press.
- Paul, R. J., & Ebadi, Y. M. (1989). Leadership decision making in a service organisation: A field Test of the Vroom-Yetton model. *Journal of Applied Psychology*, 62, 201-211.
- Patchen, M. (1962). Supervisory methods and group performance norms. *Administrative Science Quarterly*, 7: 275-294.
- Pelz, D. C. (1952). Influence: a key to effective leadership in the first-line supervisor. *Personnel* 29: 209-221.
- Peters, L. H., Hartke, D. D., & Pohlmann, J. T. (1985). Fielder's contingency theory of leadership: An application of meta-analysis procedures of Schmidt and Hunter. *Psychological Bulletin*, 97, 274-285.
- Pettigrew, A. M. (1973). *The politics of organizational decision-making*. London: Tavistock.
- Pfeffer, J. (1977). Power and resource allocations in organizations. In B. M. Staw & G. R. Salancik (Eds.), *New Directions in Organisational Behaviour* (pp. 179-204). Chicago: St. Clair.
- Pfeffer, J. (1981). *Power in organizations*. Boston: Pitman.
- Pillai, R., Williams, E. A., Lowe, K. B., & Jung, D. I. (2003). Personality, transformational leadership, trust, and the 2000 U. S. presidential vote. *Leadership Quarterly*, 14, 161-192.
- Pitner, N. J. (1986). Substitutes for principal leader behaviour: An exploratory study. *Educational Administration Quarterly*, 22, 23-42.
- Podsakoff, P.M., Niehoff, B. P., MacKenzie, S.B., & Williams, M. L. (1993). Do substitutes for leadership really substitute for leadership? An examination of Kerr and Jermier's situational model. *Organisational Behaviour and Human Decision Processes*, 54, 1-44.
- Podsakoff, P.M., MacKenzie, S. B., Ahearne, M., & Bommer, W. H. (1995). Searching for a needle in a haystack: Trying to identify the illusive moderators of leadership behaviours. *Journal of Management*, 21, 423-470.
- Podsakoff, P.M., MacKenzie, S. B., Ahearne, M., & Bommer, W. H. (1996). Transformational Leader behaviours and substitutes for leadership as determinators of employee satisfaction, commitment, trust, and organizational citizenship behaviours. *Journal of Management*, 22, 259-298.
- Porter, L. & Lawler III, E. E. (1967). *Managerial Attitudes and Performance*. Homewood, Ill: Irwin Dorsey.

- Potter, E. H., & Fielder, F. E. (1981). The utilisation of staff member intelligence and experience under high and low stress. *Academy of Management Journal*, 24, 361-376.
- Quinn, R. E., & Rohrbaugh, J. (1983). A spatial model of effectiveness criteria: Towards a competing values approach to organizational analysis. *Management Science*, 29, 363-377.
- Rauch, C. F., & Behling, O. (1984). Functionalism: Basis for an alternate approach to the study of leadership. In J. G. Hunt, D. M. Hoskings, C. A. Schriesheim, & R. Stewart (Eds.), *Leaders and managers: International perspectives on managerial behaviour and leadership*. Elmsford, NY: Pergamon Press.
- Rice, R. W. (1978). Construct validity of the least preferred co-worker score. *Psychological Bulletin*, 85, 1199-1237.
- Rim, Y. (1965). Leadership attitudes and decisions involving risk. *Personnel Psychology*, 18: 423-430.
- Rizzo, J. R., House, R. J., & Lirtzman, S. E. (1970). Role conflict and ambiguity in complex organizations. *Administrative Science Quarterly*, 15: 150-153.
- Runyon, K. E. (1973). Some interactions between personality variables and managements styles. *Journal of applied Psychology*, 57, 3, 288-294.
- Rush, M. C., Thomas, J. C., & Lord, R.G. (1977). Implicit leadership theory: A potential threat to the internal validity of leader behaviour questionnaires. *OB and Human Performance*, 20, 93-110.
- Sadler, J. (1970). Leadership Style, Confidence in Management and Job Satisfaction. *Journal of applied behavioural sciences*, 6, 3-19.
- Sashkin, M. (1988). The visionary leader. In J. A. Conger & R. N. Kanungo (Eds.), *Charismatic leadership: The elusive factor in organizational effectiveness*. San Francisco: Jossey-Bass.
- Schiflet, S. C. (1973). The contingency model of leadership effectiveness: some implications of its statistical and methodological properties. *Behavioural Science*, 18(6), 429-440.
- Schriesheim, C. A., & Kerr, S. (1974). Psychometric properties of the Ohio State leadership scales. *Psychological Bulletin*, 81, 756-765.
- Schriesheim, C. A., & Neider, L.L. (1996). Path-goal leadership theory: The long and winding road. *Leadership Quarterly*, Volume 7, Issue 3, Autumn 1996.
- Schriesheim, C. A., & Stogdill, R. M. (1975). Differences in factor structure across three versions of the Ohio State leadership scales. *Personnel Psychology*, 28, 189-206.
- Schriesheim, C. A., & Kerr, S. (1976). Leader initiating structure: A reconciliation of discrepant research results and some empirical tests. *Organizational Behaviour and Human Performance*, 15, 297-321.

- Schriesheim, C. A., House, R. J., & Kerr, S. (1976). Leader Initiating Structure: A reconciliation of discrepant research results and some empirical tests. *Organizational Behavior and Human Performance*, 15, 297-321.
- Schriesheim, C. A., & Kerr, S. (1977). Theories and measures of leadership: A critical appraisal. In J. Hunt and L. Larson (Eds.), *Leadership: The cutting edge*. Carbondale, IL: Southern Illinois Press.
- Schriesheim, C. A., Kinicki, A. J., & Schriesheim, J. F. (1979). The effects of leniency on leader behaviour descriptions. *Organisational Behavior and Human Performance*, 23, 1-29.
- Schriesheim, J. F., & Schriesheim, C. A. (1980) A test of the path-goal theory of leadership and some suggested directions for future research. *Personnel Psychology*, 33, 349-370.
- Schriesheim, C. A. & DeNisi, A. (1981). Task dimensions as moderators of the effects of instrumental leadership: a sample applicated test of Path-Goal leadership theory. *Journal of Applied Psychology*, October 1981, pp. 189-192.
- Schriesheim, C. A., Castro, S.L., Zhou, X.T., & DeChurch, L.A. (2006). An investigation of path-goal and transformational leadership theory predictions at the individual level of analysis. *The Leadership Quarterly* 17 (2006) 21-38.
- Schriesheim, C. A., & Von Glinow., M. A. (1977). The path-goal theory of leadership: a theoretical and empirical analysis. *Academy of Management Journal*, 20, 398-405.
- Schuler, R. S. (1974). Leader participation, task structure and subordinate authoritarianism. Unpublished mimeograph, Cleveland State University.
- Schuler, R. S. (1976). Participation with superior and subordinate authoritarianism. A path-goal reconciliation. *Administrative Science Quarterly*, 21, 320-325.
- Seers, A., & Graen, G. B. (1984). The dual attachment concept: A longitudinal investigation of the combination of task characteristics and leader-member exchange. *Organizational Behaviour and Human Performance*, 33, 283-306.
- Shamir, B., House, R. J., & Arthur, M. (1993). The motivational effects of charismatic leadership: a self-concept based theory. *Organization Science*, 4, 1-17.
- Siegel, J. P. (1973). Reconsidering "consideration" in leadership path-goal interpretation of satisfaction and performance. Toronto: University of Toronto. Unpublished Manuscript.
- Silverman, D. (2004). *Doing Qualitative Research: A Practical Handbook* (@nd Edition). London: Sabe Publications.
- Skinner, E. W. (1969). Relationships between leadership behaviour patterns and organizational-situational variables. *Personnel Psychology*, 22, 489-494.
- Slater, P. E. (1955). Role differentiation in small groups. In A. P. Hare, E. F. Borgatta, & R. F. Bales (Eds.), *Small groups: Studies in social interactions* (pp. 498-515). New York: Knopf.

- Sobel, M. F., & Bohrnstedt, G. W. (1985). Use of null models in evaluating the fit of covariance structure models. In N. B. Tuma (Ed.), *Sociological Methodology 1985* (pp. 152-178). San Francisco: Jossey-Bass.
- Sorenson, G. (2002). An intellectual history of leadership studies in the US, paper presented at the EIASM Workshop on Leadership Research, Said Business School, Oxford 16-17 December.
- Spangler, W. D. (1992). Validity of questionnaire and TAT measures of the need for achievement two meta-analyses. *Psychological Bulletin*, 112(1), 140-154.
- Spangler, W. D., & House, R. J. (1991). Presidential effectiveness and the leadership motive profile. *Journal of Personality and Social Psychology*, 60, 439-455.
- Steenkamp, B. E. M., & Van Trijp, H. C. M. (1991). The use of LISREL in validating marketing constructs. *International Journal of Research in Marketing*, Vol. 8, Issue. 4, 1991, p. 283-299.
- Steiger, J. H. (1990). Structural model evaluation and modification: An interval estimation approach. *Multivariate Behavioural Research*, 25, 173-180.
- Steiger, J. H., & Lind, J. C. (1980, June). Statistically based tests for the number of common factors. Paper presented at the Psychometric Society Annual Meeting, Iowa City, IA.
- Stewart, R. (1976). *Constraints in management*. London: MacMillan.
- Stinson, J. E., & Johnson, T. W. (1975). The path-goal theory of leadership: A partial test and suggested refinement. *Academy of Management Journal*, 18, 242-252.
- Stogdill, R. M. (1962). Intragroup-intergroup theory and research. In M. Sherif (Ed.), *Intergroup relations and leadership*. New York: Wiley.
- Stogdill, R. M. (1965). *Managers, Employees, Organization*. Ohio State University: Bureau of Business Research.
- Stogdill, R. M. (1974). *Handbook of leadership: A survey of the literature*. New York: Free Press.
- Stogdill, R. M., & Coons, A. E. (1957). *Leader Behaviours: its description and measurement*. Columbus OH: Ohio State University, Bureau of Business Research.
- Stogdill, R. M., Goode, O. S., & Day, D. R. (1962). New leader behaviour description subscales. *Journal of Applied Psychology*, 54, 259-269.
- Storey, J. (2004). Signs of change: dammed rascals and beyond. In J. Storey (Eds.), *Leadership in Organisations: Current Issues and Key Trends*, London: Routledge.
- Strube, M. J., & Garcia, J. E. (1981). A meta-analytic investigation of Fielder's contingency model of leadership effectiveness. *Psychological Bulletin*, 90, 307-321.

- Szilagyi, A. D., & Simms, H. P. (1974). The cross-sample stability of the supervisory behaviour description questionnaire. *Journal of Applied Psychology*, 59, 767-770.
- Tanaka, J. S. (1993). Multifaceted conceptions of fit in structural equation models. In K. A. Bollen & J. S. Long (Eds.), *Testing Structural Equation Models* (pp 40-65). Newbury Park, CA: Sage.
- Tannenbun, R., & Allport, F. H. (1956). Personality structure and group structure: An interpretive structure of their relationship through an event structure hypothesis. *Journal of Abnormal and Social Psychology*, 53, 272-280.
- Tannenbun, R., & Schmidt, W. H. (1958). How to choose a leadership pattern. *Harvard Business Review*, 36(March-April), 95-101.
- Tjosvold, D., Wedley, W.C. & Field, R. H. G. (1986). Constructive controversy: The Vroom-Yetton model and managerial decision making. *Journal of Occupational Behaviour*, 7, 125-138.
- Tolman, E. & Honzik, C. (1930). Introduction and Removal of Reward and Maze Performance of Rats. *University of California Publications in Psychology*. 4: 257-275.
- Tosi, H. (1970). A re-examination of Personality as a determinant of the effects of participation. *Personnel Psychology*, 23, 91-99.
- Uleman, J. S. (1991). Leadership ratings: Toward focusing more on specific behaviours. *Leadership Quarterly*, 2, 175-187.
- Villa, J. R., Howell, J. P., Dorfman, P. W., & Daniel, D. L. (2003). Problems with Detecting Moderators in Leadership Research Using Moderated Multiple Regression. *Leadership Quarterly*, 14, 3-23.
- Vecchio, R. P. (1983). Assessing the validity of Fielder's contingency model of leadership effectiveness: A closer look at Strube and Garcia. *Psychological Bulletin*, 93, 404-408.
- Vecchio, R. P. (1990). Theoretical and empirical examination of cognitive resource theory. *Journal of Applied Psychology*, 75, 141-147.
- Vroom, V. H. (1959). Some personality determinants of the effects of participation. *Journal of Abnormal and Social Psychology*, 53, 272-280.
- Vroom, V. H. (1964). *Work and Motivation*. New York: Wiley.
- Vroom, V. & Mann, F. (1960). Leader authoritarianism and employee attitudes. *Personnel Psychology*, 13: 125-139.
- Vroom, V. & Jago, A. G. (1978). On the validity of the Vroom-Yetton model. *Journal of Applied Psychology*, 63, 151-162.
- Vroom, V. & Yetton, P. W. (1973). *Leadership and decision making*. Pittsburgh: University of Pittsburgh Press.

- Vroom, V. & Jago, A. G. (1988). *The new leadership: Managing participation in organisations*. Englewood Cliffs, NJ: Prentice Hall.
- Wagner, W. L. (1965). Leadership style, influence and supervisory role obligations. *Administrative Science Quarterly*, 9: 391-420.
- Weber, M. (1924/1947). *The theory of social and economic organisation* (T. Parsons, Trans.). New York: Free Press.
- Weed, S. E., Mitchell, T. R., & Moffitt, W. (1976). Leadership style, subordinate personality, and task type as predictors of performance and satisfaction with supervision. *Journal of Applied Psychology*, 61, 58-66.
- Wiggam, A. E. (1931). *The biology of leadership*. In H. C. Metcalf (Ed.), *Business Leadership*. New York: Pitman.
- Wheaton, B. (1987). Assessment of fit in overidentified models with latent variables. *Sociological Methods & Research*, 16, 118-154.
- Wofford, J. C. (1982). An integrative theory of leadership. *Journal of Management*, 8, 27-47.
- Wofford, J. C. & Liska, L. Z. (1993). Path-goal theories of leadership: A meta analysis. *Journal of Management*, 19, 858-876.
- Wexley, K. N., Singh, J. P., & Yukl, J. A. (1973). Subordinate personality as a moderator of the effect of participation in 3 types of appraisal interview. In *An integrative theory of leadership*. *Journal of Applied Psychology*, 83, 54-59.
- Wolcott, C. (1984). *The relationship between the leader behaviour of library supervisors and the performance of their professional subordinates (path-goal theory, management)*. *Dissertation Abstracts International*, 45 (5A), 1507.
- Woods, F. A. (1913). *The influence of monarchs*. New York: MacMillan.
- Yammarino, F.J., Dionne, S.D., Chun, J.U., & Dansereau, F. (2005). Leadership and levels of analysis: A state-of-the-science review. *The Leadership Quarterly* 16 (2005) 879-919.
- Yukl, G. A. (1970). Leader LPC scores: Attitude dimensions and behavioural correlates. *Journal of Social Psychology*, 80, 207-212.
- Yukl, G. A. (1971). Towards a behavioural theory of leadership. *OB and Human Performance*, 6, 414-440.
- Yukl, G. (1981). *Leadership in organizations*. Edition, Englewood Cliffs, NJ: Prentice Hall.
- Yukl, G. (1989). *Leadership in organizations*. 2nd Edition, Englewood Cliffs, NJ: Prentice Hall.
- Yukl, G. (2001). Managerial leadership: A review of the theory and research. *Journal of Management*, Vol. 15, No.2, 1989, p.266.

Yukl, G. (2002). *Leadership in organizations*. 5th Edition, Englewood Cliffs, NJ: Prentice Hall.

Yukl, G. A., & Clemence, J. (1984). A test of path-goal theory of leadership using questionnaires and diary measures of behaviour. *Proceedings of the Eastern Academy of Management Meetings*, pp. 174 – 177.

Yukl, G. A., & Van Fleet, D. (1982). Cross-situational, multi-method research on military leader effectiveness. *Organizational Behaviour and Human Performance*, 30, 87-108.

Zalenik, A. (1977). Managers and leaders: Are they different? *Harvard Business Review*, 55(5), 67 – 78.

OTHER MATERIAL INSPECTED

Blyth, D. E. (1987). *Leaders and subordinate expertise as moderators of the relationship between directive leader behaviour and performance*. Unpublished doctoral dissertation. University of Washington, Seattle.

Bolden, R. (2005). *What is Leadership?* Research Report, Centre for Leadership Studies, The University of Exeter.

McIntosh, N. J. (1988, August). *Substitutes for leadership: review, critique, and suggestions*. Paper presented at the Academy of Management Meeting.