NATIONAL LIBRARY
OTTAWA

CANADA

BIBLIOTHÈQUE NATIONALE
OTTAWA

NAME OF AUTHOR.... BRIAN TUCKER

TITLE OF THESIS.... MANAGERIAL SUCCESS:
SOME INSTRUMENTAL CORRELATES
IN THE PUBLIC SECTOR

UNIVERSITY.... OF ALBERTA

DEGREE FOR WHICH THESIS WAS PRESENTED.... M.B.A.

YEAR THIS DEGREE GRANTED.... 1974

Permission is hereby granted to THE NATIONAL LIBRARY OF CANADA to microfilm this thesis and to lend or sell copies of the film.

The author reserves other publication rights, and neither the thesis nor extensive extracts from it may be printed or otherwise reproduced without the author's written permission.

(Signed).... B. Tucker....

PERMANENT ADDRESS:

#R, 11950-100 Ave
EDMONTON, Alberta
T5K 0K5

DATED.... 6th May.... 1974

NL-91 (10-68)

THE UNIVERSITY OF ALBERTA

MANAGERIAL SUCCESS: SOME INSTRUMENTAL CORRELATES IN THE PUBLIC SECTOR

by

© BRIAN TUCKER

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE

OF MASTER OF BUSINESS ADMINISTRATION

DEPARTMENT OF BUSINESS ADMINISTRATION AND COMMERCE

EDMONTON, ALBERTA

SPRING, 1974

THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled "MANAGERIAL SUCCESS: SOME INSTRUMENTAL CORRELATES IN THE PUBLIC SECTOR" submitted by BRIAN TUCKER in partial fulfillment of the requirements for the degree of Master of Business Administration.

Dallas Cullen

SUPERVISOR

J. Paul Johnston

Date 6th May 1974

ABSTRACT

This study attempts to identify some relationships between a number of demographic, fundamental personality, changeable personal, behavioural and organizational variables and various concepts of managerial success.

Literature on the subject is reviewed and provides the basis for hypotheses suggesting that all the above variables may be related to managerial success.

Twelve indicators of managerial success (including measures of hierarchial position, salary, and managerial responsibilities) were factor analysed to produce four success factors relating to the manager's position within the hierarchy, his supervisory responsibilities, his rate of advancement and his recognition by the corporate Personnel system.

Standard instruments were used to measure fundamental personality attributes (the California F scale and the Thurstone Temperament Schedule), changeable personal characteristics (Dorcy Leadership Questionnaire and Gekoski and Schwartz's Supervisory Index), behavioural styles (the Leadership Opinion Questionnaire, FIRO-B and Thomas' Behaviour Description Questionnaire) and the perceived Organizational Climates (Likert's, Friedlander's, and Litwin and Stringer's surveys) of sixty-five Canadian public managers.

A large number of significant relationships between scores on these scales and the success indicators and factors and demographic variables were discovered through multiple regression

in support of the hypotheses.

The conclusion was reached that the four success factors were useful measures of managerial success but they were more difficult to predict than the simple success indicators.

Recommendations were made regarding the evaluation of the instruments used, the evaluation of corporate manpower programs and further research.

ACKNOWLEDGEMENTS

Tradition dictates that the writer of a thesis should acknowledge the support he has received from the members of his Committee, his Faculty, his funders, his family and friends and his clerical assistance. In this case, such an acknowledgement is not only traditional but most sincere, and is coloured by the author's conviction that without the many personal sacrifices of these people, this thesis would never have been completed.

To the chairperson of his Committee, Dr. Dallas M. Cullen, and to her Faculty-colleague Dr. J.B. Dobson for their continuous support, criticism, suggestions and guidance throughout the year in which this thesis was written, particular thanks must be expressed. Thanks are also due to Dr. J.P. Johnston, the third member of the Committee for his provoking and helpful comments during the last stages of the thesis process.

Other members of the Faculty of Business Administration and Commerce who contributed comments or moral support to this work would include Drs. Nedd, Rogers, Schneck, Shiladeh and Winters.

The moral and financial support of the Alberta Public Service has also to be gratefully acknowledged. To the many managers who subjected themselves to hours of questions, to the author's colleagues in the Organization Development Division who provided intellectual stimulus and administrative support, to the Director of the Organization Development Division (Mr. Ron Clark) and the Alberta Public Service Commissioner (Mr. Keith J. Robertson) for enabling this study to be possible and for

supporting its continuation, and to the Civil Service Welfare Fund for their Graduate Scholarship, the author expresses his sincere thanks.

The author's wife was, at times, research assistant, typist, proof-reader and thesis-widow. Her many sacrifices must be formally acknowledged.

To Miss. Barbara MacLean, who decyphered my poor writing, corrected my terrible spelling, typed and retyped, and showed consideration beyond the call of duty, my repeated thanks.

Kind words to the others not mentioned here by name, who provided encouragement, support and suggestions, who showed consideration, tolerance and understanding, and who cared, my thanks.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

INTRODUCTION

This study was founded on the author's professional interests in the area of organizational development and management training. The area involves planned interventions in the development of groups and individuals, using behavioural science concepts and technology in order to effect accelerated growth or transition toward some model of organizational and individual behaviour.

Although such interventions have been made (without models or formal behavioural science concepts and technology, perhaps) throughout the social history of man, it is largely to the post-war Human Relations movement that credit must be given for stimulating research into the area. The dynamics of group and individual development within organizations has been the topic of scientific study largely only in the past forty years.

During this time the activities of management training and (more recent) organizational development have attracted considerable study from behavioural scientists and organizational managers.

A number of potential benefits of management training (sometimes real, sometimes imagined) have been identified. These include higher productivity, corporate viability and flexibility, higher staff morale, and greater job satisfaction on the part of managers themselves.

Management training has also had costs associated with it - costs to both the individual and the organization.

Cost-conscious managers, labor economists, and industrial

sociologists have long sought to compare the costs and benefits of training. Until recently, however, the weighing of such costs and benefits was largely in economic terms and was performed without much scientific study. The areas of evaluation studies were largely those of quantitative operations rather than management. The management training area proved somewhat elusive for the evaluators because of the nature of the manager's job. Studies in this area by Meigniez (1961) and Caunt (1971) for example were generally inconclusive.

The results of these earlier studies led the author to believe that before one could evaluate activities aimed at improving a manager's performance, some way of differentiating between managers in terms of their performance was needed. While effectiveness of the managerial role would have been a more acceptable measure of performance, the author chose to restrict his study to that managerial performance which is recognized by organizational reward systems - in other words, managerial success.

Purpose of the study

The purpose of this study was therefore to explore the concept of managerial success and to discover some instrumental indicators of it. The study anticipated development at a later stage in terms of measuring changes in managerial success as a result of management training. The assumption was made that instruments measuring certain properties or dimensions of managerial success would also be capable of measuring changes in success.

Outline of the Study

The next four chapters examine the literature relating to successful or effective management in terms of what it is and its intrapersonal, behavioural and organizational associations.

Chapter II reviews the literature on the concept of managerial success. A number of operational definitions of success in terms of indicators are identified and certain moderating variables are considered.

The third chapter looks at a number of intra-personal variables and their relationship to success. Demographic variables, fundamental personality dimensions and changeable personal attributes are examined as potential sources of predictor variables for relationships with managerial success. Particular emphasis is placed on those intra-personal variables which can be changed through a human relations training approach. The nature and durability of such changes are examined.

In the fourth chapter, the focus turns to behaviour. A number of attempts to identify behaviours which differentiate managers from non-managers are reviewed. The influence of certain organizationally-relevant variables such as hierarchy and line-staff role are examined. Various approaches to the definition of managerial behaviour in terms of leadership style are considered, including such factors as the autocracy - democracy dimensions, the Ohio State studies, and the Least-Preferred-Coworker approach.

Chapter V reviews the literature on the perceived organizational properties associated with managerial success. Fiedler's "Contingency Theory" studies and a number of organizational

dimensions are examined.

In the next chapter, the preceding chapters are integrated in terms of a general research model and a number of general hypotheses are formulated. Specific expectations with respect to certain demographic, fundamental personality, changeable personal, behavioural and organizational variables are advanced. Scales measuring particular variables under study are reviewed.

Chapter VII contains the empirical results of the study. Correlations between the various scales and the demographic and success variables are reported, and regression relationships between the success variables and the independent variables are established. The hypotheses and specific predictions of the preceding chapter are examined.

In the concluding chapter, the general pattern of results is reviewed. Discrepencies between expectations and results are examined and conclusions drawn. A number of implications drawn from the study for application to organizational operation and for further investigation are suggested.

CHAPTER II

MANAGERIAL SUCCESS

A review of the management literature indicates that while a large number of writers have prescribed certain personal characteristics, behaviours or environmental conditions as pre-requisite to "success", few have attempted to define their criterion variables. This chapter reviews some of the definitions of the term "managerial success", and then discusses techniques that have been used in attempts to predict it.

In three following chapters, personal characteristics, behaviours and environmental influences related to managerial success or effectiveness are reviewed. It should be noted that in much of the management literature, the terms "success" and "effectiveness" are used interchangeably. This implies that the manager who is more effective in enabling his organization to reach its productivity, or employee satisfaction, goals will be recognized by the organizational reward system. The validity of this assumption may be questioned within the context of the current research study.

The definition of success

Patton (1960), Pollett and Hoyt (1967), Miner (1970, 1971), Friedlander and Greenberg (1971), Hornaday and Aboud (1971), Hundal (1971), Gutteridge (1973), and Steele and Ward (1974) are among the researchers who have specified criteria of management success in their empirical studies.

A survey of over a hundred top-echelon executives in a large

U.S. corporation by Patton (1960) used hierarchial level as the success indicator. Patton found this factor to be associated with salary level for the executive's age group and the rate of increase of salary.

Pallett and Hoyt (1967) used supervisory ratings of "advancement to date" and "anticipated advancement" as criterion variables in a study aimed at predicting particular job behaviors correlated with success. Eight factors were found to contribute to the prediction of overall success in general business jobs - "Persuasiveness", "Identification with the Business World", "Problem - Solving Ability", "Leadership, "Oral Communications", "Creativity", "Enthusiasm (drive)", and "Identification with the Company".

In a study on the use of interviews in predicting the success of management consultants, Miner (1970) used four criteria of success: Number of promotions, performance rating on leaving the organization, mean increase in compensation rate per year employed, and length of employment. In a second study, Miner (1971) also used managerial ratings of performance and current compensation level as success criteria.

Friedlander and Greenberg (1971) also used managerial rating and tenure of employment as success indicators, although their subjects were not managers, and had been previously unemployed.

Studying entrepreneural success, Hornaday and Aboud (1971) defined as their criterion variable:

"a man or woman who started a business where there was

> none before, who had at least eight employees, and who had been established for at least eight years".

Another study of entrepreneurs, this time in India by Bhandal (1975), used the relative economic growth rates of the businesses in which the entrepreneurs operated as the success index.

A study of the careers of M.B.A. graduates by Gutteridge (1973) involved annual salary as the success criterion because of: (1) its ready availability; (2) its objectivity; and (3) "the belief that most businessmen would accept salary as a valid measure of success".

A similar study of the career success of M.B.A.s by Steele and Ware (1973) concluded:

> "While there is no single and simple criterion of career success on which everyone would agree, we think that those who achieve the position of chief executive come closest to exemplifying a successful management career in an organization".

The above studies have generally used a single criterion of managerial success - be it: hierarchial level, number of promotions, performance or potential ratings, salary increases, length of employment, number of employees, organizational economic growth rate or salary level.

One study of significance, which attempted to use more than one success criterion, was that by Laurent (1962, 1970).

Laurent reported on the development and cross-cultural validation of a success index within Esso Europe's organization. Seventy-one variables, including position level, managerial effectiveness rating, and salary indices, as well as several

control variables such as company of assignment, functional activity, scores on the Ohio State Work Patterns Profile, age, length of service, education, and scores on standardization tests, were factor analyzed. Eleven components were extracted. The strongest factor, in terms of the amount of common variance accounted for, had high loadings on those variables considered to be the primary criteria - position level, salary and managerial effectiveness - and was designated as the success criterion. This criterion had appreciable loadings on age (.36) and service (.22) and so the factor was rotated against another factor heavily loaded on these two contaminating variables to produce a new success factor, independent of age and service.

The new success factor (designated the Laurent Success Index) was described as:

> "a score which can be obtained for each individual in an organization which reflects his relative degree of success in terms of his age, his salary classification, and his company's salary classification policy".[1]

Building on the earlier work of Laurent (1962), Hobert and Dunnette (1967) were concerned about improving the predictability of the success index by introducing moderator variables. They found that the image of the underpredicted group was one characterised by emotional stability, skills in interpersonal relations, self-confidence, broad perspectives, self-insight, dominance and aggressiveness. Over-predicted individuals were characterised by the lack of these qualities. By introducing item and scale moderator tests, they were able to raise the point-biserial correlation between predicted criterion status and actual

criterion status from .65 to .73.

On the basis of the foregoing research findings, we might expect factor analysis of a number of criteria, previously accepted as singular indicators of success, to yield a success factor (or factors) which could be used to represent managerial success. Such a prediction may, however, be modified by a number of personality variables.

The Prediction of Success

Several of the authors quoted above found a number of personal, behavioral, or environmental correlates of the success criteria they used and suggested their findings as possible predictors of managerial success.

Among the personal factors used in the previously-reported research as moderating variables on success were age (Patton, 1970), tenure in the organization (Miner, 1971), pre-educational experience (Gutteridge, 1972), and number of years since graduation (Steele and Ward, 1974).

Educational level attained was also found to be a moderator variable on success by Grubel (1966) and Blanchard (1969).

Other personal characteristics found to correlate with success criteria were: achievement motivation (McClelland, 1961; Warner and Rubin, 1969; and Rundal, 1971), need for power (Warner and Rubin, 1969), support and independence (Hornaday and Aboud, 1971) and job satisfaction, value of growth and expansion, and collaborative attitudes towards labour unions (Rundal, 1971).

Tanofsky, Shepps and O'Neil (1969) made the interesting discovery that a combination of high prior income, and having more than two dependents appeared to be predictive of success in the sales function.

Bailey (1967) found that executive success correlated with: the ability to cope with stress; an attitude of self-expendability; the capacity to concentrate deeply; and the influence of a "model" manager early in their career.

Among the non-personal predictors of career success, peer nominations have been used with some positive results by Hollander (1965) and Amir, Kovarsky and Sharan (1970), both in military contexts.

Greenwood and McNamara (1967) found that situational tests could be reasonably reliable predictors of managerial success, even with the use of non-professional evaluators.

In addition to such psychological and sociological techniques for predicting managerial success, attention in recent years has been given to the use of assessment centres as a technique for identifying high-potential managers and predicting their success. While a review of the literature on assessment centres would be outside the scope of this work, perhaps one such study will serve as an example of what has been done in this field.

Wollowick and McNamara (1969) report on the validation of an assessment centre technique for middle managers in an electronics company. The success criterion they used was the increase in managerial responsibility three years after participation in the assessment program. Their measure of managerial responsibility

was a two-digit position-code, whose level was determined by job analysis of the position, taking into account "the number of people supervised, complexity of the job, financial responsibility involved, skill required, etc."[6]

Results of the study are illustrated in Table 1. The authors conclude that the assessment-centre approach was valid and did add significantly to the predictiveness of pencil-and-paper tests. This was particularly the case when program variables were combined statistically rather than using a subjectively-derived overall rating.

Grant, Katkovsky, and Bray (1967) investigated the use of projective techniques in the prediction of managerial success. Using salary progress as their criterion variable, they were able to find relationships between this factor and a number of scores from projective technique instruments. The projective results, however, appeared to bias other judgements of potential success made by assessment centre staff when the results were known by the staff.

Bray and Grant (1966) summarized the research on assessment centres as follow:

> "Though no firm conclusions regarding the predictive validities of multiple-assessment programmes can be drawn from the rather mixed findings of published research, it does appear clear that the more accurate predictions were obtained where the performance to be predicted was clearly defined, the assessment results did not restrict the range of subsequent criterion performance, and the criterion measures employed were not limited by low reliability and questionable validity."[8]

DeNelsky and McKee (1969) later concluded a review of the literature in this area by saying that assessment centres were

Table 1: Correlations with Change in Position Level in the study by Wollowick and McNamara (1969). (N = 94)

Variable	R
Tests:	
Gordon Personal Profile	
Ascendancy	.39**
Responsibility	-.14
Emotional Stability	-.18
Sociability	.23*
Gordon Personal Inventory:	
Cautiousness	-.05
Original Thinking	.03
Personal Relations	-.17
Vigor	.32**
Leadership Opinion Questionnaire	
Structure	.17
Consideration	-.11
School and College Ability Test	.11
Otis Employment Test	.17
Background and Contemporary Data Form:	
Self-confidence	.23*
Success	.11
Exercises:	-.07 to .32**
Ratings:	-.08 to .32**
Overall Rating:	.47**

* significant at the .05 level
** significant at the .01 level

more able to predict weaknesses than strengths in managers.

Environmental variables which influence managerial success would include those found in studies reported earlier - namely: country in which the organization operates (Laurent, 1970; and Bass and Franke, 1972); public or private sector (Rhinehart, 1969); and the organizational job classification system (Wollowick and McNamara, 1969). Other variables found by Cambridge (1975) included corporate size and functional area.

Summary

On the basis of the findings reported in the above literature, we might expect managerial success to be identified by such criteria as:

1. Hierarchial level within the organization
2. Rate of promotion through the organization
3. Performance rating
4. Level and rate of increase of salary
5. Length of employment with the organization (in the case where opting out of the organization by resignation was a prior behavior pattern)
6. Number of employees reporting to the manager, and
7. Size and growth rate of the organization budget.

These success criteria may be modified by the following qualities relating to the individual:

1. Age
2. Length of employment with the organization (Where employment is a stable characteristic of the individual)
3. Number of years since last full-time educational experience
4. Length of pre-educational work experience
5. Educational level attained
6. Number of dependents, and
7. A number of personal characteristics such as need for achievement, supervisory style, etc. (These personal characteristics, needs and behavior patterns will be examined in more detail in later chapters.)

Since success is to be defined within an organizational context, the size and geographical location of the organization should also be considered, along with its personnel classifications system and the nature of the manager's work.

CHAPTER III

PERSONAL CHARACTERISTICS AND SUCCESSFUL LEADERSHIP

Much of the early research work on the topic of leadership focused on the identification of a number of personality characteristics, or "traits", which differentiated leaders from non-leaders. Reviews of the literature by such writers as Bird (1940), Stogdill (1948) and Gouldner (1950) contain many examples of this approach. In general, however, results from this line of research have proved disappointing in terms of the ability to predict successful leadership on the basis of personality traits.

This chapter reviews some of the literature relating to the personal characteristics of leaders - including personality traits, attitudes, and demographical variables - which purport to serve as predictors of managerial success. Particular emphasis is placed on those personal attributes, such as job satisfaction, expectations and self-perception, which offer a possibility of being changed through a management training and development process.

Non-changeable Attributes

Among the demographic variables considered by researchers, sex (Megargee, 1969; Archibald, 1970; Rosen and Jerdee, 1974), age (Lefkowitz, 1967, Cleland and Newman, 1969; Vroom and Pahl, 1971), racial origin (Bloom and Barry, 1967; Fenelon and Megargee, 1971; Jones, 1973), socio-religious background (Lenski, 1961, Turner and Lawrence, 1965, and Blood, 1969), intelligence

level (Lyske, 1962; Ghiselli, 1968), and work histories (Maier, Hoffman and Read, 1963; McLennan, 1969) have all been found to influence the degree of success a manager attains.

Part of the reason for the effect of these non-changeable variables may be that appointment to higher managerial positions in an organization may be influenced by a number of socio-economic, sexual, racial, political, religious or physical prejudices on the part of the selectors. In addition, such factors as age, education, length of experience and tenure with the organization may be taken into account. Since most of these elements cannot be significantly changed by a management or organizational development activity, we must generally accept these elements as non-controllable moderating variables in the determination of managerial success.

A number of personal characteristics, which may be classified as fundamental personality structure dimensions and subject to limited and difficult change, have also been studied. Included in this category would be the individuals' cognitive complexity, his general level of psychological activity, his propensity toward creativity, and his task aptitude.

Streufert and Streufert (1968) investigated the relationship of personality variables to leadership behavior in terms of the effects of simple complex cognitive style on negotiations. 150 male undergraduate participated in an international negotiation simulation in two-man teams. Cognitive complexity was measured using a sentence completion test, while leadership style was indicated on Stogdill and Shartle's (1948) scales.

The results of the experiment suggest that cognitively-complex leaders have a high tolerance for uncertainty in negotiation tasks, and are generally high in "consideration" or person-orientation. Cognitively-simple leaders are high in the "initiation of structure" and in production-emphasis.

A similar pattern of cognitive style differentiation was discovered by T.R. Mitchell (1970).

Webber (1970) investigated differences in perceptions of supervisor-subordinate communications along an active-passive personality dimension of those involved. He found that this personality trait appeared to modify the amount of communication in which the individual perceived himself to be involved. This, in turn, might influence the individual's performance in a managerial capacity and his style of leadership.

Research into correlates of creativity among technical personnel has had mixed results (see, for example, McDermid, 1965, Tucker, Cline and Schmidt, 1967, and Hall and McKinnon, 1969). Certain organizational variables, such as "job involvement" and "time-extension" (Goodman, Furcan and Rose, 1969), "degree of social task interaction" (Rotter and Portugal, 1969), and "specialization", "project teams" mode of operation, and feedback level[10] (Stone, 1971), have been found to moderate the effects of innate creativity.

A study of the effects of task difficulty on the prediction of success (in terms of salary and position attainment) was conducted by Dodd, Wollowick and McNamara (1970). The authors found that the various personality tests used to predict success

were all moderated by the subject's aptitude toward the task. This suggests that aptitude may moderate the relationship between trait measurement and job performance.

To the degree that cognitive complexity, activity, creativity, and aptitude are required of a successful manager, we might expect these personality variables to be relatively difficult to modify by currently-accepted development techniques. More radical personality change methods in terms of behavior modification technology and psychotechnology are suggested by Skinner (1971) and Scott (1971). Since these techniques are currently out ride the generally accepted practices of managerial training and development and do not yet appear to have reached the stage of non-clinical application, they represent only some interesting potential future developments beyond the scope of this study.

Changeable attributes

Studies focusing on personal characteristics which may be changed can be grouped into those relating to the individual's need and their gratification, and those relating to his perceptions, both of his own role and of the effect of his behavior upon others and upon himself.

1. Need Satisfaction and Its Relationship to Performance

Cummin (1967), Ghiselli (1968), Hackman and Lawler (1971), and Lapcevich (1972), are examples of researchers who have attempted to identify profiles of individual needs which differentiate between leaders and non-leaders.

Cummin (1967) attempted to identify differences between 52 Boston businessmen in terms of their successfulness, using McClelland's (1961) Thermatic Apperception Test. He compared responses to four T.A.T. pictures with salaries (relative to the mean for the group) and found that those executives with greater-than-mean salaries scored significantly higher than their less-paid colleagues on scales recording their needs for achievement, affiliation and power. No significant differences were found with respect to the autonomy, aggression and deference needs.

An investigation into the interaction of motivation, personality traits and managerial success was conducted by Ghiselli (1968). A group of 271 middle-managers were rated as being more-, less-successful than average and the following trait measurements were taken: "intelligence", "supervisory ability", and "self-assurance". Motivation of the managers was classified by Ghiselli in terms of "job security", "high financial reward", "power over others", and "self-actualization".

Positive relationships were found between ratings of the managers success and:

(1) intellectual level (up to a certain point)

(2) supervisory ability (as required by the situation)

(3) initiative (consisting of motivational and cognitive components)

(4) self-assurance, and

(5) self-actualization level

The above relationships were, however, modified by the

basis of the individual's motivation. If "job security" motivation was high, the relationship between supervisory ability and supervisory success was found to be weaker than when the "job security" need was low. If motivation for financial reward was low, there was a substantial relationship between self-assurance and success, but the relationship disappeared when financial motivation was high. The desire for "power over others" appeared to modify the relationship between self-assurance and managerial success in that the relationship was strongest when the power motivation was high. Likewise, "self-actualization" needs moderated the relationship between both self-assurance and supervisory ability on the one hand and the success criterion on the other. Ghiselli concluded that although all the motivations tested appeared to moderate the relationship between the trait characteristics and managerial success, "job security" may be the most powerful interaction variable.

The interaction of job dimensions with strength of employee need was also explored by Hackman and Lawler (1971). Jobs of employees in a telephone company were differentiated with respect to four core dimensions (variety, autonomy, task identity, and feedback). The degree of fulfillment of their higher order needs was found to be directly proportional to the presence of these dimensions in the employee's job.

Studies of the differences between line/staff managers have also been conducted by a number of researchers, including Landsberger (1961), Porter and Henry (1964), and V.F. Mitchell

(1970).

Landsberger (1961) found there to be four issues which differentiated between managers in various organizations. The flexibility/stability of organizations; the long-/short-term perspective; the degree to which results are difficult to measure; and the maximization of personal/corporate goals were the issues involved. Line and staff managers were found to have different perspectives on these issues and may therefore be expected to have different criteria for successful operation.

Porter and Henry (1964) surveyed over 1700 managers with respect to self-, other-directed personality traits. The perceived importance of inner-directed traits decreased from line-managers, to combined line-staff, to staff managers, with a corresponding increase in other-directed traits. The authors concluded that, for success in their operations, staff managers felt the need to display more other-directed behavior, and to be more versatile in their self-directed behavior than their line counterparts.

V.F. Mitchell (1970) studied the line/staff and hierarchial need satisfaction variables in a military context. He also found that line officers were generally more satisfied with respect to psychological needs than their staff equivalent.

The relationship between job satisfaction and hierarchial rank has also been studied by a number of authors.

Brown and Scitsel (1952) found for example, that morale scores for three levels of supervision were positively related to echelon level of the supervisor.

Herzberg, Mausner, and Snyderman (1957) concluded their review of the literature on job satisfaction with the comment:

> "One unequivocal fact emerges from the studies of job satisfaction: the higher the level of occupation, the higher the morale." [1]

Similar conclusions were drawn by Porter (1961a, 1962, 1963), Rosen (1961b), Porter and Mitchell (1967), Rhinehart, Barrett, DeWolfe, Griffin and Spaner (1967), and Sloane (1971).

Ebadat and Cummings (1968) researched the relationships between certain organization variables and managerial motivation. Independent variables considered were: job hierarchical level; corporate size; type of organizational structure; and the staff organizational role. The level, selectivity, and perceived possibility of fulfillment of managerial needs were taken as dependent variables in the questionnaire, which was sent to approximately 600 managers.

It was found that need gratification varied across hierarchical levels. Line managers at lower levels reported greater need fulfillment than staff personnel, while at the middle management level, this trend was reversed. Job level and corporate structure were seen to interact to produce different sets of need perceptions and attitudes.

The relationship between the satisfaction of needs and performance among managerial personnel has also been examined by a number of research workers. In their review of the literature, Schwab and Cummings (1970) identify three major perceptions of the relationship:

1. the view that job satisfaction leads to performance, a

advocated by Herzberg, Mauser and Snyderman (1959),

2. the view, exemplified by Lawler and Porter (1967b), that appropriate performance leads to job satisfaction and,

3. the view that the relationship between the two variables is modified by a number of factors, as perceived, for instance by March and Simon (1958).

A fourth proposition is made by Cherrington, Reitz and Scott (1971), namely that there is no inherent relationship between the two elements and that any desired relationship can, in fact, be manipulated by contingency reinforcement.

In support of the first view, Ross and Zander (1957), for example, attempted to relate employee need satisfaction to turnover. In a company employing over 2,000 skilled female workers in a number of cities, the 1000 employees resigning in a specific four-month period were matched on the basis of six categories of "perceived need-for-the-job" and personnel data with a like number of "stayers". A questionnaire on the strength and degree of job satisfaction of affiliation, achievement, autonomy, recognition and "fair evaluation" needs was administered to both groups.

Significant differences were found between the mean scores of stayers and leavers on the following scales: "amount of recognition perceived as being received", "dissatisfaction with the amount of recognition received", "degree of autonomy received", "dissatisfaction with that degree of autonomy" and "dissatisfaction with the individual's achievement on the job". Ross and Zander concluded that the major influence on employee

turnover were the degrees of recognition and autonomy employees perceived that they received.

A similar study was conducted by Weissenberg and Gruenfeld (1968), who attempted to relate job satisfaction to job involvement for supervisors. Ninety-six male supervisors in a state Civil Service Department were asked to complete scales on "job satisfaction" and "job involvement".

The authors found job involvement to be significantly related to the supervisor's satisfaction with the recognition, achievement and responsibility he received. However, it was unrelated to both the supervisor's satisfaction with the work itself, with his own advancement, and to general hygiene factors. Some relationships between job satisfaction and satisfaction in interpersonal relations with his own supervisor were also reported.

Lawler (1968) undertook a correlational analysis of the relationship between job attitudes and performance. Executive managers in social service agencies were tested on two occasions with a year between testings, and were asked to rate their own jobs on the basis of their performance by their supervisors and their peers. The attitude scale administered to the managers for the perceived relevance of "pay", "promotion", "personal growth", "security", "autonomy" and "the opportunity to utilize their skills" to the organization reward system and the importance of the rewards to themselves.

The best relationship between the performance and attitude variables at the two testings was found between initial attitudes toward the job and performance rating one year later. From this,

Lawler concluded that expectancy attitudes could best be regarded as causing performance rather than performance causing attitudes.

Possible modifying variables on this relationship were investigated by Harding and Bottenberg (1961), Landy (1971), and Skipton and Weitz (1971).

Harding and Bottenberg (1961) expressed concern about the apparent lack of direct relationship between attitudes and job performance, and suggested that certain biographical characteristics might have a modifying effect on that relationship. They were unable, however, to identify such an hypothesized modifying effect at any level of statistical significance.

In a study of the relationship between job satisfaction and performance, Landy (1971) used motivational type as a moderator variable. A group of 175 engineers were subgrouped on the basis of three motivational types ("Professional Identification", "Team Attitude" and "Task Concentration") found by factor analysis of a number of [illegible]. Satisfaction variables were identified by the cluster analysis of responses to a questionnaire [illegible] as "advancement", "ethical principles", "creativity", "pay" and "working conditions". Performance of the subjects was rated by co-workers on six scales. The motivational type was again found to moderate the satisfaction-performance relationship. Skipton and Weitz (1971) explored the relationship between task enjoyment and task success using self-esteem as a moderator variable. Success and failure in the task were found to be related to reported [illegible] task enjoyment regardless of the subject's self-esteem. [illegible]

discrepancies were found between reported task enjoyment and perseverance on the task, which was thought to be an indicator of enjoyment.

The level of involvement of an individual in efforts to achieve organizational goals has also been shown to be dependent on a number of other characteristics.

Fourieza, Hurt and Guetzkow (1971), for example, showed participation to be a function of the individual's confidence in his own views. Thomas (1957) related participation to the individual's ego-strength, while Margulies (1965) showed it to be a function of the individual's ability to perform the group task.

The above studies suggest that the more an individual's higher order needs are stimulated and gratified, (in particular, his need for recognition, autonomy and achievement), the more successful his performance as a manager will be. This relationship may be modified by the individual's motivational aspects, his relative ego-strength and by his own abilities.

c. Expectancy theory

A recent set of personal characteristics influencing managerial performance relates to the perceptions the individual manager has about the instrumentality of his behavior toward achieving certain rewards, and the relationship between effort on his part and performance. In general, studies in this area have been integrated by Vroom (1964) and Porter and Lawler (1968) into what has become known as "Expectancy theory".

The perceived relationship between such behaviors as "working hard", "effort", and "good job performance" on the one

hand and a number of second-level outcomes on the other has been investigated by Lawler and Porter (1967a), Hackman and Porter (1968), Gavin (1970), Goodman, Rose and Furcon (1970) and Korman (1971). The trend in their results indicates that the degree to which the individual sees these behaviors as enabling him to gain salient second-level outcomes (such as managerial success) will strongly influence his performance of these behaviors.

The relationship between perceived instrumentality and performance will naturally be modified by the individual's ability and his freedom to pursue his goals, as confirmed by Georgopolous, Mahoney and Jones (1957), Lawler (1966) and Graen (1969).

Other modifiers, such as the individual's perceptions of equitable pay (Adams, 1963; Weick, 1966; Ilgrich, 1966; Finn and Lee, 1972) and job security (Evans and Molinari, 1970) have also been explored.

Studies on expectancy theory therefore suggest that an individual's performance as a manager will be positively related to his perceptions of the strength of the relationship between effort, performance and success. This relationship will be modified by the individual's freedom to pursue his goals, his ability, and his feelings of job security.

3. Role expectations

A further moderating variable in the job satisfaction-performance relationship - role perception - has been studied by a number of authors, including: Katz and Eisenstadt (1961)

Hurwitz, Zander, and Hymovitch (1968), Thompson (1971), House, Filley, and Gujarati (1971), O'Reilly (1973) and Greene and Organ (1973).

Katz and Eisenstadt (1961) observed a tendency within the Israeli Immigration Service towards a de-emphasis of the bureaucratic role. After detailed analysis of a number of case situations in Israel, they concluded that the bureaucrats were perceiving of themselves more as teachers in trying to teach new immigrants how to be clients of the bureaucracy. The bureaucrats also accepted a responsibility for socializing new immigrants into Israeli society at large, and offered leadership within that society.

Hurwitz, Zander and Hymovitch (1968) investigated the effects of perceived status on the behavior of members in discussion groups. Forty-two persons working in the field of mental hygiene were invited to attend a one-day conference in a Midwestern U.S. city. The individuals were pre-selected on the basis of accredited high/low professional prestige.

At the conference, the subjects participated in a number of mixed discussion groups and reported on: the extent of their liking for other group members; their perceptions of being liked by them; and their perceptions of the extent of their verbal participation. Objective measures of participation were also kept.

It was found that group members occupying low-status positions perceived high-status participants in an ego-defensive manner, wanting to be liked by them, and talking mainly to them.

low-status participants were expected by others to participate to a lesser degree in the discussions, and others perceived their contributions as being exaggerated.

Thompson (1971) studied the effects of supervisory style on job satisfaction, (moderated by self-perception) among administrators of a public agency. He found that subjects with a high level of favourable self-perception were less likely to perceive the supervisory style of their boss as supportive, and reported lower job satisfaction than those with a low level of favourable self-perception.

The relationship between subordinate perceptions of the behavior of their immediate superiors and the satisfaction of subordinate role expectations was explored by House, Filley and Gujarati (1971). Leader "consideration", "initiating structure", "technical competence" and "decisiveness" were found to be related to 11, 10, 2 and 13 measures of subordinate role satisfaction respectively. Hierarchial influence upward was not found to have significant effects longitudinally on the relationship between satisfaction and the "consideration"dimension.

O'Reilly (1973) compared the differences in supervisor and subordinate perceptions of subordinate ability with respect to the subordinate's performance of 44 different tasks. Disagreement existed in the perceived skill level in one third of the cases. O'Reilly concluded that improving a subordinate's perceptions of his own job abilities and the supervisor's values had a positive effect on the subordinate's satisfaction and job performance.

Greene and Organ (1973) researched the effects of received role (the person's perception of what other members of the organization expect of him) on job satisfaction and performance. Role accuracy was determined by 152 first and second-level managerial dyads completing Stogdill and Shartle's (1955) Work Analysis Forms for the first-level manager, while job satisfaction was measured on Bullock's (1952) Job Satisfaction Scale. A number of models were used to try to explain the relationship, but Greene and Organ concluded that compliance to the received role led to performance that was perceived by managers as effective, and subsequently to reward.

The above studies on role expectations suggest that the way an individual perceives the nature of his role, the degree of confidence he has in his own abilities, and the degree of congruency between the individual's perception of his role and the expectations placed upon him by others will all influence his effectiveness in that role.

The manner in which role perception varies with hierarchial ranks has also been studied by a number of authors, including Porter and Ghiselli (1957), Porter (1959, 1961b), Rosen (1961b), Kahn, Wolfe, Quinn, Snoek and Rosenthal (1964), Zajonc and Wolfe (1966), Mitchell and Porter (1967), Lichtman (1970) and Schmenner and Bartlett (1970).

Porter and Ghiselli (1957) researched the differences in self-perceptions between top- and middle-managers. A 64-item trait choice descriptive checklist was given to 170 middle managers and 100 top managers.

The more senior managers perceived themselves as active, self-reliant, and generally willing to risk action on the basis of self-confidence or their own ideas rather than objective evidence. They saw themselves as able to capitalize on opportunities, and not easily discouraged. In social relationships, they described themselves as cultured, refined, candid, straightforward, confident, and able to get along easily with others without having to ingratiate themselves.

The middle managers described themselves in terms of careful planning, thoughtful actions, well-controlled behavior, seldom making rash decisions, placing reliance upon operating within the rules and conditions of the system, and not as confident in their own judgements. They seemed to see themselves as stable and dependent individuals who try to avoid making mistakes both on the job and elsewhere.

In a second study on the differences in self-perceptions among different hierarchial levels, Porter (1959) presented the forced-choice adjective checklist to 291 upper-management personnel, 171 first-level supervisors and 320 operative line workers.

He found that in comparison to both their superiors and their subordinates, first-level supervisors perceived themselves as conservative and cautious. Porter drew a conclusion from his study that first-level supervisors see themselves as a group apart from both their superiors and their subordinates.

Porter (1961b), in a third study, asked 140 bottom- and middle-level managers in 3 companies to select behavioral traits

required for their jobs from a list of 13 traits arranged in 78 forced-choice pairs. He found a correlation of .97 between the levels on their ranking of traits, with cooperative traits being rated higher than individualistic or independent traits. The ranking of traits did vary, however, from company to company.

A study by Rosen (1961b) also examined the difference in managerial role perceptions between hierarchial levels. Sixteen role prescriptions were ranked by managers on three hierarchial levels on the basis of: (a) qualities the incumbent felt his position should possess; (b) the demands he placed upon others; and (c) predictions of the demands others placed on himself.

A tendency for an individual to perceive his role similar to that which he predicted would be demanded by his superior was discovered. There was, however, no significant relationship between the predicted and actual demands of the superior. Rosen concluded that this lack of agreement in the perception of the subordinate's role was greatest at the highest organizational levels.

Kahn, Wolfe, Quinn, Snoek and Rosenthal (1964) employed several measures of emotional adjustment in a study of employees in several industrial concerns. They found that the degree of tension induced by perceptions of job-related role conflict, role ambiguity, and overload increased with the respondent's rank in his organization.

In a study of the cognitive consequences of organizational rank, Zajonc and Wolfe (1966) found that the degrees of differentiation and complexity, characteristic of an employee's

general knowledge of his organization, increased with his rank, and were also higher among staff as opposed to line personnel.

Mitchell and Porter (1967) confirmed for military organizations the findings of Porter and Henry (1964a) that changes in role perception are associated with changes in organizational rank. The authors found that the strengths of inner-directed traits increased with rank, as the strengths of outer-directed traits diminished.

A study by Lichtman (1970) examined the distribution of emotional adjustment and organizational knowledge across hierarchial ranks of a semi-professional/technical government organization. Lichtman found both variables to increase with hierarchial rank.

Schneider and Bartlett (1970) asked the questions: "To what extent do people at a given level of an organization agree on the dimensions of organizational climate?" and "To what extent do people at different levels agree on the evaluation of the organization on the dimensions of interest?" Data from 125 managerial and 380 agent personnel in 69 life insurance agencies was collected using an Agency Climate Questionnaire.

Six dimensions of climate were identified by factor analysis as: Managerial support, interagency conflict, managerial structure, new employee concern, agent independence, and general satisfaction. Perceptions of the organizational climate between hierarchial levels showed a significant lack of congruency. The authors advised caution in drawing conclusions about the nature of organizational climate across hierarchial levels.

We might therefore conclude that the way in which a manager sees his role or describes his activities will be a function of his level in the organizational hierarchy. Likewise, what is construed as successful management will also be a function of the individual's hierarchial level.

To summarise the reported studies on changeable characteristics of individuals which influence managerial performance and success: the individual's need gratification profile, his perceptions of the relationships between effort and success, the role he perceives for himself and that others expect of him, are all potential moderator variables. The success an individual achieves as a manager may be predicted to some degree if data is available on these variables.

The effects of training

Having established that there are a number of personal characteristics which influence managerial performance and which possibly are changeable, our attention must now turn to changes in these attributes, the conditions under which change is possible, and the durability of such change.

Research into the effects of prior environmental and individual predispositions on the change process has been conducted by Katz, Sarnoff and McClintock (1956), McClintock (1958), Katz and Stotland (1959), Mahoney, Jerdee and Korman (1960), Sykes (1962) and Carroll and Nash (1970).

Research by Katz, Sarnoff and McClintock (1956), McClintock (1958), and Katz and Stotland (1959) indicated that individuals

with low ego-defensiveness were more amenable to attitude change through training than those exhibiting high ego-defensiveness. These authors suggested that persons with high job satisfaction and high satisfaction with their existing level of advancement incur most change as a result of supervisory training. They inferred that such individuals perceive training as offering them significant potential for increased job satisfaction.

Mahoney, Jerdee and Korman (1960) investigated the pre-training job satisfaction of participants in a training program and its relationship to training effectiveness. They found a positive correlation between the two variables. This relationship was accentuated when successful results from training were highly dependent on intergroup relationships. In this last case, the attitudes of the company's top management formed a powerful reference point and a moderator variable on the results of training. The authors concluded that the trainees who were most likely to benefit from training were those who had already demonstrated an acceptance of the values of the organization, and who felt secure in their positions.

A study by Sykes (1962) examined the relationship of the results of training to the pre-training sentiments participants held toward senior management. Although one of the objectives of the training program studied was to increase participant morale, Sykes found morale to be negatively correlated to the frequency of contact the participants had with senior management. He also found morale to be negatively correlated to certain

personal characteristics of the participants, such as intelligence (which was positively related to the level of interaction with senior management).

He concluded that the training program had increased dissatisfaction instead of improving morale because it failed to develop congruency in the role-perceptions of managers at different levels in the organizational hierarchy. Six months to a year after the training, Sykes found that 83 of the 97 supervisors involved still felt that the attitudes of senior management needed changing prior to effective organizational change.

A study by Carroll and Nash (1970) investigated other personal and situational characteristics as determinants of reactions to management training programs. The authors developed an instrument to monitor participant reaction to the program and their perceptions about certain aspects of: their jobs; their subordinates; their bosses in the organization; the training and development climate; and the reward/punishment systems.

Trainees who were likely to react favourably to the program, describing its material content as relevant to their jobs, and expressing plans to use the training back on the job, were generally those who fulfilled one or more of the following conditions:

1. They were interested in promotion to higher positions.
2. They saw a relationship between their performance and the corporate reward system or their pay.

3. They were relatively more satisfied with their pay level and with the organization.
4. They perceived that the program had top management support.
5. They had a high current concern about human relations problems.
6. They felt they had greater autonomy in carrying out their jobs, had a greater degree of influence over their superiors and control over their subordinates.
7. They had more years of service with the company.
8. They had been exposed to other management training programs.

Negative relationships were found between participant's liking for the program and their opinions about the number of changes needed in the organization or their feeling that making 'proper' decisions was of high current concern. A significant positive relationship was also found between age and concern over human relations problems - with younger employees being more concerned with better organizing and decision-making than their older colleagues. Similar findings were reported by Alfredo (1971).

The preceding studies have suggested that the following conditions apply for maximum benefit from the training process: low ego-defensiveness, an acceptance of organizational values, an accepting attitude toward top management, and an ambitious disposition.

Research on the training process itself has, in recent years, dwelt particularly on human relations training, or the T-Group. According to Bradford, Benne and Gibb (1964) such

training has as its objectives:

1. to learn more about one's self

2. to facilitate group-member functioning in other group situation.

3. to be a more effective group member, and

4. to create greater understanding of group behavior.

T-Group training would appear to be relevant to change in leadership attributes, since the self concept and the role identification of the manager have already been shown to be related to managerial performance.

Changes in self-concept and self-acceptance as a result of "T-Group" types of training have been studied by many authors with mixed results.[illegible] Burke and Bennis (1961), and Gassner, Gold and Snadowsky (1964) reported significant changes in the self-concept and the concept of the ideal self after sensitivity training, while Moon and Hariton (1958), Asquith and Hedlund (1966), Hand and Slocum (1970) and Vicino, Krusell, Bass, Deci and Landy (1973) report a greater acceptance of self and of others. The findings of [illegible] Zenger and Weschler (1959), Kassarjian (1965), and Calvanca (1968), however, refute this change, while Ford (1971) and Hughner (1971) concluded that while change took place during their experiences, they were unable to predict the direction of such change.

Pino (1971) found significant changes as a result of T-group training along the dimensions of "openness" and "empathy" in interpersonal relations.

Changes in the individual's role concept and his perceived

leadership behavior as a result of T-Group training have also been studied by such authors as: Bass (1962), Gassner, Gold and Snadowsky (1964), Carron (1964), Miles (1965), Oshry and Harrison (1966), Mosvich (1966), Harrison (1966), Bird (1969), Dunnette (1969), Carrigan and Golembiewski (1970), Hand and [illegible]um (1972) and Bouchard (1972).

In an evaluation study of managerial laboratory training, Bass (1962) studied changes in sensitivity to interpersonal behavior by means of a sentence completion test. A group of 34 managers viewed the film "Twelve Angry Men" before and after a laboratory training workshop and, on both occasions, completed questionnaires. A significant increase on a scale indicating "sensitivity to interpersonal behavior" was attributed to the training program. Bass concluded that laboratory training could lead to increased sensitivity and understanding of interpersonal relationships.

Gassner, Gold and Snadowsky (1964) attempted to measure attitude changes toward democratic leadership as a result of human relations training. A "Democratic Leadership" scale was administered to a group of 51 undergraduates attending a human relations training program and 28 students enrolled in a psychology course, who acted as a control group. Pre- and post-training tests indicated a significant gain in the understanding of democratic leadership concepts as a result of the human relations program.

The authors concluded that the human relations training had given stimulated growth and understanding in areas not directly

related to the phenomenal self, and that such programs could be effective in teaching certain leadership principles and in developing particular attitudes toward democratic methods of leadership.

A study of the effects of a human relations training program on a group of supervisors in a chemical company was conducted by Carron (1966). Fleishman's (1960) scale and Adorno, Frenkel-Brunswick, Levinson and Sanford's (1950) California F scale were used with both the experimental group and a control group, pre- and post-training and seventeen months later.

Analysis of post-training results showed that the "structure" score and the "authoritarianism" score for the experimental group decreased significantly as compared to the control group.

In his study of changes in self-orientation as a result of participation, Miles (1965) concluded that changes were more apparent in organization- and group-relevant behavior than in global attributes of the self.

Argyris and Hausser (1966) attempted to determine changes in inner- outer-directiveness as a result of sensitivity training and the effects of such changes on the participants' work. Top middle-managers in a variety of companies were asked to evaluate some possible causes of unresolved work problems and the resources open to them in dealing with those problems, before and after a two-week NTL program. Evaluation of the program was by means of a 15 item check-list, listing a number of causes and possible ways of dealing with problems.

The authors found that after the training, managers viewed

their work problems as less impersonal, saw more distinct connections between getting the job done and the satisfaction of interpersonal needs, and saw themselves as being the significant cause of, or contributor to, their own work problems. The managers failed to see, however, how their new perceptions of problem causes could be translated into action.

Another evaluation study by Mosvick (1960) found that trainees displayed significantly better abilities in analysing a simulated communication-conflict situation which closely approximated "real behavior". The analysis of critical incidents also suggested that trainees applied motive-analysis techniques and concepts to on-the-job situations.

Harrison (1966) was also concerned with changes in concept preferences in interpersonal perceptions as a result of sensitivity training. Kelly's (1955) Role Construct Repertory Test was administered to 113 participants of a NTL sensitivity training laboratory, before, three weeks after and three months after, the training. Significant increases in the use of interpersonal concepts (in comparison to concrete-instrumental ones) to describe associates were found three months after the training, but not in the short term.

A study by Bird (1960) was aimed at identifying behavioral changes resulting from management training. At the beginning of the training program, participants were informed that the program's aim was to provide them with information and ideas which might be used when they returned to the job. At the end of the training course, volunteers were asked to describe one

way in which they were likely to alter their previous way of working as a consequence of what they had learned during the program.

The findings indicated that if no changes in the trainee's knowledge, skill or outlook was identified immediately following training, there was no basis for expecting changes to take place after a period of time. Bird concluded: (1) that changes must be introduced in such a way that it does not provoke undue resentment or hostility from the other people concerned; (2) the extent to which a manager shows initiative toward making changes determines the amount of change he will accomplish following training; and (3) the effectiveness of behavioral change following training is dependent on the manager's superior, who occupies a key position in determining the success or failure of supervisory training.

Hypothesizing that T-group participants learn to know each other more as individuals than as stereotypes, and that they learn to differentiate more fully among other individuals, Dunnette (1962) conducted a study with University of Minnesota students. Sixty-five participants of a six-week T-group course were given "empathy inventory" before and after training. Analysis of the data indicated a statistically significant increase in the incidence of interpersonal interaction and in the ability to differentiate between persons on the part of the experimental group as a result of the training.

Golembiewski and Carrigan (1970) also showed there to be change in the perceptions of both the existing and ideal organ-

izational climates in terms of satisfying individual needs and interpersonal and intergroup relationships.

The authors concluded that: (1) a learning design based on the laboratory method could modify behavior, attitudes and skills, (2) the off-site laboratory experience encouraged participants to adopt new patterns of behavior or to reorder the frequencies of performance of existent behavior back on-the-job, and (3) this derived behavioral pattern helped to modify perceptions of the organizational climate for interpersonal and inter-group relations as well as the norms supporting the existing climate.

In a follow up study of their earlier work[13] with the same subjects 18 months after the program, Hand and Slocum (1972) compared the subject with a control group in terms of: sensitivity to self and to others; leadership behavior; and work group performance. Managers participating in the training were found to be more aware of themselves and of others, and were more orientated toward the development of mutual trust in their work groups. Subordinates of the participating managers reported an improvement in the rapport they felt they had with the managers and in their two-way communications with them. A significant correlation was found between these changes and ratings of organizational performance.

An examination of the impact of training and motivation on the performance of brain-storming groups was conducted by Bouchard (1972). He found that either training or motivation promoted highly-effective groups, but groups with low interpersonal effectiveness resisted both manipulations.

Kernan (1964), however, found no significant change as a result of T-Group training in one group of engineering supervisors he studied, along the "Consideration" or "Initiating Structure" dimensions.

The durability of change in these characteristics (where it appeared) has already been mentioned in a number of studies. Research by Lohmann, Zenger and Weschler (1959), Burke and Bennis (1961), Bass (1962), Gassner, Gold and Snadowsky (1964), Miles (1965), Kassarjian (1965), Oshry and Harrison (1966), Dunnette (1969), Hand and Slocum (1970), Huebner (1971) and Ford (1971) all used pre- and post-testing. Their results indicate that although there may be some change in personal characteristics as a result of Human Relations training, the immediate effects cannot be predicted with any degree of accuracy.

Harrison (1966), Carrigan and Golembiewski (1970), and Hand and Slocum (1972) report changes enduring for three and eighteen months respectively; although [illegible] (1968) [illegible] indicates no net change after 6-10 weeks. Harris and Fleishman (1955) continued an earlier study by Fleishman (1953) and concluded that human relations training made the participants' leadership behavior less stable.

Thus, studies on the durability of changes resulting from human relations training have met with mixed results. More studies report attitudinal changes immediately following a training program than can testify to the endurance of such changes over time. Any analysis of the effects of management Human Relations training on managerial success must, therefore,

take into account the interval between the training and the identification of managerial success.

Summary

A number of variables have been identified which may be considered to influence a manager's success. Characteristics which may determine success but which the manager can only recognize and not change include: sex, age, intelligence, physical characteristics and work history.

Cognitive style, passivity, and creativeness represent traits which may be changed, although research is limited and prospects dim.

A manager's performance will also be determined by a number of personal characteristics which are subject to change, namely need gratifications, role perception and the perceived instrumentality of performance to salient outcomes.

A number of studies have investigated the pre-training conditions within the individual and in the organization which maximize the result of training.

A number of results of human relation training programs, in terms of the perceptions and interpersonal attitudes of participants have been identified, although the nature and durability of these changes is open to further research.

CHAPTER IV

SUCCESSFUL LEADERSHIP BEHAVIOUR

Its definition.

The post-war Group Dynamics movement[16] swung the attention of leadership theorists away from the perception of leadership as a set of personal characteristics or traits to the belief that leadership comprised a set of behaviours within a group setting.

Stogdill (1948), for example, concluded a survey of the literature on leadership traits by saying:

> "Leadership is not a matter of passive status, or the mere possession of some combination of traits. It appears rather, to be a working relationship between members of a group. which the leader acquires through active participation and the demonstration of his capacity for carrying out cooperative tasks through to completion."

Likewise, Bowers and Seashore (1966) state:

> "First, the concept of leadership is meaningful only in the context of two or more people. Second, leadership consists of interaction: more specifically, it is behaviour by one member of a group toward another member or members of the group, which advances some joint aim."[17]

The identification of leadership behaviour.

Just as the trait theorists sought to identify personality characteristics which differentiated leaders from non-leaders, certain researchers have attempted to identify the differences between the behaviour of leaders and the behaviour of non-leaders.

Research by Carter, Haythorne, Shriver, and Lanzetta (1950),

Comrey, High and Wilson (1955), Bailey (1956), Kahn (1956), Katz and Kahn (1960), Katz (1964), Smith and Siegal (1967), Zdep (1969), Morris and Hackman (1969), Wofford (1970), Leim, Slavinski, and Grant (1972), Lyterhoeven (1972), and McCormick, Jeanneret and Mecham (1972) follows this line. In general, these authors found that (depending on the nature of the task, and the composition of the work group) successful leaders tended to be involved in: the diagnosis of problems; initiating action and giving out information related to carrying out that action; keeping workers informed; helping subordinates with job problems; allowing subordinates a high degree of freedom to act; playing a role which differentiated them from their subordinates; and facilitating employee participation in decision-making.

Changes in these behaviours due to the manipulation of certain organizational variables have been reported by a number of authors. Hemphill (1950), Sheriff (1955), and Butterfield (1972)[18], for example, explored the hierarchical level dynamics, while Hackman (1969) and Bowers, Bass, and Rosenstein (1970) investigated variations in leadership behaviour as the organization developed, and over time, respectively.

The more successful executives appeared, from the above studies, to spend more time on internal business control, community and social affairs, long-range planning, and the preservation of corporate assets than did their less successful colleagues. The distribution of the executive's time on various activities, however, was found to be a function of the stage of

growth of the organization and the executive's own experience.

In short, it would appear that research into behavioural characteristics of leaders as compared to non-leaders has met with limited success. Factors relating both to the situation and the process, or style, of leadership action would appear to seriously impair the prediction of leadership success on the basis of particular leadership behaviours.

The effects of particular leadership behaviours

The focus on patterns of leadership behaviour has led to the development of a number of dimensions of leadership behaviours commonly referred to as "leadership styles".

a) Autocratic - Democratic

One of the earliest investigations into the effects of certain types of leadership behaviour was conducted by Lewin, Lippitt and White (1939). Their classic study explored the effects of laissez-faire, democratic, autocratic[1] styles of leadership on the behaviour of boys organized into groups for the purpose of making masks. Group leaders (adults) collaborated with the experimenter by displaying a particular style of leadership, and the children were then observed.

Typical of the observed differences between the groups was a greater amount of aggressiveness in the autocratic groups, both in reacting to the leader and in interacting with the other members. In the laissez-faire and democratic groups there was greater attention to "group-minded" suggestions and "work-minded" conversations, although the level of psychological

involvement in the laissez-faire group was appreciably lower than that in the democratic group. Over all, the democratically-led groups were found to show more group commitment and unity, and less aggression and apathy, than the other groups. A notable exception to the general preference for the democratic group was one boy, the son of an Army officer, who found the democratic situation as frustrating as other children had found the authoritarian situation.

This dimension of leadership behaviour, later identified by Lonnenbaum and Massarik (1950) as "participatory" versus "authoritarian" leadership has been explored by a number of researchers.

Anderson and Brewer (1945) found, in a classroom situation, that participatory leadership led to both productive and integrative behaviour on the part of followers.

McCurdy and Eber (1953) investigated the effects of democratic leadership on quality of work in a laboratory task, using the California F-scale as a predictor of authoritarianism. Errors per unit-of-work, and errors per unit-of-time were both minimized in the democratic leadership pattern.

A study by Maier (1953) transferred the participation dimension to a multiple role-playing situation in which a method study problem was to be solved. Not only was acceptance of a previously approved method higher under democratic leadership, but there was a greater tendency to accept compromise solutions to the problem, and a significantly lower perception of uncooperativeness among group members under democratic leadership.

Preston and Heintz (1953) confirmed this effect of greater cooperation among group members under democratic leadership conditions in discussion groups. They found members of participatory discussion groups more ready to change earlier opinions and to feel satisfied with their opinion change than members of "supervisory" groups.

Baugarte (1957) discovered that participatory leadership in a research laboratory led to high levels of staff motivation, a greater sense of progress toward research goals, and more favourable attitudes toward the job.

Argyle, Gardner and Cioffi (1957) found democratic leadership to be related to employees' perceptions of supervisors as being employee-centred and non-punitive in disciplinary matters, as supervising in a "general" rather than "close" manner and as not using inordinate pressure on their staff to get work done.

In a later study, the same authors (Argyle, Gardner and Cioffi, 1958) found democratic leadership to relate to a small but significant fraction of productivity variance, and to be negatively associated with absenteeism.

A number of other authors, including Zeleny (1939), Bass (1949), Bovgotja (1955) and Kirscht, Lodahl and Haire (1959) found active participation in group decision-making to be positively related to the leadership ratings of individuals in groups.

Anderson and Fiedler (1964) related participation to performance on a series of tasks demanding creativity. They

found that participatory leadership led to a greater quantitative, but lower qualitative, output by the work group than did "supervisory" leadership.

A study by Wager (1963) examined the perceived fulfillment of supervisory role obligations among workers whose supervisors operated with different styles. The supportive, or democratic, leadership style was found to be a powerful moderating variable on the relationship between employees' perception of the degree to which a supervisor fulfilled his role obligations and actual supervisory action.

Ritchie and Miles (1970) used an instrument by Blankenship and Miles (1968) to detect the degree that employees perceived that they participated in decision-making. They found that the degree of perceived participation in decision-making by subordinates was positively and significantly related to the satisfaction managers had with their superiors.

A study by Latona (1972) also investigated the relationship between democratic leadership and productivity, only within a State Government agency. Again a significant positive relationship was found.

Bragg and Andrews (1973), reporting on the introduction of participative management in a North Vancouver hospital, found that employee suggestions and productivity increased significantly, while absenteeism decreased.

Perhaps the conclusion reached by Anderson (1961) with respect to the relative effectiveness of authoritarian versus democratic leadership may be reiterated:

> "The evidence available fails to demonstrate either authoritarian or democratic leadership is consistently associated with higher productivity. In most situations, however, democratic leadership is associated with higher morale."[20]

The effects so far reported would suggest that participatory leadership may be associated with higher productivity, better quality of work, more cooperation among workers, less absenteeism, (quantitatively) more creativity, a greater perceived fulfillment of supervisory role expectations and more satisfaction with superiors. All these elements may be associated with the characteristics of a successful leader.

It must be noted, however, that relationships between democratic leadership styles and these organizational indicators of performance can be modified by a number of variables.

An investigation by Pelz (1951), for example, showed employee satisfaction with democratic leadership to be dependent on the size of the group involved. Groups with more than ten members showed a distinct preference for a less democratic leader than did groups with less than that constituency.

Likewise, the research of Page and McGinnies (1959) on adult discussion groups revealed that group members who participated very little in the discussions showed preferences for directive leadership. High participators did not display the same preferences.

The schedule of punitive behaviour by supervisors was found to moderate the effects of penalty magnitude on performance by Schmidt (1969).

Rosenbaum and Rosenbaum (1971) also found the degree of

situational stress to be a significant moderator on the relationship between authoritarian leadership and both productivity and employee satisfaction.

b) The Ohio State Studies

Further definition of leadership behaviour appeared to be required, according to a number of researchers working out of the Ohio State University Bureau of Business Research. A panel of nine faculty members constructed a questionnaire on leadership behaviour along nine dimensions and administered the instrument to a number of educational groups. Factor analysis of the results, by Hemphill and Coons (1957), revealed three orthogonal factors, which they labelled as: "maintenance of membership character"; "objective attainment behaviour" and "group interaction facilitation behaviour".

A field study of the Hemphill and Coons (1957) instrument was conducted by Halpin and Winer ([illegible]). [illegible] completed the instrument, and the results were again factor analysed. Four orthogonal factors were identified this time, and they were labelled "consideration", "initiating structure", "production emphasis" and "social awareness". Since the first two factors accounted for [illegible] and [illegible] of the total variance respectively, the last two factors were eliminated from further analysis, and the instrument was modified to become the Leader Behaviour Description Questionnaire.

A self-reporting version of the Leader Behaviour Description Questionnaire was later introduced by Fleishman ([illegible]), and became known as the Leadership Opinion Questionnaire. This

instruments contained scales on self-reported "Consideration" and "Initiating Structure".

The "Consideration" dimension of leadership behaviour has been explored by a number of researchers, including Halpin (1957), Hemphill (1957), Hills (1963), Stroud (1959), Besco and Lawsche (1959), Nealey and Blood (1968), Kavanagh (1972) and Evans (1973).

Another study by Halpin (1957) concerned the differing perceptions of leadership effectiveness among aircraft commanders. Eighty-nine commanders of B-29 aircraft and 662 crew-members were involved in this study. It was found that supervisors of these aircraft commanders tended to rate favourably the performance of aircraft commanders who scored highly on the "Consideration" scale.

Hemphill (1957) related "Consideration" to the administrative reputations of College Department Heads. A positive relationship was found between the two variables. A similar relationship was found by Hills (1963), who worked in terms of "the representative functions of leadership" and found behaviour in that category to be associated with high administrative reputations.

Stroud (1959) attempted an evaluation of a supervisory training designed to enable supervisors to handle the human relations aspect of their job more effectively. The first part of her questionnaire consisting of a supervisory orientation instrument based on the Leadership Opinion Questionnaire. A second section asked subjects to identify four "Critical

Incidents" and to describe why their treatments of the incidents had been successful. The questionnaire was administered to a trained group and a control group of supervisors before and after training.

Stroud found that supervisors who claimed the greatest improvements as a result of the training program showed the greatest changes in their "Consideration" scores. However, on following up these critical incidents, she found some discrepency between the amount others perceived them to have made. She concluded that the self-reports of participants were generally invalid indicators of behavioural change due to training.

An empirical study by Besco and Lawsche (1959) investigated the relationships between supervisor and subordinate ratings of a supervisor and the performance of their departments. Subjects in the study were foremen in 29 production departments of a cereal processing plant. They used Rambo's (1958) version of "Consideration" and "Initiating Structure" scales as their independent variables, and managerial ratings of departmental effectiveness as the dependent variable. Results indicated that "Consideration" was perceived by both the supervisor and the subordinates of the foremen and as being positively related to department effectiveness.

The relationship between "Consideration" and work group performance in a hospital situation was studied by Nealey and Blood (1968). Again "Consideration" was found to relate positively to subordinate satisfaction.

Kavanagh (1972) explored the "Consideration" dimension in the dyadic relationship. Undergraduate students of business watched four videotaped role-plays which showed a supervisor giving task instructions to a subordinate. Before watching the tape, the students were advised that the task was simple/complex and the subordinate was high/low competence. After seeing the tape, the students were asked to rate the supervisor's leadership behaviour along "Consideration" and "Initiating structure" dimensions.

Kavanagh found that the manipulation of the subordinate's competence (i.e. by giving a highly competent subordinate a simple task) had a strong negative effect on the degree of "Consideration" attributed to the supervisor. He suggested that further research was required on the supervisory role and the independence of the two leadership dimensions in the dyadic relationship.

In a study of the sales performance of life-insurance company branch offices, Graham (1973) found "Consideration" to be negatively related to group sales performance. The relationship appeared to be modified by the supervisor's score on Fiedler's (1958) Least Preferred Co-worker scale, in that moderate- and high-LPC scorers did have improved performance when their "Consideration" scores were high, but Low - LPC scorers did not produce the same improvement.

On the basis of the above studies, we might expect high scores on the "Consideration" dimension to be positively associated with: satisfactory supervisory ratings; administrative

reputations; organizational effectiveness; and subordinate satisfaction.

A negative relationship between "Consideration" and sales performance reported by Graham (1973) does throw some doubt, however, on the general positive relationship to organizational effectiveness. Insofar as managerial success is dependent on the above affects of "Consideration" we might expect to find that successful managers score higher-than-the-mean on this dimension.

The "Initiating Structure" dimension of leadership behaviour was considered in the studies by Halpin (1957), Hemphill (1957), Smith and Honour (1960) and Bass and Lawson (1970) reported above. It was also the topic of studies by Maier and Maier (1957) and Hunt and Lichtman (1967).

Halpin (1957) in his study of aircraft commanders found that combat effectiveness was associated with greater-than-the-mean scores on both "Consideration" and "Initiating Structure" dimensions. Both scales were required for prediction of overall combat effectiveness.

The necessity of both scales for prediction was reinforced by Hemphill (1957) in his study of the administrative operations of College Department Heads, and by Smith and Honour (1960) in their evaluation of Managerial Grid training.

Likewise, Cummins (1971) found that the rated "Initiation of Structure" dimension was more closely related to quality of performance for "High- Consideration" foremen than for "low-Consideration" foremen.

In Besco and Lawsche's (1959) study of the relationship between leadership behaviour and performance in a cereal-processing plant, they discovered a difference in supervisor and subordinate perceptions of that relationship. Supervisors believed that there was a high positive relationship between their inclination to initiate structure and organization effectiveness, but subordinates did not share this view.

The authors concluded that, in this case, a highly structured organizational climate and production technology may have restricted the style of the supervisor along the "Initiating Structure" dimension. They suggested that when highly-structured operations beyond the foreman's control are present, variations in organizational effectiveness could be attributed to differences in the "Consideration" dimension of leadership alone.

The effects of structure in group discussions on the quality of group decision-making was the subject of an experiment by Maier and Maier (1957). A case study was presented to 47 groups of 4-5 members, plus a leader, in an undergraduate psychology course. Leaders were briefed to be either "developmental" (i.e. high in structure) or "free" in their discussion leading. On the basis of the experimental results, the authors concluded that "developmental"-type discussion should upgrade the quality of decision because such discussions enhance the group thinking by a systematic coverage of the problem under consideration.

Negative effects of a structural leadership perspective

were also discovered by Hunt and Lichtman (1969) in their study of counselling activities in a large corporation. These authors found that the degree of structure in perceptions of the counselling function was negatively related to: worker job satisfaction; clarity of the workers understanding of what was expected of him; and the confidence the worker had that his supervisor really understood the workers job.

Interaction between the two variables was also discovered by Dawson, Messe and Phillips (1972) in an academic setting.

On the basis of the above studies on "initiating structure", we might expect this dimension also to be related to managerial success. The relationship would appear to be modified by the "Consideration" dimension and the degree of structure perceived within the organizational environment.

Beer (1966), however, reinstituted the four factors arising in the original Ohio State Studies by including the "production emphasis" and "freedom of action" components. His dependent variables were: motivation; perceived opportunity for the satisfaction of the individuals needs; and perceived satisfaction of these needs.

Beer concluded that the problem of supervision and workers motivation was too complex to be explained by a simple two-dimensional leadership behaviour model. He urged a greater respect for the complicated interaction of the many individual and environmental factors in the work situation.

(c) Least Preferred Co-worker score

Beer's concern with the environmental influences on leader-

ship behaviour was not new. The researcher most commonly associated with the approach to leadership which stressed situational variables is probably Fiedler (1958). By way of introduction to Fiedler's contingency theory of leadership, however, it may be appropriate to examine his work on the unidimensional scale he called the "Least Preferred Coworker" scale.

Fiedler (1954) developed a series of interpersonal perception scales in the form later classified by Osgood, Suci and Tannenbaum (1957) as "Semantic Differential" scales. Subjects were asked to identify, and to describe on the scales, the individual whom they considered to be their most-preferred co-worker (MPC Score) and their least-preferred co-worker (LPC Score). The profile of similarities between these two scores reveals the "Assumed Similarity between Opposites" (ASO Score). LPC and ASO scores have yielded split-half internal consistency coefficients and inter-scale correlations of over .90 and are therefore used interchangeably.

The LPC score, according to Fiedler (1971), must be interpreted as a measure which at least in part reflects the cognitive complexity of the individual and which in part reflects the motivational system that evokes relationship-oriented and task-oriented behaviours from high versus low LPC persons in situations which are unfavourable for them as leaders.

In terms of leadership style, a favourable description of the least preferred co-worker (high LPC score) indicates a

relationship-orientated style, and corresponds in some degree to a high "Consideration" score. An unfavourable description of the least preferred co-worker (LPC scores) indicates a task-orientated leadership style, and may be compared to a high "Initiating Structure" leadership style.

ASO score may be considered a measure of the cognitive complexity and social distance of the leader.

Another series of studies by Fiedler (1955) with bomber- and tank-crews introduced the sociometric preference of the work-group as a moderator variable on the relationship between ASO score and group effectiveness. Low ASO-scoring leaders had the most effective crews when they accepted and endorsed their sociometric keymen. High ASO-scoring leaders were more effective when they did not endorse their keymen. Further experiments by Cleven and Fiedler (1956) and Julian, Bishop and Fiedler (1966) replicated these results.

A study by Godfrey, Fiedler and Hall (1959) with consumer co-operative organizations revealed a curvilinear relationship between LPC scores and corporate net income. Low LPC managers performed best in organizations in which their relations with other key members were either very good or very poor. High LPC managers performed best in the intermediate range of group relationships.

In their study cited earlier, Nealey and Blood (1968) also found a positive relationship between the LPC score of second-level supervisors and the performance rating of first-level supervisors in a hospital situation. First-level supervisors

with high LPC scores and high esteem for subordinates were also found to be associated with low-morale groups.

The effects of LPC scores on group creativity were explored by Fiedler, Meuwese and Oonk (1961) in a Dutch study. The correlation between leader LPC score and group performance on creative tasks was high and positive in homogeneous formal groups, and high and negative in groups that were either heterogeneous or had informal leadership. The authors attributed the results to the degree of stress and tension within the group, and its match with the leaders preferred operating style. Similar conclusions were drawn from a later study by Fiedler (1962).

Muller (1970) approached the problem of the environmental/personality determination of leadership style by varying the time span of discretion in decision-making his subjects had in a classroom task. He found that supervisors with a short time span of discretion in decision-making had better subordinate ratings of "group atmosphere" and "consideration" in contrast to supervisors with a long time frame of discretion, who scored lower on Fiedler's LPC scale, had a more structured group environment, and were more critical in their self-evaluations.

Graen, Orris and Alvares (1971) introduced some methodological considerations associated with Fiedler's Contingency Theory. They suggested that the theory must take into account differences in the leader's perception of his position power, a better taxonomy of tasks, leadership style and group atmosphere.

A study by Evans (1973) focused on the effects of leadership styles on the differential treatment of employees. Working in a public utility company, Evans found that high-LPC supervisors were highly discriminatory between subordinates in their judgements of their subordinates' work. This differentiation appeared to modify the relationship between the subordinates' perception of supervisory behaviour and his performance.

In summary, LPC score would seem to be positively related with team effectiveness, morale, and creativity, but the relationship may be modified by the degree of stress in the group and the sociometric relationship between the leader and keymen. Differential treatment of employees would also be expected from high LPC managers.

If the LPC score were used as a predictor of managerial success, it would be predicted that a positive relationship between the two variables for situations intermediate in stress and sociometric leadership choices.

Summary

Researchers have identified a set of haviours which differentiate managers at various levels f. m non-managers.

Democratic leadership behaviour, in contrast to authoritarian behaviour, tends to lead to greater productivity and employee satisfaction, which in turn may lead to managerial success.

The Ohio-State studies suggest that a combination of "Consideration" and "Initiating Structure" leads to satisfactory performance rating, greater organizational effectiveness and subordinate satisfaction.

Fiedler's work on the Least Preferred Co-worker scale suggests that dimension to be related to managerial success in a non-linear manner, being dependent upon the degree of stress within the situation.

CHAPTER V

SITUATIONAL DETERMINENTS OF LEADERSHIP SUCCESS

Leadership has been considered from the perspectives of the characteristics of the individual leader and the elements of his or her behaviour. Leadership has also been defined as a process of interpersonal influence.

Stogdill (1950), for example, defines leadership as:

> "The process of influencing the activities of an organized group in its efforts toward goal-setting and goal-achieving."[1]

Likewise, Bennis (1959) calls it:

> "The process by which an agent induces a subordinate to behave in a desired manner."[2]

Defined in this way, we might expect leadership to be dependent upon the situation in which the leader operates. This point has been emphasized by Fiedler (1958) and reiterated by a number of others, including Jenkins (1947), Hemphill (1949), Gibb (1954), McGregor (1960), Mockler (1971) and Hersey and Blanchard (1972).

Jenkins (1947), for example, concluded a review of the literature dealing with the problem of leadership selection by saying:

> "Leadership is specific to the particular situation under investigation. Who becomes the leader of a given group engaging in a particular activity and what leadership characteristics are, in a given case, are a function of the specific situation including the measuring instrument employed. Related to this conclusion is the general finding of wide variations in the characteristics of individuals who become leaders in similar situations, and even greater divergence in leadership behaviour in different situations."

Likewise, Hemphill (1949) concluded from his extensive studies of leadership behaviour:

> "There are no absolute leaders, since successful leadership must always take into account the specific requirements imposed by the nature of the group which is to be led."[27]

Gibb (1954) identified the variables in the determination of leadership behaviour as: the nature of the organization; the attitudes, needs and goals of the group; the process of social interaction; and the congruency of individual and group goals.

McGregor (1960) also suggested:

> "The performance of an individual at work in an industrial organization is a function of certain characteristics of the individual, including his knowledge, skill, motivation and attitudes, and certain aspects of the environmental situation, including the nature of his job, the rewards associated with his performance and the leadership provided him."[28]

Mockler (1971) used the phrase "situational theory of management" to suggest that managerial decision and activities in leadership, staffing, operations research and systems design, control and planning must be situationally dependent.

Building on the Ohio state leadership studies, Hersey and Blanchard (1974) attempted to add an "effectiveness"[29] dimension to the "consideration" and "initiating structure" scales. They suggested that:

> "The difference between the effective and the ineffective styles is often not the actual behaviour of the leader, but the appropriateness of this behaviour to the situation in which it is used."[30]

From the foregoing theoretical perspective, we might expect that the nature of the organization and its goals,

the attitudes, needs and goals of the workgroup, and the process of social interaction in the organization influence the meaning of leadership within the organization. Managerial success might therefore be expected to depend on these elements.

The nature of the organization and its goals

A number of factors relating to the organization, or the suborganization [illegible] manager works, have been investigated by research [illegible] the goals of the organization, its size and stage [illegible] development, and a number of factors that relate to the individual's job have all been considered as determinants of appropriate managerial behavior.

Lawler, Porter and Tannenbaum (1968) explored the differences in the interaction patterns between manufacturing and social service managers. They found that social service managers tended to spend more time interacting at a distance (i.e. over the telephone) and with people other than their peers than did manufacturing managers.

Likewise, Evan (1963) studied the relationship between the degree to which employees perceived they achieved their work goals and their satisfaction with pay, supervision, fellow-workers, and the work itself for a group of utility workers and nurses. The relationship between goal achievement and satisfaction was significantly stronger for nurses than for utility workers; hence, Evan concluded that work technology had effects on job satisfaction.

The relationship between job characteristics and employee

reactions was explored by Hackman and Lawler (1971). Employees of a telephone company were the subjects for the study. Their jobs were analysed along four core task dimensions (variety, autonomy, task identity and feedback) and two interpersonal dimensions (dealing with others and opportunities for friendship). A measure of strength of desire for the satisfaction of "higher order" needs (e.g. obtaining feelings of accomplishment and personal growth) was also used as an independent variable.

It was predicted and found that for jobs high in the core dimensions, employees who were desirous of higher order need satisfaction tended to have high motivation, high job satisfaction, be absent from work infrequently, and be rated by supervisors as doing high quality work.

Of methodological significance is the finding of Dillon, Graham, and Aidells (1972) that the relevance of the problem to the individual's situation influenced the performance of brainstorming groups in a laboratory. This suggests that results of laboratory studies must be viewed with some suspicion if inferences are made about the transferability of findings to the "back-home" situation.

We might therefore expect to discover that organizations with different technologies or goals have different expectations for the performance of their management employees and might encourage and reward different managerial traits or behaviours. Managerial needs would therefore appear to be dependent on the nature of the organizational task.

The differential requirement for managerial abilities a

an organization develops have been studied by Hemphill (1950), Bouchard and Hare (1970), Tuckman (1965), Bennis and Shepard (1965), and Sanders (1968).

A classic study by Hemphill (1950) was concerned (among other things) with the effects of group size on leadership behaviour. Questionnaires were distributed to 500 college students and adults, requesting data on the size and group leadership behaviour of voluntary organizations, clubs and societies of which the subjects were members. Groups whose leaders were rated "good" or "excellent" were then differentiated with respect to size. Forty-seven significant differences were found between reported good leadership behaviours in groups of under thirty members and those of over that membership number.

For leaders of large groups, it was discovered that there was a greater membership demand for strength, stability, reliability and predictability. Less consideration for individual was indicated, along with the subordination of membership to the leadership and greater tolerance of leader-centred direction.

Bouchard and Hare (1970) used group size as a moderator variable on the number of ideas generated during a brainstorming session. They found that larger groups produced more ideas, especially when they existed as "nominal" groups rather than as real groups.

These findings suggest that behaviour which is conducive to managerial success in a small organization may not be so conducive

in a larger one.

An integration of the models of group development advanced by Bales and Strodtbeck (1951), Theodorson (1953), Modlein and Faris (1956), Schutz (1958) and Schroder and Harvey (1963) was attempted by Tuckman (1965). He concluded that different leadership behaviours were required by the different issues facing the group at its various stages of development. Bennis and Shepard (1965) came to similar conclusions.

Sanders (1968) was concerned with changes in managerial functions during organization evolution, and the properties of organizational membership which effected performance during that process. He administered Ghiselli's Supervisory Description Index which measures managerial abilities, initiative, intelligence, perceived occupational level, decision-making approach, and maturity, and an instrument by Gough, which measured achievement, domination and aggression need, to 50 three-man teams engaged in a laboratory simulation.

As the organization developed, the number of changes in organizational functions decreased and lower level managerial abilities were manifest. High performance levels during evolution was found to be dependent on there being one person in the triad with high decision-making abilities.

The inference of this study for managerial success is the same as for Hemphill's (1950) study. What is classified by the organization as successful management depends on the stage of growth the organization has achieved. Different managerial behaviours will be perceived as worthy of reward or recognition

according to the stage of growth the organization has reached.

Other elements of the organizational environment which have been related to requirements for specific managerial behaviour include: the degree of specificity of organizational goals; the structuring of the task; the favourableness of leader-member relations; the leader's position power; the leader's time-span of discretion; and the degree of control, challenge and influence in the job.

[illegible] and Locke ([illegible]), for example, researched the effects of [illegible] goals on worker attitudes. They gave a group of twenty undergraduates a series of simple addition tests and measured their attitudes (scales on boredom, the degree and intensity of concentration, and effort) between trials. One group was given specific goals to attain on each trial, while the control group was asked to "do their best". The experimental results indicated that specific performance goals could be used to raise the motivational level of those [illegible] who brought little motivation to the task.

A study by [illegible] of environmental ambiguity [illegible] self-[illegible] satisfaction was [illegible]. He found that environmental ambiguity [illegible] were [illegible] satisfaction. The important [illegible] variable was the individual's belief that role characteristics were consistent with the nature of the world as he knew it.

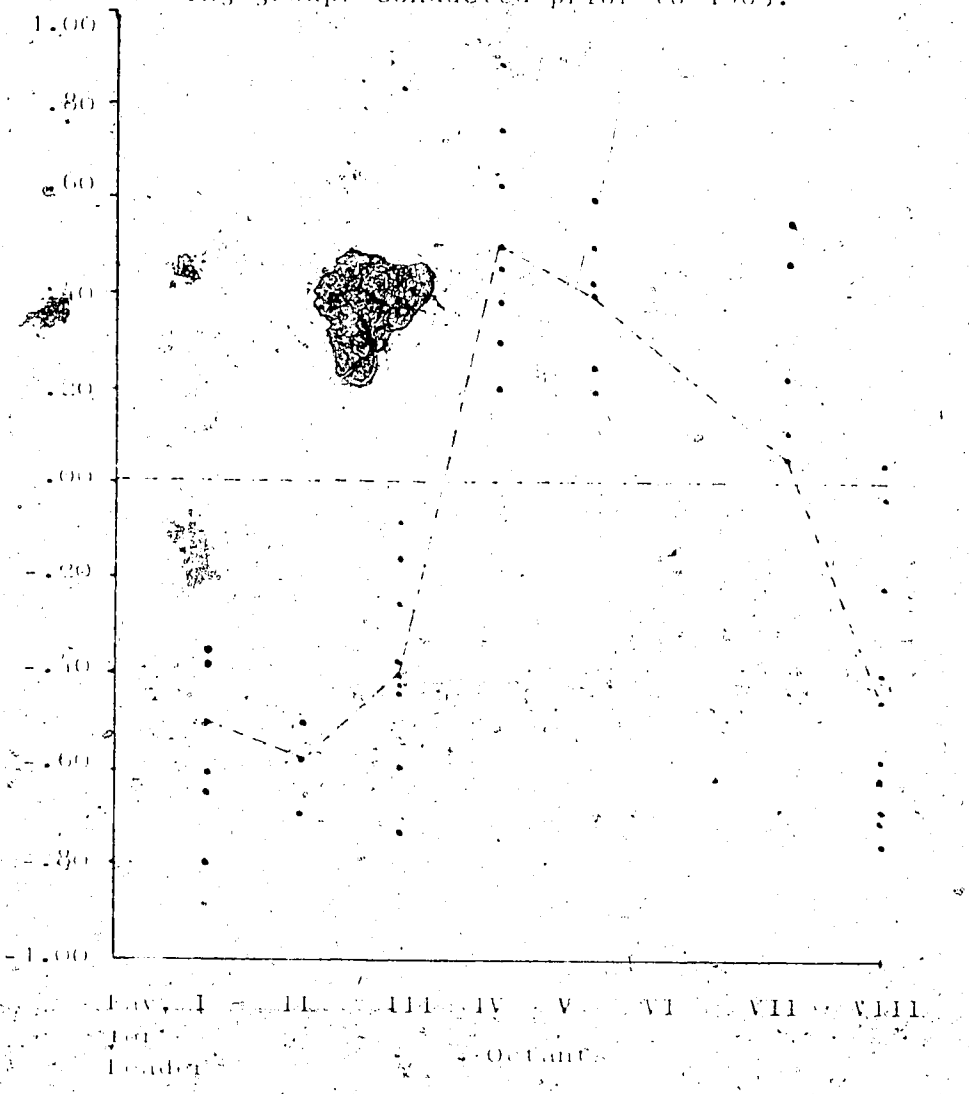
In Fiedler's ([illegible]) classic study of leadership effectiveness, the "fit" of personality and situational variables was considered. Situations were classified along a scale of

leadership favourableness in terms of leader-member relations, task structure and leader position power[31], as shown in Figure .

The leader's LPC score was correlated with various group performance indicators for some 59 studies. Median correlation results suggest that the person-orientated leader (with high LPC score) proves superior[32] in situations in which: (1) leader-member relations are good, the task is unstructured and there is little power associated with his position; or (2) leader-member relations are moderately poor, the task is structured and the leader's position power is strong. The task-orientated (low LPC) leader proves superior when: (1) leader-member relations are poor, the task is structured and his position power is high (2) leader-member relations are good, and the task is structured; (3) leader-member relations are good, the task is unstructured and the leader's position power is high; or (4) leader-member relations are moderately poor, the task is unstructured and the leader's position power is low. No conclusive results were available for situations in which the leader-member relations were poor and either the task was structured and the leader's position was weak, or the task was unstructured and the leader's position power was strong.

Nadler and Dickinson (1978) examined the relationship between task structure, work organization, communications structure and team performance. Both task structure and communications organization significantly influenced team achievement and quality. Task structure also affected consis-

Figure 1. Correlations between leadership, LPC scales, and group effectiveness plotted for each cell or octant of the situational favorableness dimension for studies of interacting groups conducted prior to 1963.



tency of operations. Work organization failed to show any effect upon performance except in terms of the degree to which team responses could be predicted from individual member responses.

The effects of the nature of the group task on leadership behaviour was explored by Richards and Cuffe (1972). Students were divided into groups of four and given a laboratory task which was designed so that the groups were either interacting[33] or counteracting[34]. Bales (1950) Interaction Process Analysis was used to classify behaviour patterns.

Leaders in interacting groups gave more suggestions, more orientation, asked for more suggestions, and in general emitted more behaviours than counteracting group leaders.

In the interacting groups, the behaviours of leaders that correlated with their effectiveness were: "shows solidarity", "gives suggestion", "gives opinion", "shows tension", and overall behaviour. For counteracting group leaders, those who gave more suggestions and showed less antagonism were rated as being more effective.

O'Brien and Owens (1969) studied another aspect of the effect of organizational structure on productivity. They varied the degree to which the task required members to collaborate coordinate their efforts. When the group task required coordination of effort, group productivity was significantly affected by both the average ability of the group and the ability of the dullest member. When the task required collaboration, the above relationships were not evident.

Differences in rated leadership effectiveness between a number of interacting groups (in an electronics firm) and coacting[35] groups (in a hospital) were explored by Hill (1969). His finding generally supported Fiedler's (1964) theory but did not reach the level of statistical significance.

In studying the effects of various job design characteristics on job involvement, job satisfaction and intrinsic motivation, Lawler and Hall (1970) used 291 scientists in 22 Research and Development laboratories as their subjects. The particular job factors they measured were: (a) the degree of control the individual had over what he did; (b) the degree to which the job perceived to be a relevant test of the person's ability, and (c) the degree of influence the individual perceived that he had in his department. Factor analysis of responses to their instrument showed that the job design factors were significantly related more to job satisfaction, and the degree of involvement in the job than they were to the intrinsic motivation of the individual.

We might conclude from the foregoing research literature that: the specificity of work goals; the structure of the task; the favourableness of leader-member relations; the leader's position power; the true path of discretion involved in decision-making relating to the task; and the degree of control, challenge and influence involved in the job, all relate to the leader hypothesis in the organization. The above factors might be considered to moderate what is perceived as effective leadership behaviour in a given situation.

Perhaps the above variables might be included in a cosmic organizational parameter, which could be called "climate". The effects of organizational "climate" on successful managerial behaviour have been researched by Fleishmann, Harris and Burtt (1955) and Engel (1970) among others.

Fleishmann, Harris and Burtt (1955), in one of the empirical Ohio State studies, evaluated a foreman training program. They found that as a result of the training program, participants increased their "consideration" scores. Reversion back to pre-training behaviour was evident after a few months, however, and the researchers concluded:

> "When what is taught in the school is at variance with what is practiced in the plant, the latter is generally the more powerful influence."[36]

Engel (1970) related the perceived autonomy of physicians with the degree of bureaucracy in their organizations and found a curvilinear relationship. She concluded that the organizational climate did significantly influence the autonomy physicians perceived themselves as having in pursuit of their occupations.

We might conclude from the research reported in this section that the nature of successful management will be determined by a number of factors relating to the organization in which the manager works.

Organizations which have different technologies or different task structures, or which have different sizes and have reached different stages of growth will require different managerial behaviours at different hierarchial levels and for different line/staff roles.

A review of the empirical studies in the field by Porter and Lawler (1965) concluded that seven organizational properties were significantly related to job attitudes[37] and behaviour[38]. The organizational variables considered were: organizational levels, line and staff hierarchies, span of control, size of subunits, size of total organization, shape (tall or flat) and shape (centralized or decentralized).

The complexity of the topic of managerial success is therefore reinforced, and the difficulty of prediction of appropriate traits and behaviours is emphasised.

The attitudes, needs and values of the work group

A second set of organizational variables which help determine successful leadership relate to the work group(s) of which the manager is a part. The attitudes of other people at higher and lower hierarchical levels to the manager's behaviour, the degree to which individual needs are met, and the values of the work group are all instrumental in determining what behaviour will be identified as successful. Additionally, the degree to which these factors within the job situation will affect the definition of successful behaviour.

Fleishman (1953) attempted to evaluate a human relations training program for foremen in a motor truck plant. His Leadership Opinion Questionnaire was completed pre- and post-training by the foremen while a further questionnaire on the desirable attributes of foremen was completed by the second-level supervisors and by workers.

A significant correlation was found between the "Consideration" and "Initiating Structure" scores of foremen and those of their supervisors. It was also found that the higher up people were in the plant hierarchy, the less "consideration" they felt the workers should receive. No significant differences between pre- and post-training scores was noticed.

Fleishman concluded that the nature of the preferred leadership style was more dependent on the background characteristics of the particular situation in terms of the expectations of others than on the background characteristics of the particular individual.

Graen, Dansereau and Minami (1972) were also concerned with subordinates' reactions to supervisory leadership behaviour. In a large international company, 600 supervisors at six different hierarchial levels were rated on: their leadership behaviour as perceived by their subordinates; their overall job satisfaction; their performance ratings; measures of the members' perceptions of various organizational aspects; and the influence structure of their units; and two measures of performance expectations developed by the authors.

The researchers found that although the overall job satisfaction was higher for the managers than it was for office staff, the managers attitude toward interpersonal relationships with their supervisors was more negative than the same attitude in their staff. The influence of the supervisor over the work unit was greater for office staff than it was for managers, who perceived a greater influence of subordinates over themselves

(the managers). "Consideration" scores on the Leader Behaviour Description Questionnaire were shown to be related reliably to performance. The authors conclude that the effects of leadership style may be most identified in terms of the perceptions of their subordinates.

The attitudes held by significant others toward the manager's leadership style may therefore have an effect on what is acknowledged as appropriate leadership behaviour.

Other group-based values which have been explored by researchers include the status the individual brings to the position, the personalities of the non-leaders in the group, and the group's performance history.

Klubeck and Bass (1954), for example, wanted to determine the interaction of leadership training with status. Leadership status was operationally defined by the degree to which the individual's behaviour resulted in the movement of a discussion group toward common goals, as rated by observers. A series of discussion groups in a girls' club provided the setting for the study. After one discussion period the highest and lowest ranking girls in groups of seven were given leadership training. A second set of discussions was held after the training period, and the girls rated again.

Girls receiving the leadership training increased their mean rating while the untrained girls actually decreased theirs. Those with initially high status increased their ratings while the low-status girls showed no significant increase. The authors conclude that only initially-high status girls could effectively

integrate and use the leadership training.

Personality determinants of followership was the subject of a study by Vroom (1970). In particular, his concern was with the relationship between personality traits of group members and their participation in democratic decision-making. Questionnaires to determine (1) the participants needs for independence and authoritarianism; (2) job rating; (3) attitude toward job and (4) perceived participation in decision making were administered to 108 supervisors on the bottom three levels of a large parcel-delivery company. The subjects were dryided into three groups on the basis of the above personality scales and correlations between participation and performance determined.

Vroom found that participation did have a positive effect on performance but was unable to specify at any level of significance the modification effects of various personality traits.

Erickson, Pugh and Gunderson (1972) developed a "role congruency" measure to determine the degree to which an individual was in step with his peers relative to duty time, pay grade, age and marital status. They found their measure to be predictive of reported life stress and job satisfaction.

An exploration by Reddy and Byrne (1972) into the effects of interpersonal compatability on problem-solving behaviour in middle-managers utilized Schutz's (1958) Fundamental Interpersonal Relationship Orientation-Behaviour (FIRO-B) in connection with the "Lego Man exercise". The researchers

found that groups that were more compatible on the interpersonal dimensions of control and affection completed the task more rapidly than more incompatible groups.

In a study on the effects of successful leadership, Bass (1961), hypothesized: (1) that successful leadership is related more to ability and esteem in effective groups than it is in ineffective groups; and (2) that discrepencies between group esteem and self-esteem are manifested in unsuccessful leadership. Fifty-one five-man problem-solving groups of ROTC cadets met in ten brief discussion sessions. After each discussion, group members were assessed on the basis of effectiveness, leadership and the time they each talked.

Bass found that: (1) a leader's success depends heavily on the ability of the group; (2) successful leaders in effective groups were held in higher esteem than those in ineffective groups; and (3) people with high self-esteem but rated low in group esteem were rejected when they attempted to take control of the group.

Farris and Lim (1969) found that past work group performance was a variable to be considered in explaining current leadership effectiveness. High past performance was found to induce greater leader supportiveness, interaction facilitation, goal emphasis, and work facilitation behaviors as well as member influence, group cohesiveness and satisfaction. The relationship was perceived to influence the current leadership effectiveness.

Lowin and Craig (1968) investigated the effect [illegible] levels of subordinate performance had on leader [illegible]

They found that high-performing confederates evoked high consideration, low initiating structure behaviours from leaders, while low-performing confederates evoked a low consideration high initiating structure pattern of behaviour.

Thus, the behavioural demands placed on a manager will vary with the position of those making the demands, and the attitudes, needs and values of those involved.

Where there is a lack of congruency between the demands placed upon the individual and his aspirations to act, a degree of stress will result. This stress will, in turn, provoke leadership behaviour, as shown by Korten (1962), Oaklander and Fleishman (1967), House (1968), Walton, Dutton and Cafferty (1969), Rossel (1970) and Lichtman (1970).

Korten (1962) investigated the situational conditions for the emergence of different leadership styles and developed a model showing how certain environmental influences and stress produced shifts between authoritarian and democratic styles of leadership.

Where group goals were highly structured and of much greater importance than individual goals, or where ambiguities obscured the perceived path to goal attainment, authoritarian leadership was sought. Where ambiguities did not produce stress, and where the attainment of individual goals was possible, democratic leadership was sought.

The relationship between leadership role perception and organizational stress was explored by Oaklander and Fleishman (1967) in three hospitals. 118 first-line supervisors completed

Fleishman's(1953b) Leadership Opinion Questionnaire, and a stress instrument.

High scores on the "Consideration" scale were found to be related to low intra-unit stress but not to intra-department stress. Relationships between units in the large hospital were more clearly defined than in the smaller, voluntary hospitals, where supervisory relationships were more informal. The authors concluded that effective leadership interactions may be a function of stresses due to organizational size and they suggest further research in that area.

In a review of research into leadership training in large industrial and governmental organizations, House (1968) attempted to show that social influence variables accounted for most dysfunctional consequences.

His studies revealed that where the organizational environment was not supportive of the prescribed concepts of human relations training, there could be increased role conflict perceived by employees and increased stress between the trainee and other members of the organization. This stress could lead to increased employee turnover and grievances, and to decreased job performance.

Leadership training could also have undesirable effects on group cohesiveness, supervisor-subordinate relationships, intergroup relationships and the formal authority system itself. These sociological consequences could, in turn, reduce organizational effectiveness.

The causes of interdepartmental conflict and lack of

cooperative relationships was the topic of a study Walton, Dutton and Cafferty (1969). Data was collected from over 300 managers in a large, dispersed utility company and then analysed. It was found that the major determinants of interdepartmental conflict were: (1) ambiguity in perceived departmental-jurisdictions, (2) physical obstacles and other related barriers to communication, and (3) perceived inequalities in work loads and rewards. Walton et al. suggest that interdepartmental conflict results largely from factors which originate outside the particular lateral relationship under consideration, and which may be antecedent to it.

Rowe (1967) examined leadership orientation at different hierarchial levels on the basis of the degree of labour intensity and commitment in organization. He found that as the degree of labour commitment increased managerial personnel became more concerned with task effectiveness and less variable performance ("instrumental" leadership). Among supervisory personnel, however, a labour commitment appeared to result in the elimination of dysfunctional interpersonal tension and a more "expressive" leadership orientation. With low commitment environments, the leadership orientation was reversed between hierarchial levels.

In situations in which the organizational survival was threatened, the instrumental leadership pressures from managers could conflict with the natural inclination of supervisors to the degree that it caused stress in the supervisors, which led to a loss of leadership effectiveness. Rowe saw the labour

of accelerating and dysfunctional pressure under these circumstances. He concluded that leadership orientation is a function of both hierarchial level and the degree of threat to organizational survival managers perceived in the environment.

The problem of the way in which emotional adjustment and organizational knowledge are distributed across hierarchial levels was tackled by Lichtman (1970). He used a series of instruments to measure the emotional adjustment (job satisfaction and internal conflict), organizational (operations) knowledge, achievement need and productivity rating of three hierarchial levels (manager, supervisor and worker) within the U.S. Inland Revenue service.

He found that the managers showed the lowest levels of job-related tension, and the highest levels of job satisfaction, internal control, organizational knowledge and performance rating of the three groups. Tension correlated negatively with both job satisfaction (-.18) and internal control (-.31), while satisfaction was positively related (.40) to internal control. Both productivity rating and need for achievement were positively related (.16 and .27 respectively) to organizational knowledge, in which staff personnel scored significantly higher than line managers.

We have seen from the research reported in this section, that the attitudes, needs and values of the work group influence the demands upon the manager and the stress placed upon him. The ways in which he handles these attitudes, needs and values, and in which he tackles the stress in the situation will help

determine his degree of success as a manager.

Social interaction

The way in which the manager uses the process of influence, and the type of influence he uses will help determine his leadership success. A number of researchers have investigated this area, including Etzioni (1959), Peabody (1962), Zaleznik (1963), Patchen (1965), Hill and French (1967), Student (1968) and Ivancevich and Donnelly (1970).

Etzioni (1959) compared the distribution of power in organizations with different goals. He was interested in the relative strength of "expert power" (e.g., staff specialists) to "line authority" in production organizations versus professional institutions (e.g., research establishments, schools, hospitals). He hypothesized that in the ultimate analysis, staff authority was subordinate to line authority (2) that organizations have only one ultimate position of authority that is final decision-maker (3) that persons occupying the ultimate position perform the function of system-integration and goal-direction, rather than do the expert - concerned primarily with means.

While these hypotheses were confirmed for the production organizations, they were unconfirmed for the professional institutions studied. It would therefore appear that the power of a managerial (line-staff) position depends on the nature of the organizational task.

In contrast to Etzioni, Peabody (1962) differentiated between four types of authority (those based on legitimacy and

position versus those based on technical competence and human relations skills) in an analysis of interviews with 76 members of three public service agencies.

He found that all four authority types were common to the three agencies (a welfare branch office; a municipal police department; and a suburban school), however, the relative importance of, and emphasis on, the types of authority varied among organizations. Welfare employees held the formal authority sources as important, while the police officers stressed human relations skills and teachers emphasized technical competence. Peabody also found that a lack of congruency between the exercise of functional authority and formal authority led to "one of the deepest tensions in modern organizations."

Patchen (1962) investigated the problem of authority from the standpoint of supervisory power and the relationship between the exercise of that power and group performance. Data collected by questionnaires from 700 people in 18 departments of a plastics factory revealed that three aspects of supervisory performance could be related to the performance norms of a work group: (1) the foreman's encouragement of work efficiency; (2) his "going in to bat" to obtain rewards for his men; and (3) his power to control rewards. It was found that the highest group norms resulted when the foreman had significant power in the control of rewards, and he exercised that power, and he consistently encouraged efficiency. Under these circumstances, high group cohesiveness was related to high group norms. Patchen concluded that the effects of close supervision depended

on the workers perception of the foreman as a rewarding figure and a 'team member' rather than a punitive outsider.

Hill and French (1967) examined another dimension of administrative power (access to sanctions) in relation to performance and satisfaction of college faculty. A questionnaire was mailed to professors of five state-supported, four-year colleges to measure the faculty perceptions of the power of departmental chairmen. Performance ratings and technical publications were used as output criteria. It was found that the greater the perceived administrative power of the chairman, the greater the level of satisfaction among faculty members and the more likely professors were to be productive in terms of the operational definitions used.

The effect of supervisory influence on work-group performance was studied by Student (1968). A questionnaire was distributed to 330 hourly-paid workers and 30 supervisors on the topic of influence ("referent", "expert", "reward", "coercive" and "legitimate" powers as well as "incremental influence". Company performance data used included: indirect costs, maintenance costs, supply costs, scrap costs, actual performance against schedule, quality, average earnings, number of excused and unexcused absences, accidents, turnover, and suggestions submitted. The results indicated that high "referent" power was associated with high turnover. Indirect costs, supply costs, work quality, and the number of suggestions submitted were all related to the degree of "referent" and "expert" power. No relationship was found between "incremental influence" and

either average earnings or performance against schedule.

Kipnis and Cosentino (1969) explored the use of corrective powers in industry. Both situational and personal factors (number of employees supervised, years of experience as a supervisor, and the nature of the problem presented by the subordinate) were found to influence the supervisor's choice of corrective powers. Industrial supervisors were found to apply more on persuasive powers than their military counterparts.

Goodstadt and Kipnis (1970) investigated situational influences on the use of leadership power in a laboratory situation. They found that the kind of problem the subordinate encountered and the number of subordinates supervised influenced the type and frequency of use of supervisory power. Problems of discipline evoked the use of coercive power, while ineptness evoked expert power. The larger the span of control, the less time supervisors spent on problem employees, and the fewer rewards given to satisfactory performance. The supervisors self-confidence also influence the exercise of power in that supervisors with little confidence in their leadership abilities relied on formally prescribed powers while those with more confidence used both formal and informal type of power.

A study on the distribution of power within Correctional Institutions which had different role-concepts in terms of their custodial remedial treatments of inmates was conducted by Zald (1962). He compared five U.S. Correctional Institutes and the power distributions within them as perceived by their staffs. He found that as organization complexity increased, and organi-

zation-community relations led to greater external commitments by the Superintendent, the chief executive had to share his power. The person(s) with whom the Superintendent shared his power was a function of the nature of the organizational goals. The balance of power among different groups within the institution was also a function of organizational goals.

Ivancevich and Donnelly (1970) attempted an empirical investigation into the relationship of Katz and Kahn's (1966) concept of incremental influence to certain performance measures and non-participation measures (absenteeism and turnover) for white-collar workers. The food products salesmen from 31 branches of a large U.S. firm rated their 31 managers on the basis of "Referent", "Expert", "Incremental" "Reward" "Legitimate" "Coercive" power using the Bachman, Smith and Slesinger (1966) instrument. Productivity performance measures (Market-potential ratio, number and size of orders, efficiency ratings, direct selling cost, and route density factor) were recorded for each branch, as were excused and unexcused absenteeism and staff turnover for a [illegible] week period.

Significant positive relationships were found between: "incremental influence" and four of the five productivity indices; "referent" power and three indices; "expert" power and two; "reward" power and one index. Likewise, negative relationships were found between excused absenteeism and "incremental", "referent" and "expert" powers and between unexcused absenteeism and "incremental" and "referent" powers. No significant relation between turnover and power base was found.

On the basis of these studies, one might expect the successful manager to utilize influence over rewards and sanctions, "referent" and "expert" power and "incremental influence". The literature seems to demonstrate, however, that relationship between these social influence processes and organizational performance is quite dependent upon the task of the organization.

General environmental factors

While it may appear trite to say, we might expect the patterns of leadership success to be dependent on the particular culture in which the organization exists. Any instrumental approach to the indication of managerial success should take into consideration the cultural-dependency of instruments and concepts of managerial success.

It should perhaps be noted here that the vast majority of the research reported in this presentation relates to U.S. rather than Canadian studies. The cultural similarity between the urban Canadian and his southern neighbour is generally evident but has been neither well-researched nor conceded by many Canadians.

The search for a Canadian identity continues with two effects relative to this study. In the first place the possible cultural-dependency of instruments used must be acknowledged: perhaps the findings of the number of researchers are not replicable within the Western Canadian context. Secondly, the pioneering characteristics of Western Canadians, including a heterogeneity of recent ethnic backgrounds and the attributes

which attract them to a growing country must also be considered. Both these elements might be expected to become evident in the results of this study.

The ethnic variable in managerial attitudes was explored by Richardson (1970), who compared British and American ship personnel and found a number of significant differences between them.

Likewise, studies by Hulin (1966) and Katzell, Barrett and Parker (1971) brought out the fact that the size and culture of the city in which an organization operates can significantly influence the satisfaction and performance of its employees.

The degree of threat to the organization in the environment was shown to effect participants' attitudes toward leadership by Mulder and Stellingwerff (1964) in a Dutch field study.

The degree of agreement with the Protestant work ethic by employees was also found to be related to employee satisfaction by Blood (1969).

A study by Archibald (1970) has also pointed out that organizations, or countries can hold stereotypic attitudes towards such phenomena as sex roles, and this stereotype can influence success as a manager.

A number of researchers have also considered the cross-cultural application of specific leadership instruments. Work in this field includes that by Fiedler (1962), Anderson (1966), Fleishman and Simmons (1970), and Parat (1970).

Fiedler (1962) found socio-religious homogeneity in the composition of groups to be a moderating variable on the relat-

ionship between Least Preferred Coworker score and group creativity.

Anderson (1969) tested the Leader Behaviour Description Questionnaire on intercultural groups and found that instrument to be culturally independent. Fleishman and Simmons (1970), however, did find cultural base to be a moderator variable on the relationship between "Consideration" and "Initiating Structure".

A number of these moderating variables have thus been shown to influence managerial success or the measurement of leadership properties. We might expect that the success of a manager would depend on: his nationality; the size of community in which he works; the degree of threat to the existence of his organization, as perceived by its members; the degree of his commitment to the Protestant Work ethic; his or her sex; and the socio-religious homogenity of his group. The research reviewed in this section does not allow to make predictive judgements on the nature or direction of these influences, but recognition of them as contributors to variance in managerial success must be granted.

Summary

This chapter started with the assumption that leadership was situationally-dependent, and a number of ways in which researchers have proven it to be so have been considered.

The task structure, size and stage of development of the organization makes different leadership behaviour necessary at different hierarchial levels and managerial roles.

The attitudes, needs and values of the work group must also be taken into account in [illegible] and stress placed upon the manager.

Likewise, the manager's propensity toward a particular power structure or his congruence with an [illegible] type of influence will determine his success within the organization. A number of culturally dependent [illegible] be considered.

CHAPTER VI

THE RESEARCH MODEL, SETTING AND METHODOLOGY

The General Research Model

The literature reviewed in the earlier chapters suggests that effective or successful leadership depends on a number of personal, behavioural and organizational factors.

Successful leadership has been shown to be related to a number of non-changeable personal characteristics, such as sex, age, educational level attained, recency of latest educational experience, tenure within the employing organization, and number of dependents.

While the above attributes are non-changeable, it must not be assumed that they do not influence other attributes or characteristics which may also relate to managerial success. Particular changeable personal characteristics which may be affected by the above demographic variables would include psychological needs profile, role perception and expectancy attitudes. Research already reviewed suggests that these latter characteristics are subject to change and may play a particularly significant role in the determination of behaviour and interpersonal relationships with the organization.

Somewhat intermediate between these two sets of personal characteristics are a number of features, such as authoritarianism, cognitive style, passivity, and creativity, whose propensities towards change seems somewhat limited. Nevertheless, these features have also been shown to influence the degree of success

attained by managers within formal organizations.

These three groups of attributes represent the intra-personal variables which are associated with the process of success in the management field.

The overt expression of these personal attributes is in terms of behaviour. In particular, the behaviours relevant to the study of managerial success may be classified as leadership and interpersonal relations. A number of authors have offered frameworks for the analysis of leadership behaviour, by way of leadership style. Such frameworks would include the autocratic-democratic continuum, "Consideration" and "Initiating Structure", and the Least Preferred Co-worker scale.

In supposing that individuals express their personal attributes through their behaviour, it [illegible] to acknowledge that behaviour has effects on personality. The individual may evaluate (consciously or otherwise) what he perceives [illegible] the results of his behaviour, and modify [illegible] attitudes [illegible] behaviour [illegible] accordingly. As a result of such evaluation, certain behaviour may be reinforced, [illegible] extinguished. Likewise, the individual's values and beliefs may [illegible].

Not only does the individual's behaviour influence [illegible] intra-personal composition, but the behaviour of others [illegible] influence him. Thus, the "followership" of a manager's [illegible] ordinates and the leadership of his [illegible] superiors [illegible] determine leadership style, beliefs and values.

Certain environmental characteristics [illegible] also [illegible] influencing the managerial behaviour which [illegible]

successful within the organization. The nature of the organizations goals, its task structure, its size and stage of development, must all be considered. More immediately, the attitudes, needs and values of the work group, and the general "climate" prevelant in the organization must be taken into account.

Although the organization and its culture may be perceived as providing the environment for successful management, it does (through the process of socialization and setting norms), to some degree, determine managerial behaviour, beliefs and values. While the relationship between the organization and the manager's behaviour and intra-personal attributes may be transactional, it must generally be conceded that the direction of major influence is from the organization to the individual, rather than vice versa.

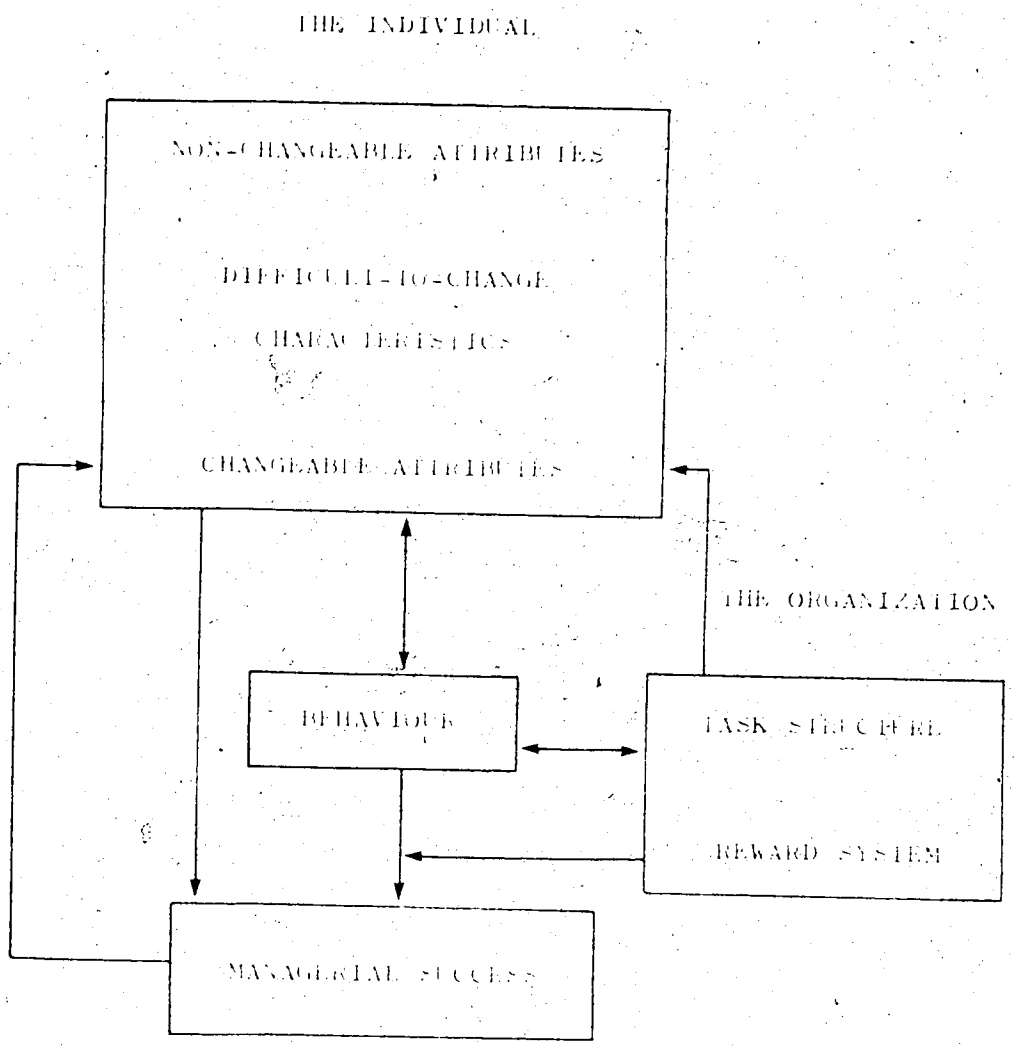
The organization's structure and reward systems play a particular role in the formulation of managerial success, and may be considered as moderating variables on the relationship between managerial behaviour and success. Through their operation, the individual's value and belief systems are again modified.

The general model suggested so far may be summarized diagramatically in figure 3.

Setting

The organizational setting for the research study was the Alberta Public Service, an organization employing over 20,000 people and involved in a wide spectrum of public sector activities.

Figure 2. The General Research Model.



The subjects for the study consisted of management personnel at various levels within this organization. Many of the subjects selected were attending in-house management training programs during the Fall of 1973. Training courses aimed at first-level supervisors, middle-managers, and senior-managers provided the vehicles for establishing contact with the subjects and providing an objective frame of reference for the completion of questionnaires. In addition to the group of trainees, a small random sample was selected from a listing of the management personnel within the organization.

It should be noted that around the time of the administration of questionnaires, the Alberta Government was introducing a new policy to effect a differential treatment of its management personnel. Compensation, position classification, manpower planning and performance appraisal systems were all under review at the time. The people involved in this study were likely to be aware of a changing emphasis within the personnel function, although precise definitions and directions of the change would be largely unknown.

Hypothesis Construction

Success Indicators

A number of authors already reviewed have suggested that success in management may be measured in several different ways. The indicators of success they have used included: hierarchial position (Patton, 1960, and Steele and Ward, 1971), salary level (Dodd, Wollowick and McNamara, 1970, Miner, 1971, and Gutteridge

1971), rate of increase of salary (Grant, Katkovsky, and Bray, 1967, and Miner, 1971), rate of hierarchical advancement (Pallett and Hoyt, 1967), financial responsibilities (Wellbrock and McNamara, 1965, and Sormunen, and Arndt, 1971), and performance rating (Miner, 1965, and Friedlander and Greenberg, 1971).

Within the context of the exploratory study, subjects were asked to report on the following indicators of managerial success. The abbreviation used in data analysis are also given:

LEVELUP[30] - the number of hierarchical levels between his job and the organization's Chief Executive Officer (the Deputy Minister).

LEVELDN - the number of hierarchical levels in the organization beneath him.

SALARY - his current annual salary.

MULTINCR - the number of multiple increments[31] he had received over the last five years.

PROMOTES - the number of promotions he had received in the last ten years.

BUDGET - the size of the financial budget he controlled.[32]

TOTSTAFF - the number of personnel who reported to him, either directly or through subordinates.[33]

DIRSUBS - the number of direct subordinates he had.

FREQCONT - the frequency of his dealings with his Deputy Minister.[34]

PERFRATE - the last annual performance appraisal rating he had received in relation to his supervisory abilities.[35]

LEVELTRG - the level of the training program he had last attended.[36]

From the two measures of hierarchical position, an index CHIERARCH was calculated, representing the percentage of the

way up the hierarchy of the individual's position.

On the basis of the literature reviewed in Chapter II and briefly summarised above, it may be hypothesised:

HYPOTHESIS I:

> that the various success indicators selected for this study would not be predicted equally by the same instruments, and would relate to the various independent variables in different ways.

Demographic variables

The general hypothesis with respect to demographic variables may be stated:

HYPOTHESIS II:

> that a number of non-changeable personal characteristics, or demographic variables, would affect the degree of managerial success achieved by an individual.

Of the non-changeable personal attributes (demographic variables) discussed earlier, a number have already been shown to be related to managerial success. These variables include: age (Patton, 1960, Lefkowitz, 1967, Cleland and Neman, 1969, Laurent, 1970, and Vroom and Pahl, 1971), number of dependents (Janofsky, Shepps and O'Neill, 1969), educational level attained (Sykes, 1962, Ghiselli, 1968, Grubel, 1969, Rhinehard, 1969, and Laurent, 1970), recency of last educational experience (Gattridge, 1973, and Steele and Ward, 1974), and length of employment in the company (Maier, Hoffmann and Read, 1963, McLennan, 1969, Miner, 1970, and Laurent, 1970).

Within the context of the present study and on the basis of the literature reviewed in Chapter III, it was decided to examine the effects of a number of demographic variables. The

particular demographic data[57] requested from subjects, and identified by the abbreviations used in data manipulation, included:

AGE - his age

SEX - sex[58]

MARITAL - his marital status[59]

DEPENDS - the number of dependents he had

YRSED - the number of years of full-time education he had received

LASTFTED - the year of his last full-time educational experience

LASTED - the year of his last educational experience, whether full-time or part-time

MOSINTRG - the number of months since he was last exposed to a formal management training program

TENURE - the number of years he had been employed by the organization

PRESPOSN - the number of years he had been in the position he presently occupied

YRSMGMT - the number of years of managerial or supervisory experience.

In accordance with the works noted above, it would be expected that managerial success would have a positive relationship to AGE, YRSED and TENURE.

LASTFTED would also be anticipated to be related to success, but, since recency of education normally [illegible] the [illegible] of employment within the organization, to fully examine the effect of LASTFTED, allowance must be made for TENURE. Further, [illegible] education (LASTED) and recency of management training (MOSINTRG) may be expected to have relationships in the [illegible] direction [illegible].

LASTEED for at a smaller magnitude. Also, since all learning is not necessarily formal, YRSMGMT could be expected to have some relationship with the success indicators in the same directions as LASTEED.

In Chapter III fundamental personality characteristics were classified as subject to limited and difficult change, including authoritarianism, dominance, activity and inner-outer-directedness. With respect to these variables, it might be hypothesized:

HYPOTHESIS III:

> that certain fundamental personality traits or orientations would have effects on the degree of managerial success achieved by an individual.

These variables may, of course, be modified by the non-changeable or demographic variables discussed earlier. For example, as people grow older their attitudes may be considered to have become shaped and therefore they may be expected to be more rigid or authoritarian in their views. Likewise, individuals who have exposed themselves more recently to the educational process may be expected to have adopted a more open or fair-minded outlook on a number of topics, and therefore to be less authoritarian. The physiological phenomena of the aging process itself, and the effect of the gratification of certain basic needs (such as for a home, education for the children, etc.) may reflect themselves in a depreciation of activity with age. Likewise, one might expect more active individuals to involve themselves in a number of activities outside of their work situations, including education, so some relationship might be

expected in that field.

Studies reported earlier by McCurdy and Eber (195[illegible]) and Carron (196[illegible]) have already indicated that authoritarianism is generally associated with the ineffective use of human resources.

Authoritarianism may be measured by the shortened version [illegible] of Adorno, Frenkel-Brunswick, Levinson and Sanford's [illegible] California F Scale. This instrument [illegible] each with a seven-point Likert scale [illegible] authoritarianism score.

We might therefore expect managerial success to be negatively associated with scores on the California F Scale.

If the assumption is made that authoritarian [illegible] have a propensity toward [illegible] interpersonal relationships, one might expect [illegible] an attitude of acceptivity or [illegible] part of [illegible]. Such an approach might be interpreted [illegible] personal relations. A negative relation [illegible] and managerial success might then [illegible].

Porter and Ghiselli (19[illegible]) [illegible] have al[illegible] indicated that more successful man[illegible] active, rather than passive per[illegible]. A [illegible] relationship might therefore be expected between [illegible] of personality and managerial success.

Both "dominance" and "activity" can be measured on the Thurstone (19[illegible]) Temperament Schedule. Scores on these scales might therefore be examined for relationships to the success variable.

Studies by Porter and Henry (1964a), Oshry and Harrison (1966) and Mitchell and Porter (1967) have suggested that more successful managers display more inner-directed traits than their less successful colleagues. This was particularly the case for line-managers in comparison to staff-managers.

Inner-directedness may be measured by the degree to which the individual is not "sociable" (on the Thurstone Temperament Schedule) or is not "interaction-oriented" (on Bass' Orientation Inventory). Negative relationships might thus be expected between scores on these two scales and the success criteria.

The third set of intra-personal characteristics shown by the literature to have a relationship to managerial success includes such variables as need gratification, role perceptions and the perceptions of the instrumentality of performance to salient outcomes. It may therefore be hypothesized:

HYPOTHESIS IV:

> that a number of changeable personal characteristics will have effects on managerial success.

Among the many potentially viable variables within this category would be: interpersonal relations orientation, attitudes toward supervision and subordinates, role perceptions which differentiate between the work of a supervisor and that of his work group, and the level of job satisfaction of the individual.

These characteristics may of course be related to the other intra-personal attributes already considered. One might expect, for example, that a positive attitude toward management may be found among people who had spent a great deal of time in

the management profession. One may presume that a negative attitude toward top management would activate the individual to change his organization of his profession. Likewise, cognitively simple individuals may be expected to perceive their role in a simple and differentiated manner with respect to other employees.

Studies by [illegible] (196[illegible]), Miles (196[illegible]), Harrison (196[illegible]), Hobert and Dunnette (1967), Gunman (1967), Dunnett (19[illegible]), [illegible] (1971) and Bouchard (19[illegible]) have shown that effective relationships is associated with an orientation toward interpersonal relationships. A much larger number of studies in the Human Relations field have shown that a person-orientated approach to employees by supervisors leads to more effective organizational performance. Studies by Carroll and Nash (197[illegible]), Schneider and Bartlett (19[illegible]), Hou[illegible], Tilley and [illegible] (19[illegible]), [illegible] (197[illegible]) reviewed earlier would be included in such work.

Instruments which purport to measure such an orientation include those by Gekoski and Schwartz (19[illegible]) and Dore (19[illegible]).

Gekoski and Schwartz's instrument (the "Supervisory Index") contains scales measuring the subject's attitude toward basic human relations practices, including techniques for handling problems, [illegible], [illegible], apathy, arguments and low morale (HR), and a general total scale, measuring the extent to which the subject holds a person-orientated "people are basically good" philosophy of management (T).

Dore's instrument has a scale (E) measuring the degree to which a manager is orientated toward subordinates as people.

rather than as a means of production, delegating authority and responsibility where possible, and creating an atmosphere of teamwork and cooperation.

One might expect scores on both these scales to be positively correlated with the success indicators.

Attitudes toward supervisors and top management were shown to be significant correlates of the relationship between managerial performance and success by Mahoney, Jerdee and Korman (1960), Rosen (1961), Sykes (1962), Pallett and Hoyt (1967), Bird (1969), Carroll and Nash (1970), Schneider and Bartlett (1970) and Thompson (1971). Since top management in an organization would normally have more control over sanctions than lower levels of management, one might expect the attitudes toward top management to be positively correlated with success. The M scale on the Gekoski and Schwartz instrument attempts to measure this variable.

A supervisory role perception which differentiates the manager's job from those of his subordinates was implied in the studies by Porter (1961) and Zapoto and Wolfe (1966). This dimension was also implicit in the studies on "laissez-faire" leadership by Lewin, Lippitt and White (1939), Lammenbang and Masserik (1970), Pelz (1951), Page and McGinnis (1970), Anderson and Fiedler (1964), and Latona (1972), and the studies on "initiating structure" by Halpin (1957), Hemphill (1957), Maier and Maier (1957), Bass and Lawshe (1970) and Hunt and Lichtman (1969).

Within the context of the present study, the above dimension

those on the autocratic-democratic dimension, "Consideration" and "Initiating Structure", and Fiedler's "Least Preferred Co-worker" scale.

The general hypothesis associated with the examination of these variables is:

HYPOTHESIS V:

> that managerial success would be associated with certain identifyable behavioural patterns, as reported through several instruments.

Since these variables reflect the intra-personal attributes, they may be expected to be quite dependent upon them. For example, authoritarian personalities may be expected to be autocratic in their leadership style. Individuals who have pursued higher education may be assumed to be achievement-oriented and therefore less collaborative than others. Relationships of this nature could be confirmed through additional research.

The Ohio State studies discussed in Chapter IV, have suggested that both "Consideration" and "Initiating Structure" are positively related to leadership effectiveness. The studies by Halpin (1957), Hemphill (1955), and Cummins (1971) have emphasized the necessity for both leader behaviours for effective performance. One might expect, therefore, that scores on the Leadership Opinion Questionnaire scales would positively relate to management success, and that this relationship would be emphasized when both scales were considered together.

Blake and Mouton (1964) in their "Managerial Grid" model, developed dimensions of "concern for production" and "concern

for people". The study by Smith and Hofour (1960), reported earlier, suggests that high scores on both these dimensions are necessary for effective leadership. Thomas (1977) in his analysis of the management of conflict also suggests that a high concern for the constructive use of interpersonal conflict, with benefits accruing to both parties is necessary for effective management. On the Thomas Behavioural Description Questionnaire, this high mutual concern is referred to as "collaboration". One might therefore expect the individual's score on this scale to be positively related to his success.

Personality dominance has already been alluded to as being negatively related to managerial success. Within the specific context of interpersonal relationships, Schutz's (1958) Fundamental Interpersonal Relations Orientation-Behaviour instrument has a scale to measure the individual's need for dominance in relationships with other people. One might expect this scale to have a similar relationship to the success indicators as proposed for the "dominance" scale.

Organizational variables.

The third set of variables in the research model were those associated with the subject's environment and involved such factors as his perceptions of the organization's climate, its degree of structure, and the influence of other people on his work. Since one might presume that the individual expresses some of his own values in selecting the organization in which

he works, and that his values, beliefs and attitudes are reflected in reported perceptions, one might expect the reported perceptions of the individual's environment to reflect some of the intra-personal and behavioural variables already discussed. For example, one might associate a perception of a lack of trust or support in the organization's climate with an individual who, because of his short experience with the particular organization or his differential role perception, has not developed trusting, supportive relationships. Likewise, the achievement-orientated individual with substantial educational experience might be expected to perceive his organization as being uncollaborative.

In general, however, it may be hypothesized:

HYPOTHESIS VI:

> that the successful manager will perceive and report his organizational environment in a different manner than will the unsuccessful manager.

Most of the literature reviewed relating to the influence of organizational or environmental variables on managerial success has attempted to identify specific conditions under which a particular leadership style or personality type would be effective. Where leadership style is not considered a constant in the expression of managerial effectiveness, one must turn to empirical studies revolving around prescriptions for an ideal organizational climate. The assumption must often be made that the atmosphere within an organization which maximizes a particular objective function, such as employee satisfaction or goal attainment, is conducive to, and associated with, managerial success.

Such an assumption is made, for example, by Likert (1967) who suggests that managers operating within a "System IV" climate are more effective or successful. A "System IV" climate would be one with participative leadership, teamwork, open communications, group decision-making, and self-control by employees. Research by Vroom (19[illegible]), Fiedler (19[illegible]), O'Brien and Owens (1969), and Lawler and Hall (1970) has generally shown these characteristics to be associated with effective organizations.

One might therefore expect to find a positive relationship between managerial success and a System IV organizational climate, as reported on the Likert (1967) scale.

A number of authors in the human relations field, including Argyris (19[illegible]) and [illegible] (19[illegible]), have suggested that effective organizations are characterized by a willingness to deal openly with conflict and to allow managers [illegible]. Research by Korten (19[illegible]), Mulder [illegible] (19[illegible]), [illegible] (1967), Walton, Dutton and [illegible] (19[illegible]), and Korman (19[illegible]) supports this assumption.

Scales attempting to measure the organizational support for the open handling of conflict [illegible] include those developed by Litwin and Stringer (1968). One might predict that scores on these scales would be [illegible] in a positive direction with success in management.

The degree of task structure within the organization has been researched by Korten (1962), Fiedler (19[illegible]), Naylor and Dickinson (1969), and Bevan and Locke (1970). The findings of these authors generally indicate that a high task structure i

associated with lower levels of management, and dissatisfied employees. These findings are replicated in the studies by Oaklander and Fleishman (1964) and Engel (1970) who related informality of operation and the absence of bureaucratic constraints to employee satisfaction and productivity. If the general atmosphere of a lack of task structure or bureaucracy, an openness in communications and an informality of relationship may be designated as a "flexible" organization, it might be suggested that successful management is associated with a "flexible" organization.

Within the present study, scales purporting to measure the degree of "flexibility" in the organization include those by Likert (1967), with questions on the concentration of review and control functions, Litwin and Stringer (1968), with scales on structure and responsibility, and Friedlander (1966), with a "bureaucratic" scale indicating the perceived degree of rules and "red tape". In addition to these scales, the author's questionnaire asked subjects to indicate on a 5-point scale the degree of structure within their Departments, their own organizational units, and those of their immediate superior. On all of these instruments one might expect managerial success to be negatively related to the perceived degree of structure or bureaucracy in the organization.

Lastly, one might suggest that the effectiveness of an organization is defined in part by the perceptions of its leaders. The organization's executives are responsible for the direction the organization takes in its operations. It is appropriate,

therefore, that a sense of their influence should permeate the organization's climate and operations. They are also the ultimate decision-makers with regard to organizational sanctions and rewards. It might therefore be anticipated that there would be a positive relationship between the degree to which the organization's executives influence the work unit and managerial success. A question was included on the author's questionnaire for this purpose.

Summary

Within the current chapter, a General Research Model was presented that related managerial success to certain intrapersonal attributes (demographic variables, changeable characteristics and attributes which could only be changed with much difficulty), interpersonal and leadership behaviours, and organizational properties.

The setting for the study was described, and general hypotheses relating to the variables in the model were developed.

It was predicted that managerial success would be indicated by a number of variables including: hierarchial position, salary level, rate of increase of salary, rate of hierarchial advancement, financial responsibilities, and performance rating.

Expectations were expressed regarding the relationships between certain demographic variables (age, educational experience, length of employment within the organization, recency of education, and length of management experience), certain fundamental personality dimensions (authoritarianism, dominance, activity and inner-directedness), certain changeable attributes ("human relations" orientation, role differentiation and job satisfaction) and the criterion variable.

Behavioural patterns predicted as being related to managerial success included the Ohio State scales, "collaboration" in the handling of conflict, and the expressed need for control.

A number of organizational dimensions including System IV, structure, conflict-openness, risk-taking and executive influence were also discussed in terms of their relationship to managerial

success.

The variables to be examined in this study[50], and the instruments to be used to operationally define them are summarized in Table 4.

Table 2 : List of variables to be measured in the study and the instruments by which they would be measured.

Success indicators:	–	Basic Questionnaire
LEVELSUP		
LEVELSDN		
HIERARCH		
SALARY		
MULTINCR		
PROMOTES		
BUDGET		
LOGSTAFF		
DIRSUBS		
FREQCONT		
PERFRATE		
LEVELTRG		
Demographic data:	–	Basic Questionnaire
AGE		
SEX		
MARITAL		
DEPENDTS		
YRSED		
LASTEDUC		
LASTED		
MOSINTRG		
TENURE		
PRESPOSN		
YRSMGMT		
Fundamental personality characteristics:		
Authoritarianism	–	California F scale
Dominance	–	Thurstone Temperament Schedule (Dominance scale)
Activity	–	Thurstone Temperament Schedule (Active scale)

Inner-directedness	–	Thurstone Temperament Schedule (Sociable scale)
	–	Basic Orientation Inventory (Interaction scale)
Changeable personal attributes:		
Person-orientation	–	Gekoski and Swartz's Supervisory Index (Human Relations scale)
	–	Dore's Leadership questionnaire (Employee-orientation scale)
Attitudes toward top management	–	Gekoski and Swartz's Supervisory Index (Management scale)
Differential role perception	–	Dore's leadership questionnaire (Differential scale)
Job satisfaction	–	Not integrated into instruments
Behavioural characteristics:		
Consideration	–	Fleishman's Leader Opinion questionnaire (Consideration scale)
Initiation Structure	–	Fleishman's Leader Opinion questionnaire (Initiating Structure scale)
Collaboration	–	Hemphill's Leader Description questionnaire (Collaboration scale)
Interpersonal dominance	–	Schutz's FIRO-B (Expressed Control scale)
Organizational characteristics:		
System IV	–	Likert's organizational climate survey (Total)
Open handling of conflict	–	Litwin and Stringer's organizational climate survey (Conflict scale)
Risk-taking	–	Litwin and Stringer's organizational climate survey (Risk scale)
Task structure	–	Likert's organizational climate survey (Communication, Leadership and Control scales)
	–	Litwin and Stringer's organizational Survey (Structure and Responsibility scales)

	-	Friedlander's Climate Survey (Bureaucracy scale)
	-	Supplementary Questionnaire
Executive influence	-	Supplementary Questionnaire

CHAPTER VII

RESULTS AND FINDINGS

Questionnaire Distribution

As outlined in Chapter VI, six different types of variables were involved in the study - demographic, fundamental personality characteristics, changeable personal attributes, behavioral variables, organizational characteristics, and success indicators. Within each of these variable groups, several dimensions were to be explored using different instruments for the various dimensions.

The questionnaire distribution scheme allowed for each subject to receive the same questionnaire with regard to the demographic and success variables, and one questionnaire on each of the other types of variables. Subjects therefore received a maximum of six questionnaires.

The various combination of instruments available were listed in a Graeco-Roman matrix to insure that each combination contained a unique arrangement of one questionnaire from each of the variable types.

A total sample size of one hundred was selected on the basis of reasonable subsample sizes and administrative convenience. Subjects were numbered from 1 to 100 and randomly assigned to a particular combination of instruments.

Since it was anticipated that there would be a maximum of four different instruments in any variable class (e.g. in the scales measuring organizational variables, the four instruments used were those by Likert, Litwin and Stringer, and Friedlander

and the supplementary questionnaire), only one quarter of the sample was assigned to any particular instrument. Hence the sample size for any instrument was a maximum of twenty-five. These twenty-five combinations were randomised such that only six subjects would have two instruments in common.

Since only sixty-five of the hundred sets of instruments were returned, the sub-sample size was further reduced, and it was impossible to relate responses to scales of one class of variables (e.g. behavioural) with those to another (e.g. organisational). Responses on each instrument could be compared with the demographic and "type" variables since all subjects received the same basic questionnaire but not with variables in other groups (e.g. behavioural variables with organizational variables).

The small sub-sample size for any particular instrument also reduced the number of degrees of freedom in any statistical manipulation of the sub-sample score.

Demographic Characteristics of the Sample

The demographic characteristics of the sample are shown in table 7 in terms of the means and standard deviations of the demographic variables and the correlation between them.

The picture of the average subject which emerges from these statistics shows him to be 42 years old, with a dependent, having about a year's college education before leaving school in 1955. He had last taken some form of part-time education in 1965, and had been exposed to management training a year ago. He has been in the organization for twelve years, and in his present position for four, and he has about eleven years of management or supervisory experience.

Table . Demographic characteristics of the research sample.

	AGE	DEPENDTS	YRSED	LASTFIED	LASTED	MOSTPAID	TENURE	FREEDOM	HRSWORK
MODERATOR VARIABLES									
AGE	1.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.01*
DEPENDTS	[illegible]	1.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.27*
YRSED	[illegible]	[illegible]	1.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.08
LASTFIED	[illegible]	[illegible]	[illegible]	1.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-.38*
LASTED	[illegible]	[illegible]	[illegible]	[illegible]	1.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MOSTPAID	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.[illegible]	[illegible]	[illegible]	.21
TENURE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
FREEDOM	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.[illegible]	.42*
HRSWORK	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.00
SAMPLE STATISTICS									
MEAN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	11.[illegible]	[illegible]	[illegible]	11.02
S.D.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	7.79

[illegible] level.

Nothing in this description of the average subject suggests him to be very different from the average manager in the population from which he was drawn, except in terms of his recency of management training - a variable of particular interest in the study.

An examination of the correlations between the various demographic characteristics reveals that there is a group of variables which are highly mutually correlated with each other (r = .4 at p = .05). This group includes: AGE, EASTEED, EASTED, HEMBE, PRESPOSN and YRSMGMT. This grouping suggests that the older the manager is, the further away from educational experience he is, the longer he has been in both the organization and his present position, and the more managerial experience he has. These relationships may be expected on the basis of common experience, but they are worth noting here since later in the study the relationships between the demographic variables and other types of variables will be examined. Any relationship between one of these demographic variables and another of a different type which proves significant (e.g. between YRSMGMT and SALARY) might lead one to believe that there may also be a significant relationship between another demographic variable highly correlated with the first one (e.g. PRESPOSN with YRSMGMT) and the other variable (i.e. PRESPOSN with SALARY). High correlations between these variables suggest a degree of substitution in other relationships.

In addition to the cluster of relationships mentioned above, the correlation table shows significant connections

between AGE and three others - MOSINTRG, DEPENDTS and YRSMGMT, and between YRSED and LASTFTED. The first of these relationship sets suggests that older managers were exposed to management training earlier than younger managers, and that people who become managers earlier in their lives now have more dependents. The second relationship set suggests that the more recent graduates have a higher level of education than their predecessors.

Success characteristics of the sample

The means and standard deviations of the various success indicators used in the study, and the correlations between these indicators are shown in Table 4.

These statistics show the average manager in the sample to be around the middle of his organizational hierarchy. He earns about £17,000 p.a., has received one promotion in the last two years and controls a budget of about £10,000 and a staff of fifteen (of which four report to him directly). He is in contact with his Deputy Minister three or four times a year, had a "good" rating for his supervisory abilities at his last performance appraisal, and the last management training programme he attended was at the middle-management level.

Again, there is nothing in the description of the average manager in the sample to suggest that he differs significantly from the average member of the population from which he was drawn.

Examination of the correlations between the various success

Table 4. Success Indicators - correlations

N = 65	LEVELSUP	LEVELSDN	HIERARCH	SALARY	MULTINCR	PROMOTES	BUDGET	LOGSTAFF	DIRSUBS	FREQCONT	PERFRATE	LEVELTRG
LEVELSUP	1.00	-.54*	-.84*	-.52*	-.05	-.17	-.43*	-.17	.12	-.59*	-.01	-.25*
LEVELSDN	-.54*	1.00	.82*	.42*	-.09	.10	.39*	.28*	.09	.51*	-.01	.22
HIERARCH	-.84*	.82*	1.00	.56*	.02	.21	.49*	.25*	-.02	.65*	.05	.25*
SALARY	-.52*	.42*	.56*	1.00	-.05	.13	.58*	.44*	-.09	.52*	.13	.34*
MULTINCR	-.05	-.09	.02	-.05	1.00	.15	-.03	-.07	-.10	-.03	-.13	-.06
PROMOTES	-.17	.10	.21	.13	.15	1.00	.29*	.22	.26*	.10	.08	.13
BUDGET	-.43*	.39*	.49*	.58*	-.03	.29*	1.00	.37*	.13	.31*	.13	.07
LOGSTAFF	-.17	.28*	.25*	.44*	-.07	.22	.37*	1.00	.40*	.30*	.15	-.10
DIRSUBS	.12	.09	-.02	-.09	-.10	.26*	.13	.40*	1.00	-.06	.08	-.13
FREQCONT	-.59*	.51*	.65*	.52*	-.03	.10	.31*	.30*	-.06	1.00	-.07	.26*
PERFRATE	-.01	-.01	.05	.13	-.13	.08	.13	.15	.08	-.07	1.00	.02
LEVELTRG	-.25*	.22	.25*	.34*	-.06	.13	.07	-.10	-.13	.26*	.02	1.00
SAMPLE STATISTICS												
MEAN	3.48	4.74	56.62	14.958	.51	.92	5.08	1.14	4.29	1.88	2.83	3.05
S.D.	1.86	2.40	22.09	4.812	1.21	1.31	1.10	.58	2.79	2.24	2.79	4.51

* Significant at the .05 level

indicators suggests that two clusters of the variables exist. The first cluster includes LEVELSUP, LEVELSDN, HIERARCH, SALARY, BUDGET and FREQCONT and intimates that positions high in the hierarchy are well paid, control large budgets and involve frequent contact with the Deputy Minister. The second cluster includes PROMOTES, BUDGET, LOGSTAFF and DIRSUBS. The inference from this cluster is that above-average vertical mobility is associated with having a large budget and a big staff.

The variables MLTINCR, PERFRATE and LEVELTRG appear to be largely independent, although MLTINCR does display some relationship with the first cluster of success variables.

Factor Analysis of the Success Criteria

The success indicators were factor analysed using programs by Nie, Bent and Daly (1970) and Procket (1971). Principal Component factor analysis with Varimax rotation yields factor loadings as shown in table 7. Quartimax and Equimax rotations reveal substantially the same loadings. The four factors shown account for 67% of the variance in the success indicators included in the study, with the first factor accounting for over half that variance.

Looking at the loadings of the success indicators on the four factors, shows that the first factor is heavily weighted in terms of HIERARCH, LEVELSUP (negatively), LEVELSDN, FREQCONT, SALARY and BUDGET - in other words, the first cluster of success indicators identified from the correlation matrix. Since all these variables relate to the level of the manager's position, the factor has been named "POSITION SUCCESS". A high score on

Table 5. Factor loadings of success indicators.

N = 65	Factor 1	Factor 2	Factor 3	Factor 4
LEVELSUP	-.84	.12	-.04	-.1[illegible]
LEVELSDN	.[illegible]0	.15	-.[illegible]7	-.10
HIERARCH	.[illegible]	.02	.01	.0[illegible]
SALARY	.7[illegible]	.03	.38	.[illegible]
MULTLNCF	-.05	-.16	-.[illegible]	.[illegible]
PROMOTES	.1[illegible]	-.20	.[illegible]	.71
BUDGET	.77	.[illegible]	.20	.18
LOGSTAFF	.35	.71	.16	.00
DIRSUBS	-.08	.85	.05	.08
FREQCONT	.79	-.02	-.06	-.0[illegible]
PERFRATE	-.08	.13	.78	-.08
LEVELTRG	.33	-.38	.46	.11

this factor would indicate an individual who occupied a high-level position within the organization.

The second factor is loaded heaviest with those indicators identified as the second cluster from the correlation matrix, with the addition of LEVELIRG. The two variables LOGSTAFF and DIRSUBS relate to the number of subordinates the manager supervises, directly or indirectly. LEVELIRG is weighed negatively on factor 2, and therefore implies lower forms of management training as being more associated with this factor. Since the lower levels of management training deal with supervisory skills rather than managerial concepts, this factor may be identified as "SUPERVISORY SUCCESS". One would expect individuals scoring high on this factor to be involved in the direct supervision of a large number of people.

PERFRATE, LEVELIRG and SALARY are the major components of the third factor. All these indicators reflect various Personnel programs within the organization - performance appraisal, management development and salary administration. The factor is therefore labelled "PERSONNEL SUCCESS". Individuals scoring high on this factor could be said to have gained the recognition of the organization's Personnel system.

The only two major loadings on the last factor are MULTINCR and PROMOTES, both of which indicate the individual's rate of advancement - one in terms of salary, the other in terms of position. The factor may thus be classified as "GROWTH SUCCESS" to indicate the speed with which the individual advances within the organization. A person with a high score on this factor

could be said to be advancing rapidly.

These four factors may be interpreted as suggesting that "managerial success", as measured by the various criteria used in this study and based upon the literature, is not a single and uniform concept. The phrase may refer to success in position, in the number of staff supervised, in terms of recognition by the organization's Personnel system, or in terms of the rate of advancement within the organization. Studies, such as many of those reviewed earlier, which take a single criterion of success (e.g. salary or position) and examine the relationships between that criterion and other variables are investigating only part of the meaning of success. Managerial success, as it is being defined in this study consists of occupying a high-level position, controlling a large staff, being recognised by the organizational Personnel system, and advancing rapidly within the organization. All four components are needed for the successful manager.

Hypothesis I suggested that relationships existed between managerial success and a number of intra-personal, behavioural and organizational variables, as measured by a series of instruments. Since "success" has now been defined in terms of four factors, one might expect that the four factors would be predicted in different ways by the different instruments. To test the hypothesis, it therefore becomes necessary to examine the relationships between the independent variables and the four success factors. In order to make this study comparable to those reviewed in the literature, relationships between the variables

and the various success indicators will also be examined.

Relationships between managerial success and the demographic variables.

The second hypothesis suggested that a number of non-changeable, or demographic, characteristics would affect the degree of managerial success an individual achieves. In particular, it was expected that age, educational level, length of employment within the organization, recency of educational and training exposures, and the length of management experience would all be positively related to managerial success. Table 6 shows the correlations between the various demographic characteristics in the study and the success variables.

All the significant correlations between the demographic variables and the success criteria are in the anticipated direction, with the exception of some of the educational and training variables. It may be remembered that there were a number of other demographic variables, such as AGE, IENGE, PRESPOSN and YRSMGMT to which the educational and training variables were correlated. When the effect of these latter variables was partialled out of the relationships between LASTFIC, LASTED and MOSINTRG and the success variables, significant positive relationships were indicated. Thus, the general expectations with regard to the demographic variables were confirmed.

Step-wise multiple regression[53] was used to search for relationships (significant at the .05 level) between the various success indicators and factors and the demographic variables under study. Regression equations are listed in Appendix B-1.

Table 6. Correlations between the demographic variables and the various success variables

N = 65	AGE	DEPENDTS	YRSED	LASTFIED	LASTED	MOSINTRG	TENURE	PRESPOSN	YRSMGMT
SUCCESS INDICATORS									
LEVELSUP	-.23	-.13	-.32*	.08	-.02	.04	-.17	-.12	-.30*
LEVELSDN	-.06	.14	.24	.10	.09	.11	.21	.12	.15
HIERARCH	.15	.17	.31*	-.05	.04	.03	.24	.15	.29*
SALARY	.50*	.18	.45*	-.18	-.09	.16	.31*	.52*	.49*
MULTINCR	.01	.09	.04	.10	.03	-.10	.04	-.04	-.03
PROMOTES	.14	.06	-.01	-.11	-.08	-.04	.39*	-.08	.16
BUDGET	.20	.20	.25*	-.09	-.02	.09	.27*	.16	.36*
LOGSTAFF	.41*	.17	.11	-.20	-.31*	.30*	.37*	.38*	.40*
DIRSUBS	-.10	.15	.18	.26*	.20	.10	.09	-.01	.09
FREQCONT	.25*	-.02	.31*	-.18	-.04	.14	.17	.16	.47*
PERFRATE	.16	.13	-.13	.17*	-.30*	.00	.36*	.37*	.04
LEVELTRG	.08	.19	.42*	.06	.03	-.34*	.01	-.05	.05
SUCCESS FACTORS									
1. POSITION	.19	.13	.48*	-.04	.05	.10	.16	.18	.38*
2. SUPERVISORY	.06	.12	-.01	.01	-.05	.36*	.27*	.18	.23
3. PERSONNEL	.31*	.16	.13	-.20*	-.26*	-.16	.36*	.32*	.17
4. GROWTH	.08	.13	.08	.03	.01	-.17	.21	-.14	.06

* Significant at the .05 level or better

and are represented diagramatically in Figure 5.

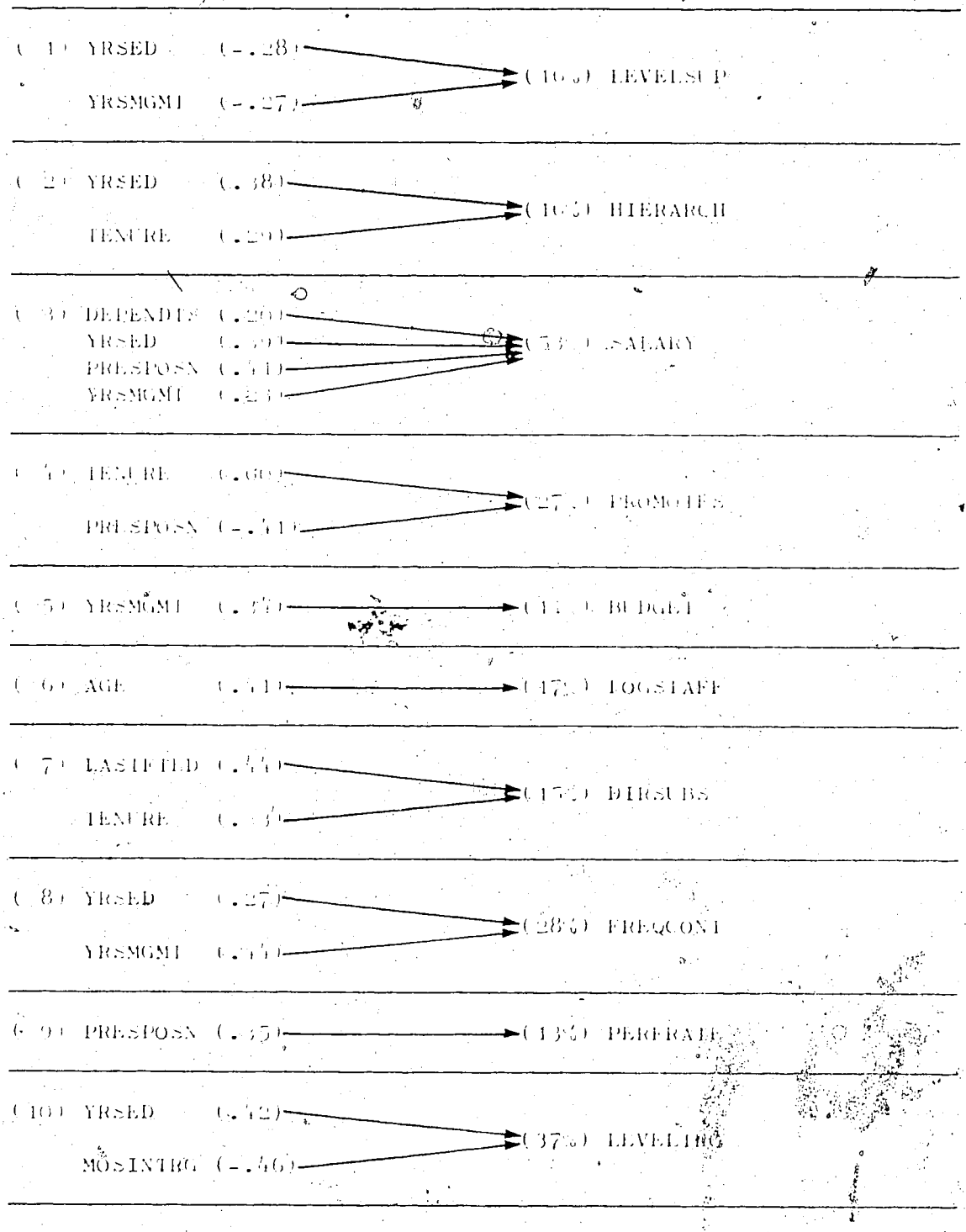
In each case, the percentage of the variance of the success variable accounted for by the demographic variables is shown in parenthesis before the name of the variable. The demographic variables which show up as significant in the regression are indicated to the left of the success variable, with their regression weights shown in parenthesis after them. Thus, for example, 16% of the variance in LEVELSUP can be accounted for by the variance in YRSED and YRSMGMT. The variables contribute about equally to the variance in LEVELSUP, and the direction of the relationship is negative (i.e. the greater the individual's YRSED and YRSMGMT, the less his LEVELSUP).

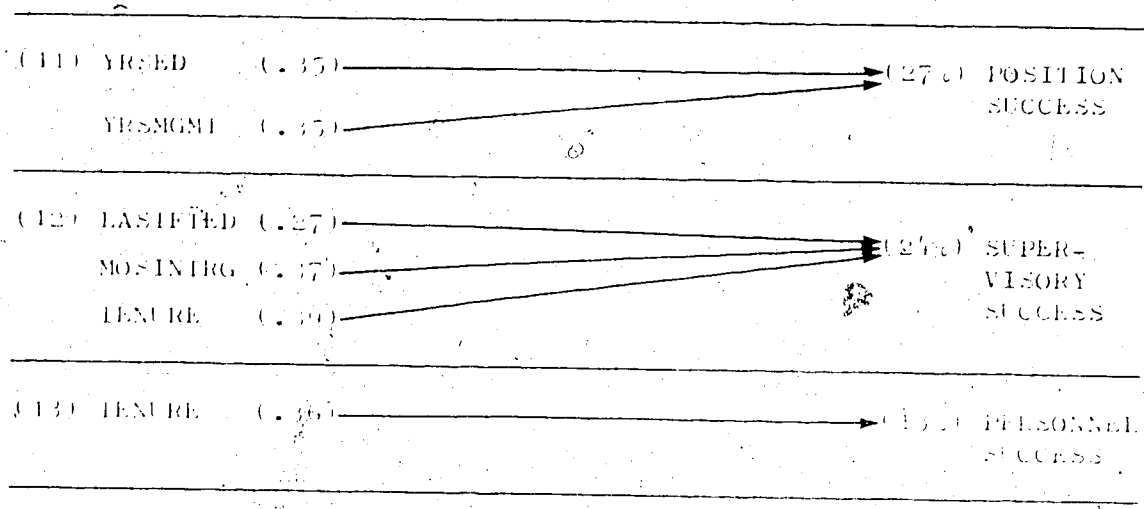
These regressions show that some of the variance in each of the success indicators and factors with the exceptions of LEVELSDN, MGTINCR and GROWTH-SUCCESS could be accounted for by one or more of the demographic variables. The only demographic variable which was not used to account for any of the variance was TASTED.

The amount of the variance accounted for by the demographic variables alone ranged from 0% for LEVELSDN, MGTINCR and GROWTH-SUCCESS to 27% for SATARY.

Although the mean of the amounts of variance in the success variables accounted for by the demographic variables is not a highly creditable statistic, it may be worthy of note for comparison purposes that, on average, the demographic variables accounted for 18.6% of the variance in the success variables.

Figure 3. Regression of the success variables on the demographic variables.




(11) YRSED (.35)
YRSMGMT (.45)
(27a) POSITION SUCCESS
(12) LASTFIED (.27)
MOSINTRG (.37)
TENURE (.30)
(27b) SUPERVISORY SUCCESS
(13) TENURE (.66)
(27c) PERSONNEL SUCCESS

Relationships between managerial success and the fundamental personality characteristics.

Hypothesis III suggested that certain fundamental personality characteristics, as measured on a series of standard instruments, would effect the degree of managerial success achieved by an individual. Particular personality characteristics referred to included authoritarianism, dominance, activity and inner-directedness. It was anticipated that authoritarianism and dominance would be negatively related to success, while activity and inner-directedness would have positive relationships to the success criteria. Mean and standard deviation of the scales measuring these personality variables, and the correlations between scores on the personality scales and the demographic and success variables are shown in Table 7.

It will be noted from the correlation table that a number of significant correlations exist between the personality variables and the demographic variables. Regression of the personality variables on the demographic variables confirms a number of these relationships, as shown in Appendix B-2 and Figure 4.

Authoritarianism, as indicated by the score on the California F scale, had a very small but significant proportion of its variance accounted for by the recency of management training.

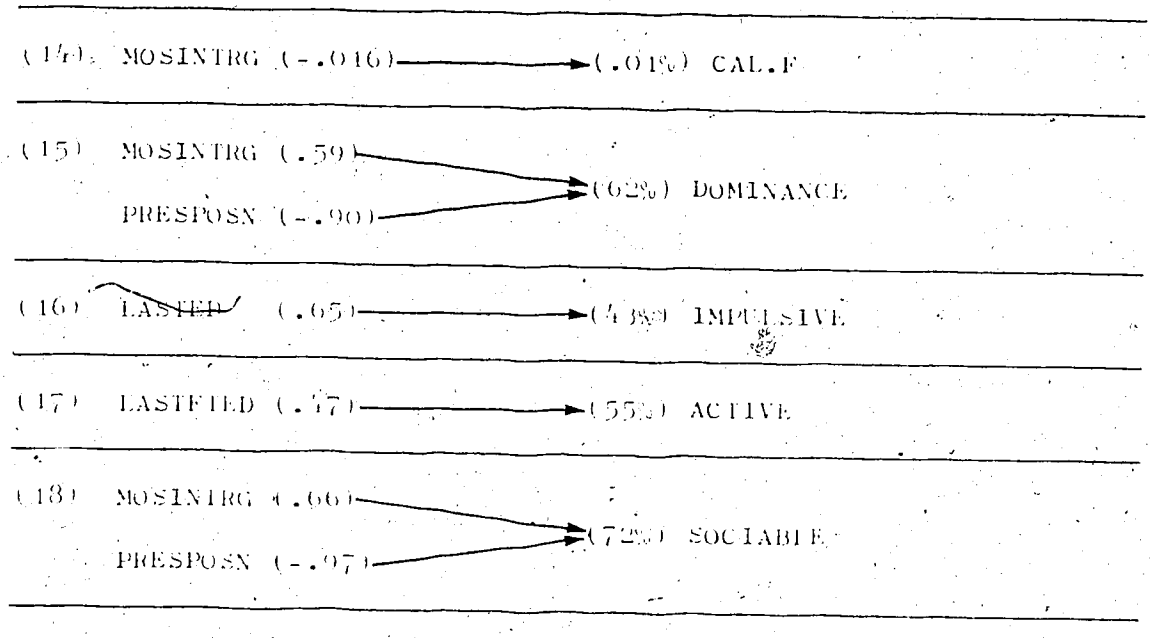
Over half the variance in DOMINANCE and SOCIABLE scores could be explained by the length of time since the individual had been exposed to management training and the length of time

Table 7. Correlations between the fundamental personality characteristics and the various demographic and success variables.

	Authoritarianism	Dominance	Activity	Inner-directiveness (Sociable)	Inner-directiveness (Interaction-non-oriented)
DEMOGRAPHIC VARIABLES					
AGE	[illegible]	.11	[illegible]	-.16	-.05
DEPENDENTS	.1[illegible]	.10	.17	.02	.0[illegible]
YRSED	-.31	.17	.31	.1[illegible]	-.30
LASFIED	-.50*	-.02	[illegible]	.2[illegible]	-.06
LASTED	-.37	[illegible]	[illegible]	.1[illegible]	[illegible]
MOSINTRG	-.01	.1[illegible]	[illegible]	.17	[illegible]
TENURE	.31	[illegible]	-.38	-.17	-.1[illegible]
PRESPOSN	.16	-.66*	[illegible]	[illegible]	[illegible]
YRSMGMT	.23	-.11	-.01*	[illegible]	-.02
SUCCESS INDICATORS					
LEVELSUP	-.06	[illegible]	[illegible]	.5[illegible]*	.02
LEVELSDN	.09	-.71*	.1[illegible]	[illegible]	[illegible]
HIERARCH	.06	[illegible]	[illegible]	[illegible]	[illegible]
SALARY	[illegible]	[illegible]	-.17	-.38	[illegible]
SALINCR	[illegible]	[illegible]	[illegible]	[illegible]	.1[illegible]
PROMOTES	-.07	-.20	[illegible]	[illegible]	[illegible]
BUDGET	.1[illegible]	-.1[illegible]	[illegible]	[illegible]	-.16
TOGSTAFF	.38*	-.1[illegible]	[illegible]	[illegible]	-.1[illegible]
DIRSUBS	[illegible]	.07	.1[illegible]	[illegible]	[illegible]
FREQCONT	[illegible]	-.66*	[illegible]	[illegible]	.1[illegible]
PERFRATE	.20	[illegible]	[illegible]	[illegible]	.1[illegible]
LEVELTRG	[illegible]	[illegible]	[illegible]	[illegible]	-.1[illegible]
SUCCESS FACTORS					
1. POSITION	.16	-.6[illegible]*	[illegible]	-.56*	-.1[illegible]
2. STAFF	-.0[illegible]	-.08	.1[illegible]	.1[illegible]	[illegible]
3. PERSONNEL	.3[illegible]	-.11	[illegible]	-.1[illegible]	-.1[illegible]
4. GROWTH	-.37	-.2[illegible]	.08	-.01	-.02
SAMPLE STATISTICS					
MEAN	21.92	9.67	11.17	[illegible]	[illegible]
S.D.	5.45	3.60	[illegible]	[illegible].78	10.2[illegible]
N	13	12	12	12	12

* Significant at the .05 level

Figure 4. Regression of the fundamental personality variables on the demographic variables.



he had been in his present position. It appears that the further the individual is away from training and the shorter time he has been in his present job, the more dominant and sociable he is (both characteristics being expected to relate negatively to success).

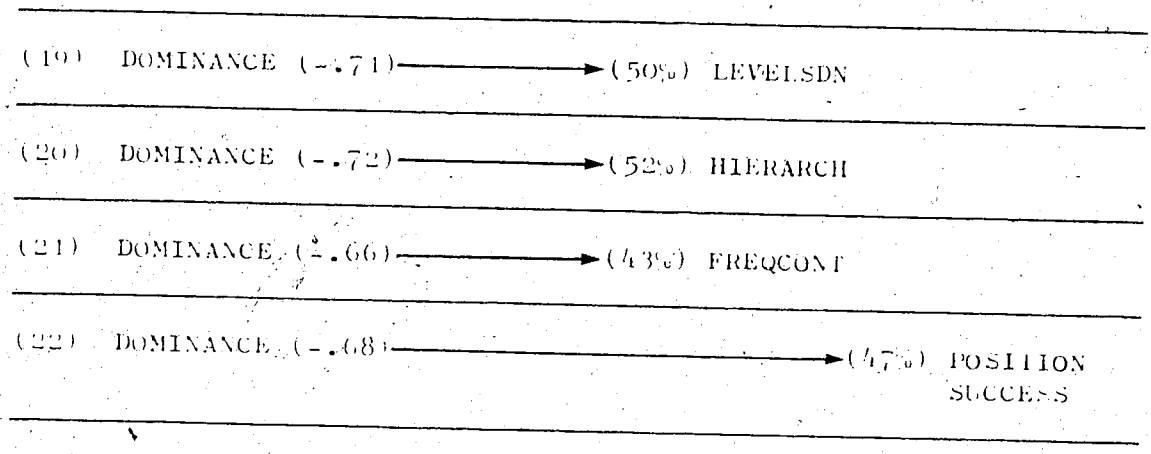
Likewise, recency of education can be used to explain a good portion of the variance in impulsiveness, while over half the variance in activity can be accounted for by the date of the individual's last full-time education.

When the various success variables were regressed on the fundamental personality characteristics, results were as shown in Appendix B-3 and Figure 5.

Regression of the success variables on CAU.F, ACTIVE, SOCIABLE and INTER-ORI scales revealed no significant relationships. DOMINANCE, however, was negatively related to LEVELSDN, HIERARCH, FREQCONT and POSITION SUCCESS, accounting for about half the variance in each case. These relationships are notable for two reasons - first, they are as anticipated earlier, and second, that the two demographic variables accounting for over half the variance in DOMINANCE (namely, MOSINTRO and PRESPOSN) were not involved in the earlier regressions of these success variables on the demographic variables. It might thus be confirmed that the more dominant the individual the less successful he is.

Inclusion of the demographic variables into the regressions of success on the fundamental personality characteristics gave a number of significant relationships as shown in Appendix B-4.

Figure 5. Regression of the success variables on the fundamental personality characteristics.



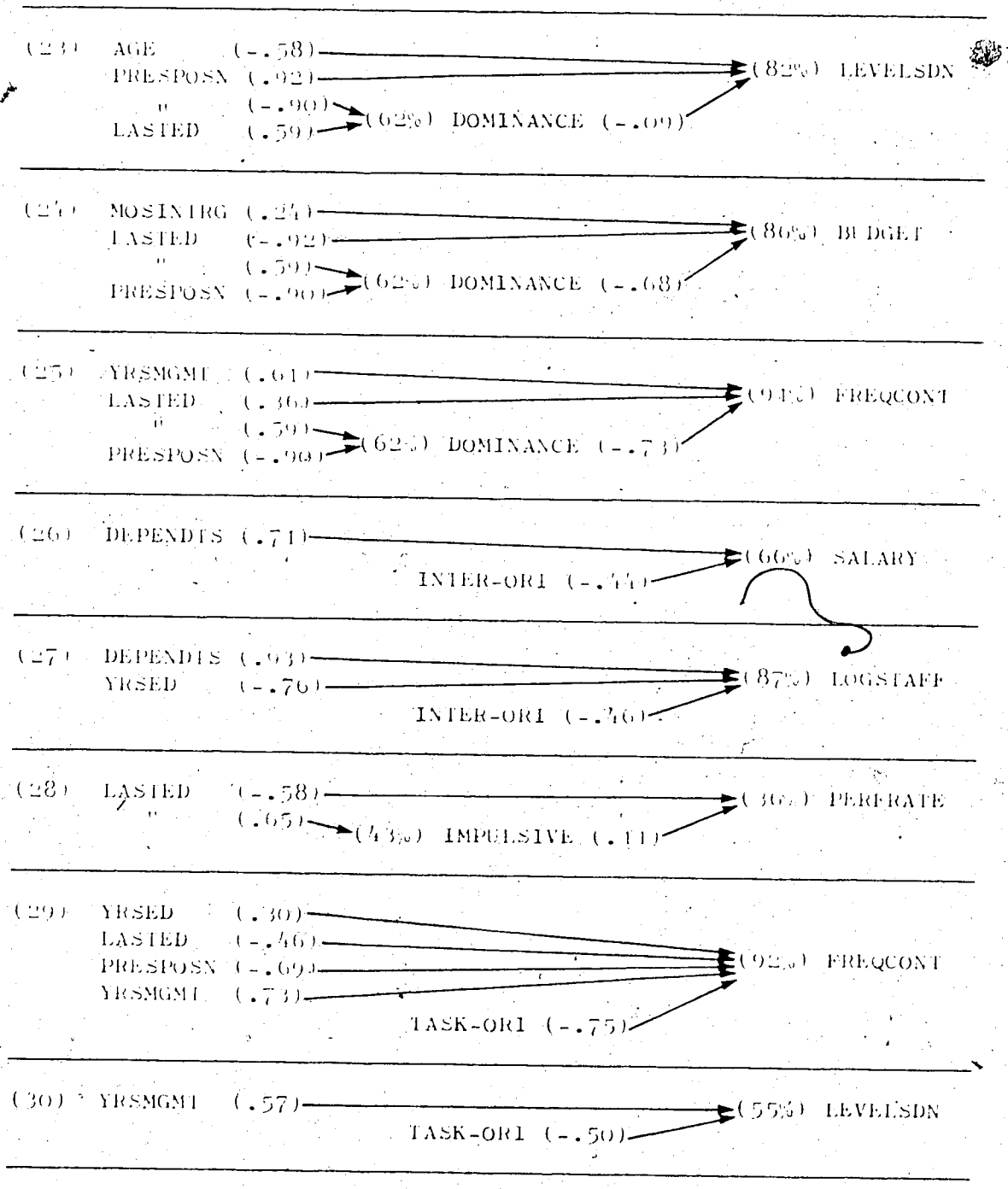
and Figure 6. The regressions of the fundamental personality characteristics on the demographic variables have been included in Figure 7 to show the way in which certain demographic variables have a multiple effect on the prediction of the success variables.

It can be seen from these regressions that between 82% and 91% of the variance of LEVELSDN, BUDGET and FREQCONT can be accounted for by a combination of DOMINANCE and the demographic variables. In each case, DOMINANCE is negatively associated with the success criterion, as predicted. It should be noted that the PRESPOSN contribution to the variance of LEVELSDN, and the LASTED contribution to the variance of BUDGET are reinforced by their contributions to DOMINANCE. In the case of FREQCONT, however, the LASTED contribution to the variance is depreciated by its contribution to DOMINANCE.

In all three cases, the dominant individual is less successful. In terms of LEVELSDN, the younger person with more experience in his present job and a less dominant personality has more hierarchial levels beneath him. The less dominant person who has been out of training for some time, but has been recently exposed to education is likely to have a large budget. Thirdly, the less dominant individual with considerable management experience and recent educational exposure is likely to have more contact with his Deputy Minister.

The INTER-ORI measure of outer-directedness is negatively related to two success criteria. The more inner-directed the individual and the more dependents he has, the higher his salary. Likewise, the inner-directed person with more dependents and less

Figure 6. Regression of the success variables on the fundamental personality characteristics and the demographic variables.



education is likely to have a large staff. Thus inner-directedness is positively associated with managerial success.

A number of other significant relationships between fundamental personality characteristics and success were discovered, but not predicted. EASIED was found to relate (with IMPULSIVE) to PERFRATE, although the proportion of the variance in PERFRATE it accounted for was somewhat discounted by its relationship to IMPULSIVE. TASK-ORI was found to be negatively related to both FREQCONT and LEVELSDN. In the first case, the individual with more education and management experience, more recent education and new in his position, if not task-orientated, had frequent contact with his Deputy Minister. In the second case, the individual with more managerial experience and less task-orientation had more hierarchial levels beneath him in the organization.

On the whole, while the fundamental personality characteristics by themselves explained an average of 12% of the variance in the success variables, in combination with the demographic variables, they raised the average amount of variance in the success variables which could be accounted for from 18.0% to 30.0% - an increase of 20.4%. In other words, another fifth of the variance success variables could be accounted for when the fundamental personality characteristics of the subjects were taken into account in conjunction with the demographic variables. Hypothesis III must therefore be accepted.

Relationships between managerial success and the changeable personal characteristics

Hypothesis IV focused on changeable characteristics of the individual and their relationship to managerial success. Particular expectations were expressed with regard to Gekoski and Schwartz's scales on Human Relations and Top-Management Orientations, Doré's scales on Employee-orientation and Differentiation, and the supplementary questionnaire scale on job satisfaction. It was proposed that all these scales would be positively related to managerial success. Table 8 shows the means and standard deviations of these scales and correlations between them and the demographic and success variables.

The correlation table shows significant correlations between HR and TENURE, and between SATIS and PRESPOSN (negatively). When the changeable personal characteristics are regressed on the demographic variables, these relationships are confirmed, as shown in Appendix B-5 and Figure 7.

The regressions show that the more management experience the individual has, the more "human relations" orientation he has. Also, the older the individual and the less time he has been in his present position, the more satisfied he reports himself to be with his job.

Regressing the success variables on the changeable personal characteristics yields the regression equations of Appendix B-6, represented in Figure 8.

Some proportion of MULTINCR, DIRSUBS, GROWTH SUCCESS and PERFRATE may be accounted for by the changeable personal charac-

Table 8. Correlations between the changeable personal characteristics and the various demographic and success variables

	HUMAN RELATIONS ORIENTATION	EMPLOYEE ORIENTATION	MANAGEMENT ORIENTATION	DIFFERENTIATION	JOB SATISFACTION
DEMOGRAPHIC VARIABLES					
AGE	[illegible]	-.24	.26	.22	.17
DEPENDTS	[illegible]	-.34	.25	-.33	.07
YRSED	-.50	.44	.07	-.30	.28
LASTED	-.36	.10	.11	-.24	-.10
LASTED	-.06	-.08	.01	.04	.12
MOSINTRG	-.20	-.38	.33	.22	.24
TENURE	.58*	.20	.02	.17	-.24
PRESPOSN	.28	.03	-.09	.23	-.07*
YRSMGMT	.30	-.35	.44	.35	.18
SUCCESS INDICATORS					
LEVELSUP	-.12	.07	-.20	.41	-.08
LEVELSDN	-.21	-.15	.00	.18	.13
HIERARCH	.04	-.03	.04	-.11	.12
SALARY	-.12	.31	-.17	.04	.19
MULTINCR	.17	.70*	.34	-.39	-.33
PROMOTES	.03	.14	-.03	.26	.05
BUDGET	-.13	.30	.24	.15	.18
LOGSTAFF	-.01	-.57*	.01	.28	.04
DIRSUBS	.05	-.26	-.34	.22	-.04
FREQCONT	-.12	.18	.11	-.29	.37
PERFRATE	.21	-.09	-.29	-.03	.13
LEVELTRG	-.51*	.28	.36	-.36	.38
SUCCESS FACTORS					
1. POSITION	-.11	.04	.22	-.18	.23
2. SUPERVISORY	.13	-.38	-.37	.48	.06
3. PERSONNEL	.18	.18	.09	-.05	.36
4. GROWTH	.11	.48*	.32	-.05	-.18
SAMPLE STATISTICS					
MEAN	6.33	4.92	4.17	4.23	7.07
S.D.	1.83	1.75	2.08	1.74	1.39
N	12	13	12	13	15

* Significant at the .05 level

Figure 7. Regression of the changeable personal characteristics on the demographic variables.

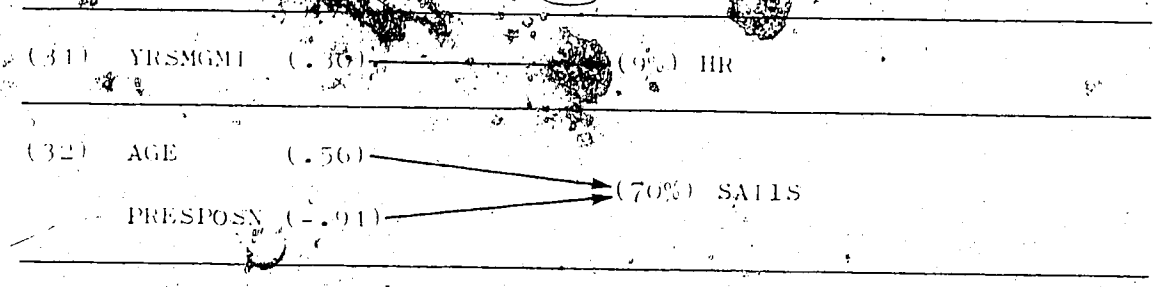
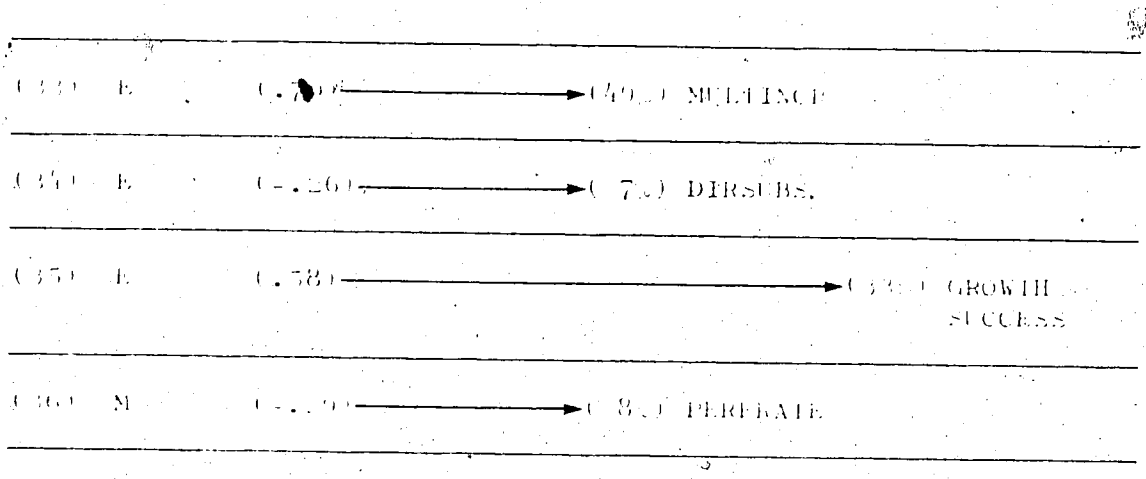


Figure 8. Regression of the success variables on the changeable personal characteristics.



teristics. However, the average amount of variance accounted for by these characteristics is only 6%, and in the case of DIRSUBS the relationship is in the direction opposed to that predicted.

When the changeable personal characteristics are combined with the demographic variables for regression of the success variables, the regression equations of Appendix B-7, represented in Figure 9, are produced. Older managers with a high employee-orientation have high salaries. A greater time since training and a "human relations" orientation indicates some position success.

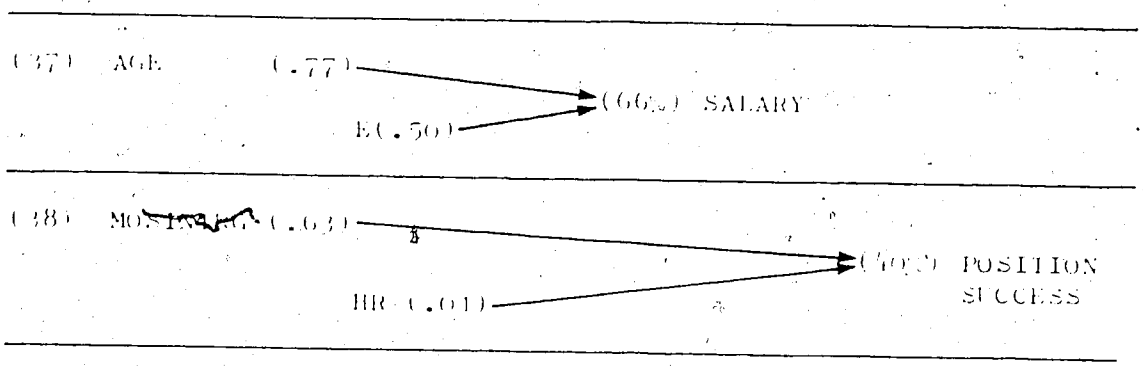
No significant relationships were produced at the .05 level of significance between the Differentiation scale or the job satisfaction scale and the success criteria.

The mean increase in the amount of variance predicted by the inclusion of the changeable personal characteristics into the regression of the success variables on the demographic variables is only 1.6%. Thus, on the whole, it must be acknowledged that while hypothesis IV must be accepted because changeable personal characteristics are significantly related to success, the amount these variables contribute to the variance in managerial success is negligible.

Relationships between managerial success and the behavioural variables

The general hypothesis with respect to the behavioural variables is that managerial success would be associated with

Figure 9. Regression of the success variables on the changeable personal attributes and the demographic variables.



certain behavioural patterns, identifyable by a series of instruments. The particular instrumental behaviours referred to included "Consideration", "Initiating Structure", "Collaboration" and "Expressed control". Means and standard deviations of the scores on these scales together with the correlations between the scale scores and the demographic and success criteria are recorded in table 9.

A number of significant correlations between the behavioural scales and the demographic variables are indicated in the correlation table. These relationships were confirmed by the regression of the behavioural variables on the demographic variables, as shown in Figure 10 and Appendix B-8.

These regressions indicate that the more "Considerate" individuals have more dependents; that the longer ago the individual was exposed to training, the more he initiates structure; that the more recent his last full-time education, the less collaborative his conflict-handling style is likely to be; that the more recent his education and the longer he has been in his present position, the more likely he is to express the need to be controlled; and that the more management experience he has, the less affection he shows in his interpersonal relationships.

It was expected that "Consideration", "Initiating Structure", and "Collaboration" would be positively associated with managerial success, while "Expressed Control" would be negatively related to the criteria. Appendix B-9 and Figure 11 show the regressions of the success variables on the behavioural scales.

Table 9. Correlations between the behavioural scales and the various demographic and success variables.

	CONSIDERATION	INITIATING STRUCTURE	COLLABORATION	EXPRESSED CONTROL
DEMOGRAPHIC VARIABLES				
AGE	-.11	.18	.2[illegible]	-.29
DEPENDTS	.81*	-.15	-.13	.15
YRSED	.33	-.71*	-.11	.29
LASTED	.[illegible]	-.11	-.53*	.61*
LASTED	.18	.13	-.07	.27
MOSINTRG	-.[illegible]	.6[illegible]*	-.08	.2[illegible]
TENURE	-.16	.1[illegible]	.[illegible]1	.[illegible]
PRESPOSN	-.[illegible]7	.36	.01	.[illegible]5
YRSMGMT	.1[illegible]	.15	.[illegible]	.16
SUCCESS INDICATORS				
LEVELSUP	-.[illegible]	.78*	.26	.05
LEVELSDN	.2[illegible]	-.17	-.32	.[illegible]6*
HIERARCH	.[illegible]	-.[illegible]7	-.[illegible]	.18
SALARY	.[illegible]	-.31	-.18	.68*
MELTINCR	-.[illegible]	-.0[illegible]	.1[illegible]	-.57
PROMOTES	-.13	.28	.1[illegible]	-.15
BUDGET	.09	-.0[illegible]	.[illegible]2	.[illegible]*
LOGSTAFF	.1[illegible]	.5[illegible]	.16	-.28
DIRSUBS	.[illegible]	.2[illegible]	-.1[illegible]	.[illegible]1
FREQCONT	-.[illegible]	-.5[illegible]*	-.[illegible]	.0[illegible]
PERFRATE	-.17	.71*	.56*	-.[illegible]
LEVELTRG	.[illegible]1	-.[illegible]	-.27	-.0[illegible]
SUCCESS FACTORS				
1. POSITION	.46	-.63*	-.[illegible]*	.[illegible]
2. SUPERVISORY	.01	.5[illegible]*	.0[illegible]	.[illegible]
3. PERSONNEL	-.09	.31	.18	.09
4. GROWTH	-.13	.0[illegible]	-.0[illegible]	-.[illegible]
SAMPLE STATISTICS				
MEAN	54.75	51.67	8.31	3.1[illegible]
S.D.	5.36	7.20	1.88	2.21
N	12	12	17	1[illegible]

* Significant at the .05 level

Figure 10. Regression of the behavioural variables on the demographic variables.

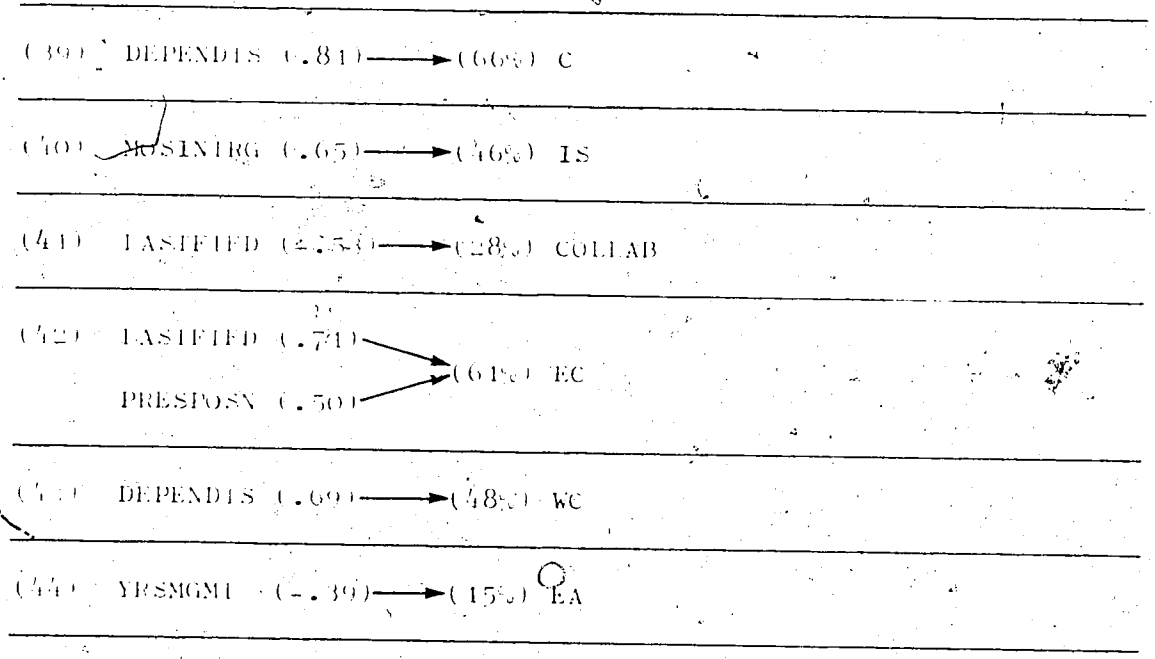
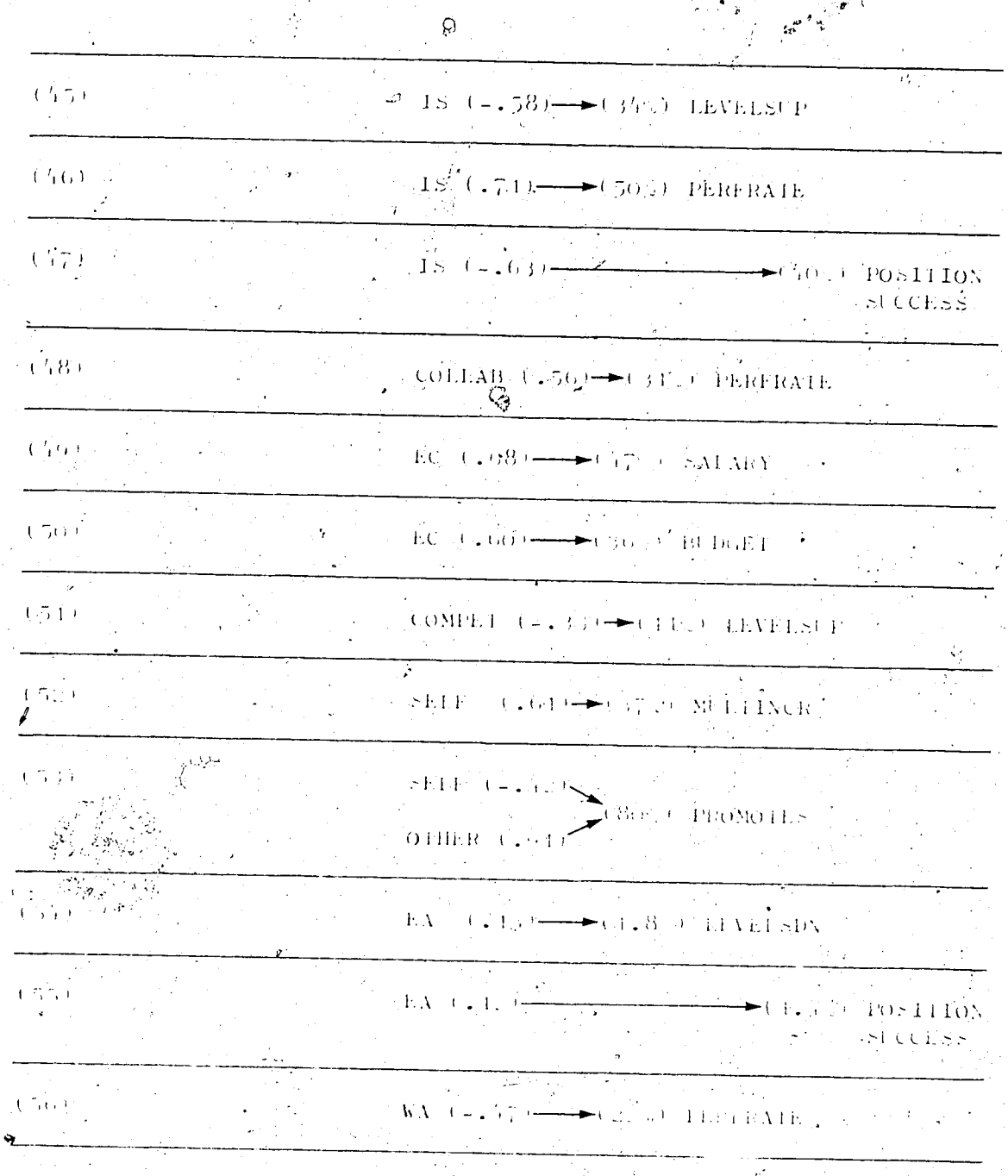


Figure 11. Regression of the success variables on the behavioural variables.



"Consideration" was not shown to be significantly related to any of the success variables.

"Initiating Structure" was positively related to PERFRATE, but negatively related to both LEVELSUP and POSITION SUCCESS. While the first of these negative relationships supports the success hypothesis, the second does not. The Leadership Opinion Questionnaire scales therefore do not consistently support the expected relationship.

"Collaboration" is positively associated with PERFRATE, which supports the expectations about it.

However, EC is positively related to both SALARY and BUDGET, which is contrary to the expectation of the direction of its relationships.

Additional scales on the behavioural instruments showing significant relationships to the success variables were: COMPET, (competitive) being negatively related to LEVELSUP; SELF (self-orientated) being positively associated with MULTINCR but negatively with PROMOTES, when combined with OTHER; EA (expressed need for affection) having a slight positive relationship to both LEVELDSN and POSITION SUCCESS; and WA (need for others to want affection) being negatively related to PERFRATE.

The mean amount of the success variance accounted for by the behavioural variables was 20.1%. Hypothesis V may therefore be accepted, even though not all relationships were in the anticipated directions.

When the demographic variables are added to the regression of the success variables on the behavioural variables, a number of significant

relationships emerge, as shown in Appendix B-10 and Figure 11.

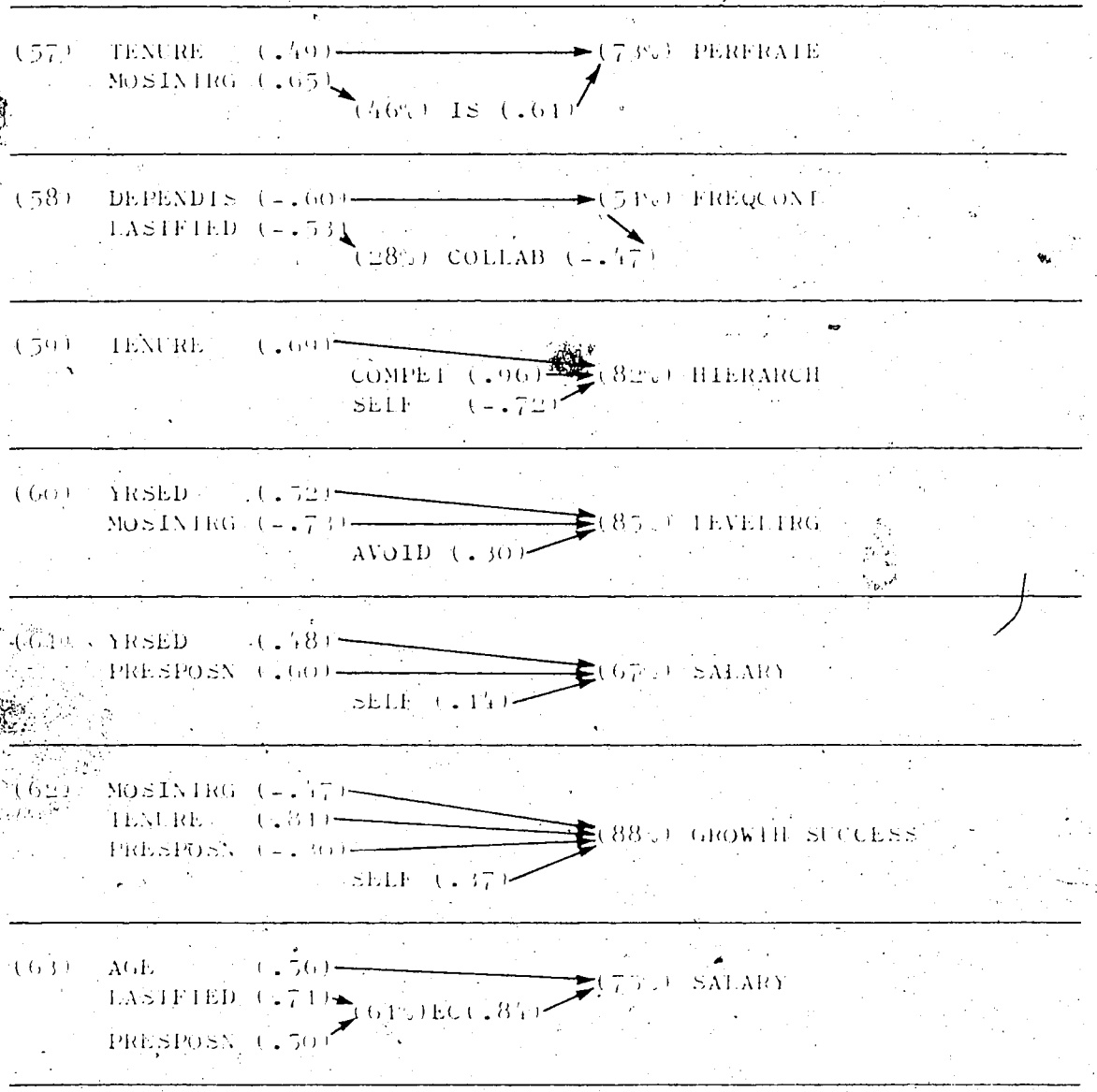
It can be seen from these regressions that: individuals with a long length of service with the organization and a high IS score also have high performance ratings; managers in frequent contact with the Deputy Minister have few dependents and are not collaborative in their conflict-handling styles; high hierarchial position is associated with tenure within the organization and a conflict management style which combines competition with a low self-orientation; individuals with more education and with recent management training practising an avoidance conflict handling behaviour, are associated with higher levels of training; individuals with more education and experience in their present positions are associated with high salaries; recent training, long tenure in the organization but a short period in the present position, and a self-oriented conflict style are associated with rapid advancement in the organization; older managers with high need for control are paid higher salaries.

The net effect of introducing the behavioural variables into the regression of the success variables on the demographic characteristics is to account for an average of 37.7% of the variance in the success variables. This represents an increase of 10.1% on the amount of variance accounted for by the demographic variables alone. Again, hypothesis V may be accepted.

Relationship between managerial success and the organizational variables

Hypothesis VI stated that "the successful manager will

Figure 12. Regression of the success variables on the behavioural scales and the demographic variables.



perceive and report his organization environment in a different manner to the way in which his less-successful counterpart will". A number of specific scales were proposed as measuring the subject's perception of his organizational environment, including those by Likert, Litwin and Stringer and Friedlander and some of those on the supplementary questionnaire. Means and standard deviations of the scores on the relevant scales of these instruments, and the correlations between scale scores and the various demographic and success criteria are shown in table 16.

A number of significant correlations between the demographic variables and the organizational scales are shown in the table. Regression of the organizational scales on the demographic variables confirms many of these relationships, as shown in Figure 13 and Appendix B-11.

It may be seen from these regressions that there is a slight but significant relationship between recency of educational experience and the perception of high organizational standards. Managers with more dependents, who have been in their present positions only a short time tend to identify with the organization. The more recent the exposure to management training, the greater the perception of structure within the organization. The more education the individual has, the less collaborative he perceives his organization to be, and the more he feels he has control over his own work. The younger the manager, the more he perceives his department and the organization headed by his superior to be flexible. The more recently he left school, the more he perceive his own organizational unit to be flexible. The more managerial

Table 10. Correlation of Organizational Variables with the various demographic and success variables.

	SYSTEM IV	CONFLICT	RISK	LIKERT CONTROL	STRUCTURE	RESPONSIBILITY	BUREAUCRACY	DEPT. FLEX	EXIT FLEX	BOSS FLEX	EXECINF
DEMOGRAPHIC VARIABLES											
AGE	.03	-.21	-.05	.16	-.11	.04	-.21	-.55*	-.51*	-.66*	.29
DEPENDTS	.17	.30	.56*	.33	-.02	.35	-.21	.04	-.08	-.12	.27
YRSED	-.40	-.01	.02	-.43*	-.39	.33	-.35	-.22	.29	-.10	-.37
LASFTED	-.21	.37	.09	-.29	.15	.06	.14	.49*	.62*	.54*	-.14
LASTED	-.04	.35	.09	.12	.05	.15	.09	.14	.13	.16	.05
MOSINTRG	.46*	-.39	-.54*	.40	-.60*	-.32	-.34	-.24	-.35	-.37	-.11
TENURE	.36	-.26	-.27	-.47	-.15	.18	-.14	-.41	-.50*	-.37	.49*
PRESPOSN	.12	-.35	-.29	-.18	.03	.10	-.10	-.12	-.23	-.42	.31
YRSMGMT	.51*	.23	.01	.32	-.09	.03	.03	-.22	-.29	-.43*	.18
SUCCESS INDICATORS											
LEVELSUP	-.33	-.21	-.64*	-.05	.08	[illegible]	-.08	-.15	-.25	.02	-.33
LEVELSDN	.34	-.10	.33	-.20	-.01	.72	.04	.37	.53*	.22	-.26
HIERARCH	.46*	.13	.61*	-.26	-.07	.12	[illegible]	-.12	.42	-.17	.18
SALARY	-.04	.22	.24	-.11	-.19	.40	-.47*	-.28	.14	-.36	.22
MULTINCR	-.22	.74*	.75*	.47*	.57*	.17	.42	.30	.50*	.28	.09
PROMOTES	.14	.36	-.09	.55*	-.06	-.36	-.42	.09	-.20	-.02	.81*
BUDGET	.59*	.39	.36	-.11	-.18	.29	-.15	-.12	-.46	-.12	.30
LOGSTAFF	.16	.20	.00	.45*	-.24	.03	-.12	-.45*	-.54*	-.58*	.55*
DIRSUBS	.12	.28	-.03	.48	.26	.05	.12	-.25	-.37	-.33	.59*
FREQCONT	.28	.12	.09	.44*	-.19	-.12	-.27	-.27	-.04	-.23	-.10
FERFRATE	.34	.01	-.25	.41	-.37	-.49	-.14	-.25	-.13	-.16	.63*
LEVELTRG	-.72*	-.63*	-.39	.58*	-.19	.00	-.55*	-.28	.17	-.17	.43

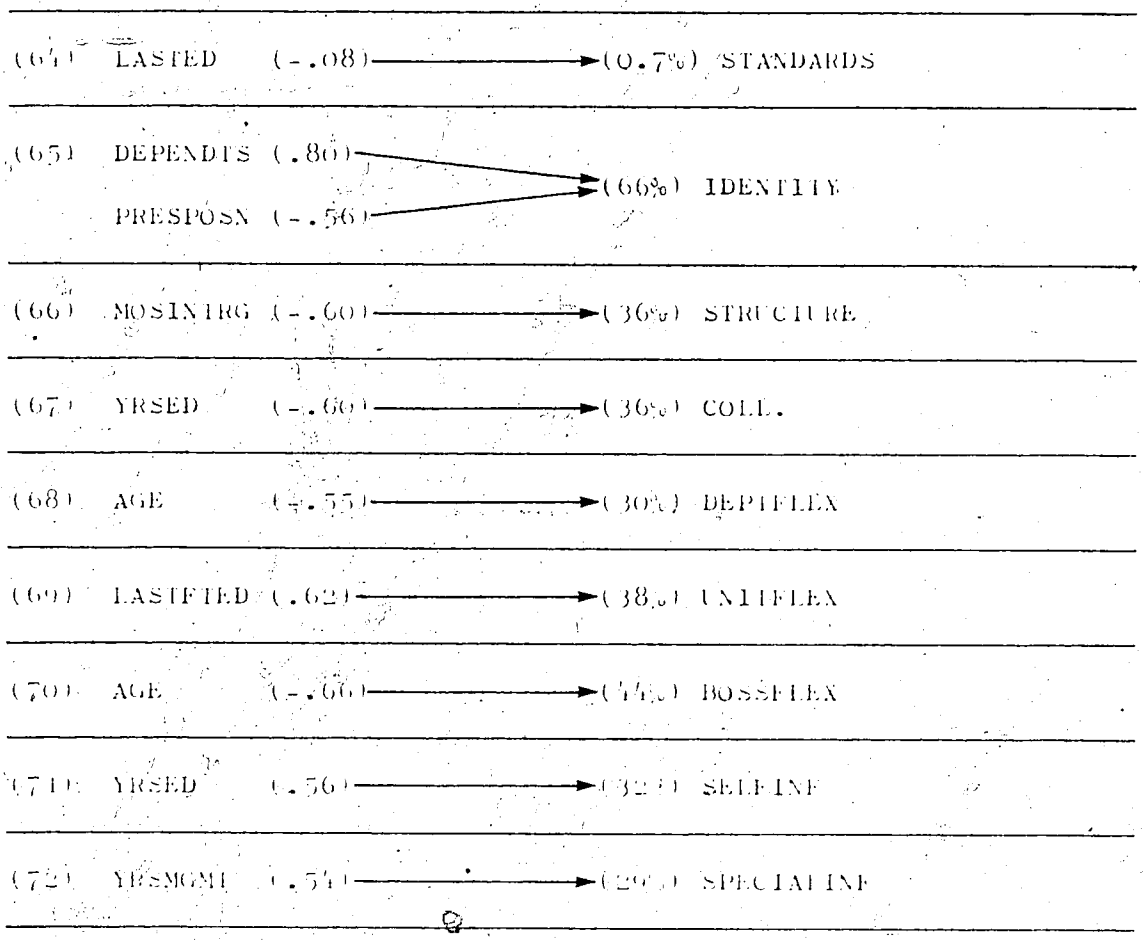
* Significant at the .05 level

Table 10 Cont.

	SYSTEM IV	CONFLICT	RISK	LIBERAL CONTROL	STRUCTURE	RESPONSIBILITY	IMAGERY	DEPT. FLEX	UNIT FLEX	BOSS FLEX	EXEC INF
SUCCESS RATINGS											
1. PRESIDENT											
2. SUPERVISORY											
3. PERSONNEL											
4. OPINION											
SAMPLE STATISTICS											
MEAN											
S.D.											
N											

* Significant at the .05 level

Figure 13. Regression of the organizational variables on the demographic variables

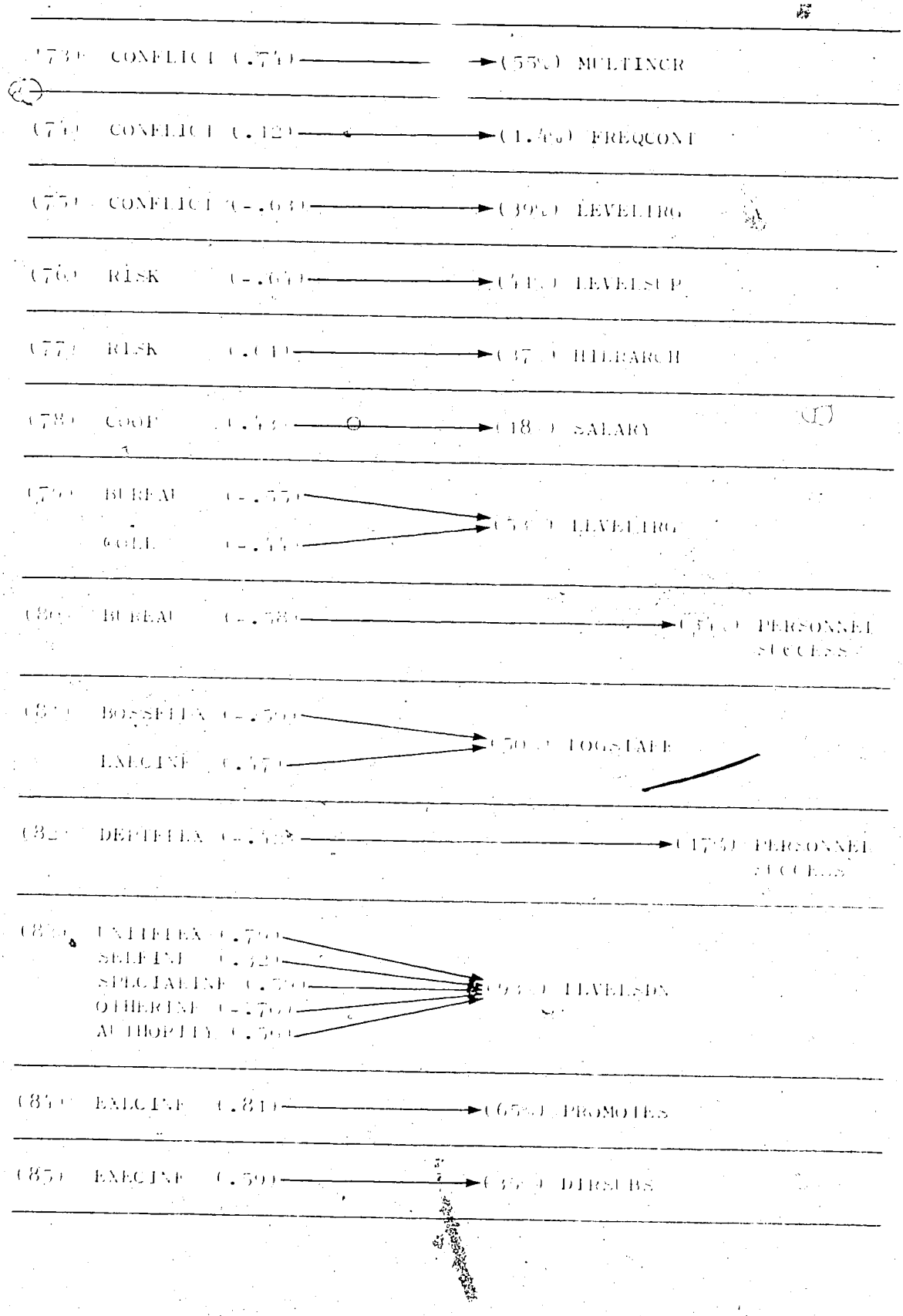


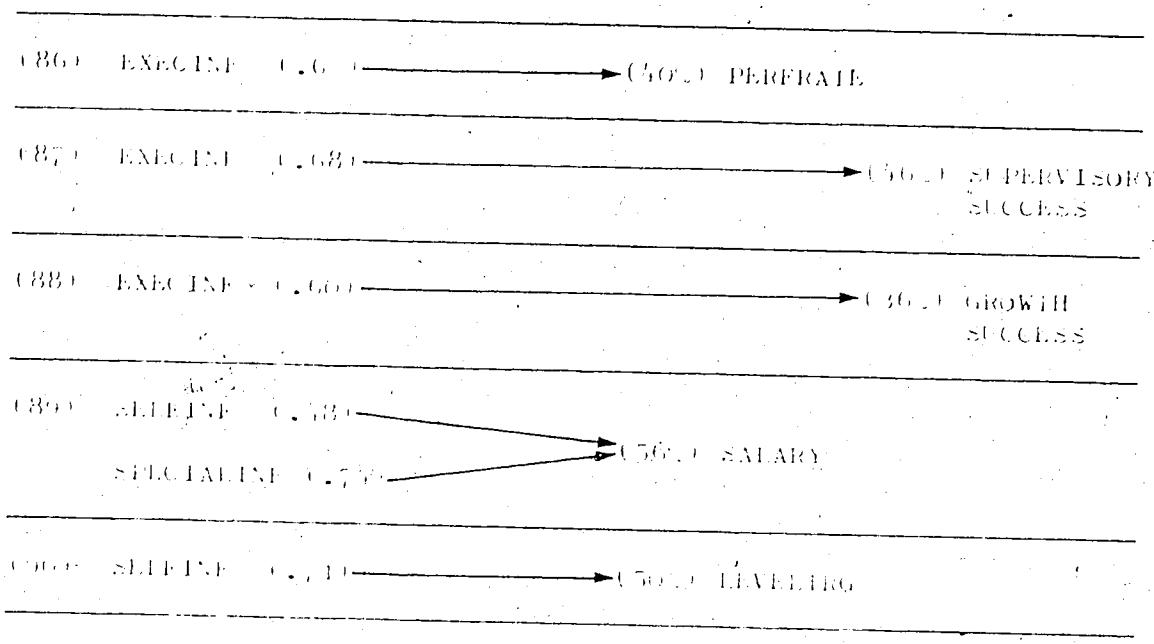
experience he has, the more he perceives staff specialists to influence the work of his unit.

When the success variables were regressed on the organizational scales, the equations of Appendix B-12 and Figure 14 were produced.

A perception of openness in the handling of conflict is associated with individuals who have received above-normal salary increments, are in more frequent contact with their Deputy Minister, and have been exposed to lower levels of training. A report of organizational support for risk-taking is associated with higher positions. The more bureaucratic the perceived organizational climate, the less recognition in terms of personnel success and the lower the level of management training attended. The more flexible the role from superior to organization is perceived to be, the less staff involved, and the more the Minister's influence is perceived. The more flexible the individual's organization, and the more the unit's work is influenced by the behavioral branch and specialists rather than others, and the more appropriate the authority he perceives himself to have, the further up the organizational ladder he is. The greater the Minister's influence over the work group is perceived, the more promotions the individual has received, the more subordinates he controls, the higher his performance rating, and the greater his SUPERVISORY and PERSONNEL success. The more the individual perceives the influence over his work-group to be his own and that of specialists, the higher his salary and the level of training programs he attends.

Figure 14. Regression of the success variables on the organizational scales.




(86) EXECINF (.6) → (60) PERFRATE
(87) EXECINF (.68) → (56) SUPERVISORY SUCCESS
(88) EXECINF (.60) → (36) GROWTH SUCCESS
(89) SELFINF (.38) → (56) SALARY
SPECIALINF (.7) → (56) SALARY
(90) SELFINF (.1) → (56) LEVELING

All the directions of the relationships involving the particular variables under study are in the directions anticipated. In fact, the mean percentage of the variance in the success variables which could be accounted for by the organizational variables alone is 40.2%, - more than twice that accounted for by the demographic variables.

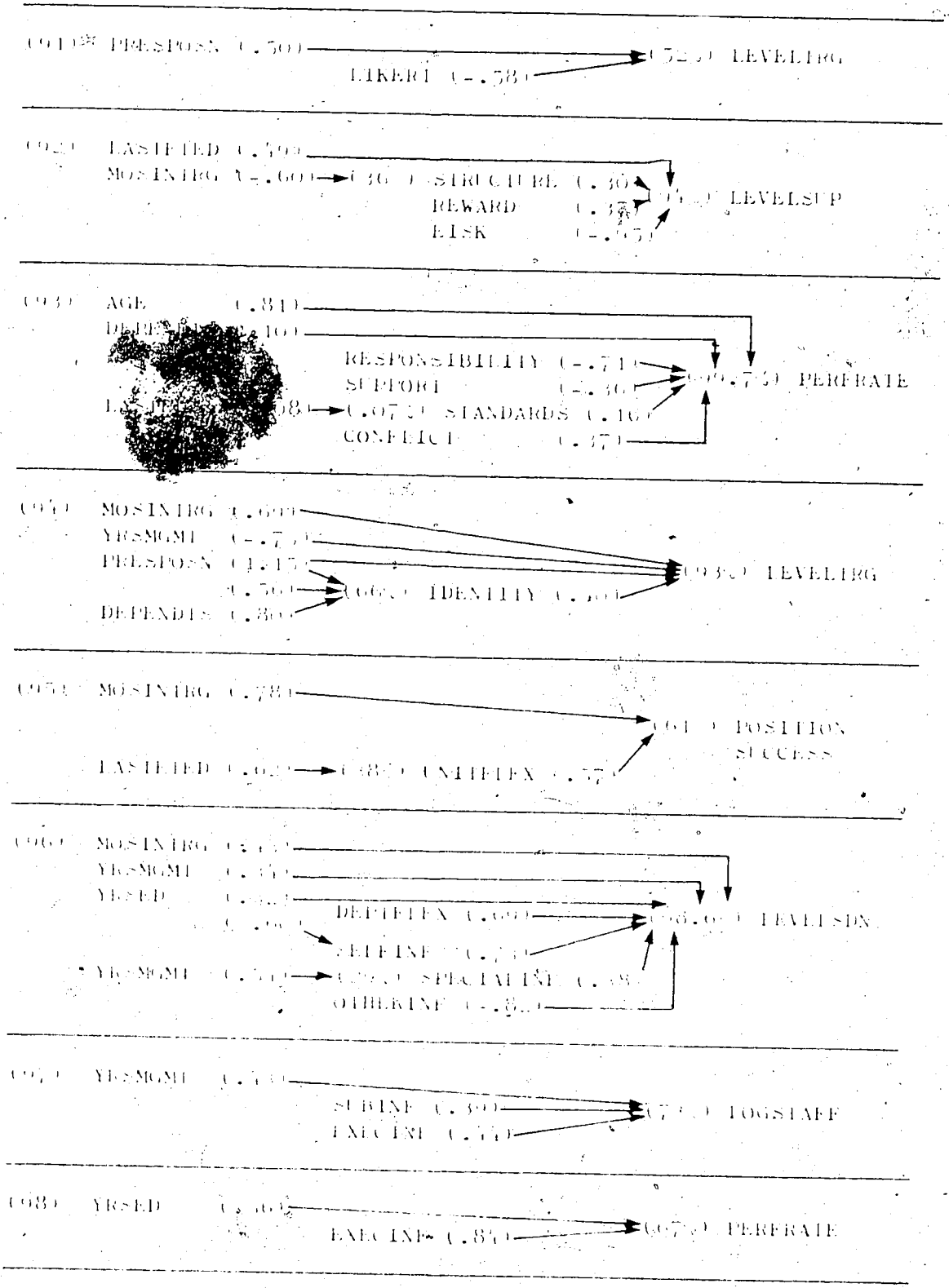
Introducing the demographic variables into the regression of the success variables on the organizational variables produces the regression equations of Appendix B-13 and the relationships shown in Figure 15.

A number of significant relationships are evidenced by the regressions. Half the variance in LEVELHRG can be accounted for in terms of the length of time the individual has been in his present position and the degree to which he sees his organization as conforming to System IV. Managers who have been in their current jobs for some time and perceive their organizational climates as most unlike System IV, take higher levels of training.

Ninety-four percent of the variance in LEVELSUP can be accounted for in terms of the recency of the individual's full-time education, and his perceptions of the organization's structure, reward system, and support for risk-taking. The more recent the individual's education, the greater emphasis he sees the organization placing on structure, rewards and "playing it safe", and the greater the distance between himself and the top of the organization.

Less than one percent of the variance in PEERRATE cannot

Figure 15. Regression of the success indicators on the organizational and demographic variables.



be accounted for by a combination of AGE, DEPENDTS, RESPONSIBILITY, SUPPORT, STANDARDS and CONFLICT. Older individuals with more dependents, who see their organizations as stressing performance standards and openness in handling conflict, but without emphasis on responsibility and managerial support are very likely to have high performance ratings.

Again, over ninety percent of the variance in LEVELIRG may be accounted for by a combination of the demographic variables and the degree to which the individual identifies with his organization. Individuals who have little management experience have been in their present positions for some time, attended a training program some time ago, and who identify strongly with the organization, are likely to attend higher-level training programs.

Individuals who attended training a long time ago and who perceive their own organizations as being flexible are likely to have a high degree of POSITION SUCCESS.

A combination of demographic variables and scales on the supplementary questionnaire accounts for over 90% of the variance in LEVELDN. The general relationship between the organizational variables and LEVELDN did not conflict, increased when allowance was made for the length of educational and managerial experience and the length of time since training, with these demographic variables all contributing positively to the regression.

In a similar manner, individuals with more managerial experience and who perceive the influence of their Minister and

their subordinates over their work group to be high, are associated with large staff.

Finally, the more educated the individual and the more he perceives that his Departmental Minister influences his work group, the higher will be his performance rating.

The mean contribution to the variance of the success variables when demographic and organizational variables are considered is 53.6% - an increase of 30% on the contribution of the demographic variables alone, and 17.1% on the contribution of the organizational variables alone. Thus, hypothesis VI may be accepted.

Summary

This chapter examined the relationships between the success criteria used in this study and the various sets of demographic variables, fundamental personality characteristics, changeable personal attributes, behavioural variables, and organizational variables hypothesised to relate to them.

Four factors were identified which accounted for 67.1% of the variance in the success indicators used in this study. These factors and their component indicators were regressed on the demographic variables and the scales used to measure the various other variables. The regression relationships referring to each of the success indicators and factors are summarized in Figures 16 to 21.

The first factor ("POSITION SUCCESS") was heavily loaded in terms of the variables LEVELSUP, LEVELSDN, HIERARCH, SALARY, BUDGET and FREQCONT.

LEVELSUP was negatively weighed on the factor, implying that the greater the number of hierarchial levels between the individual and his Deputy Minister, the less the individual's position success. The regression equation which accounted for the greatest amount of the variance in LEVELSUP suggested that individuals who had been out of college for some time and who worked within an environment which was flexible and encouraged risk-taking were more successful.

The biggest amount of variance in LEVELSDN could best be explained by a regression equation which implied that individuals with more educational and managerial experience who worked in a

Figure 16. Regressions relating to LEVELSUP

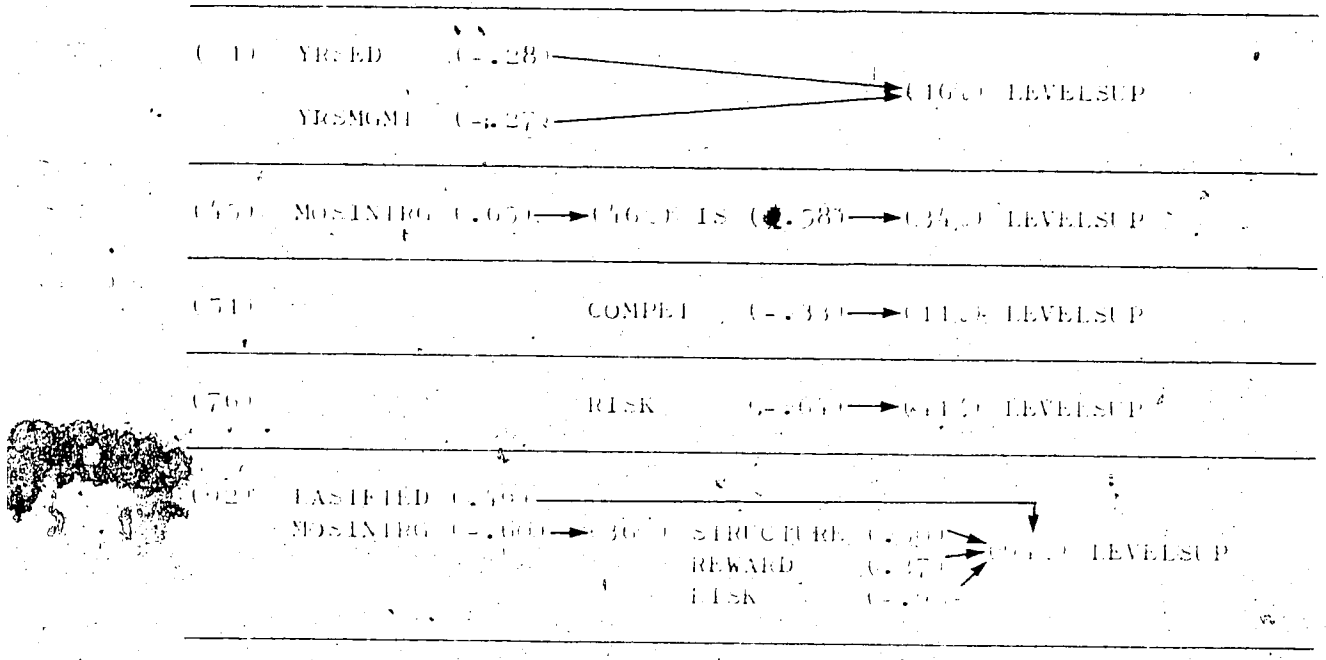


Figure 17. Regressions relating to LEVELSDN

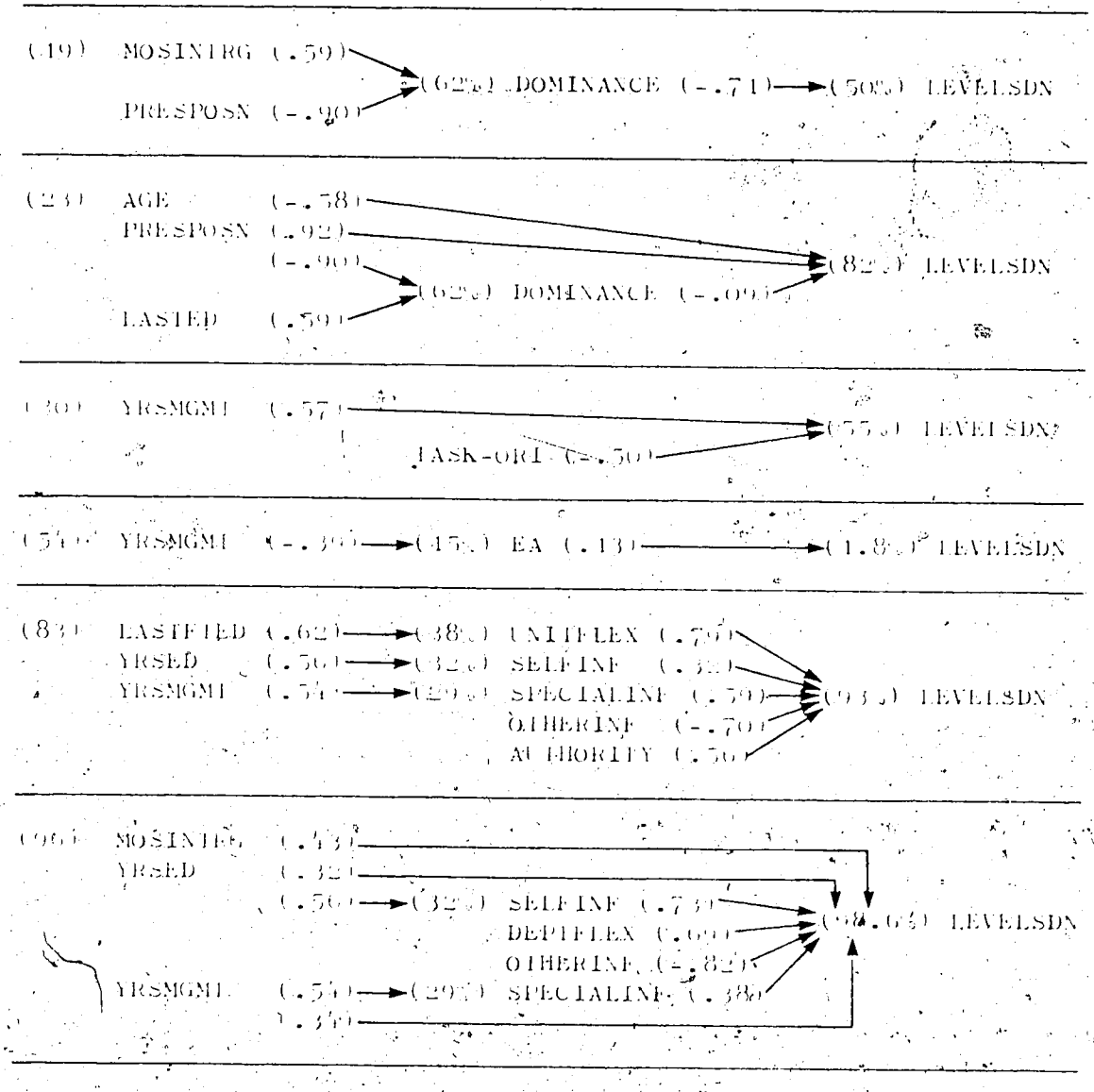


Figure 18. Regressions relating to HIERARCH

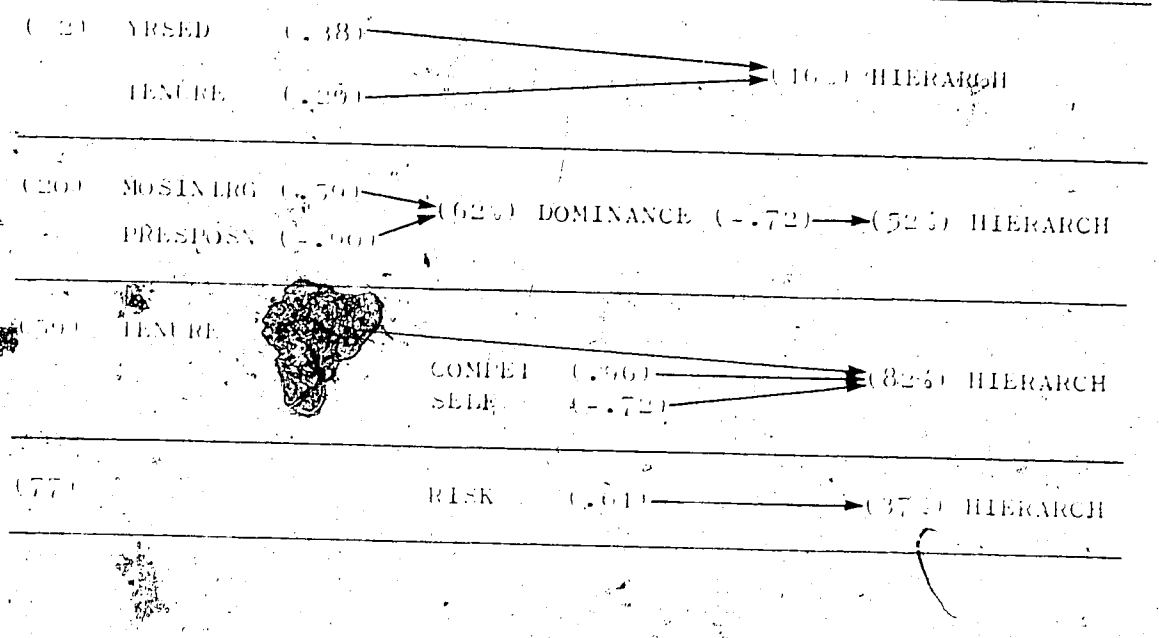


Figure 19. Regressions relating to SALARY

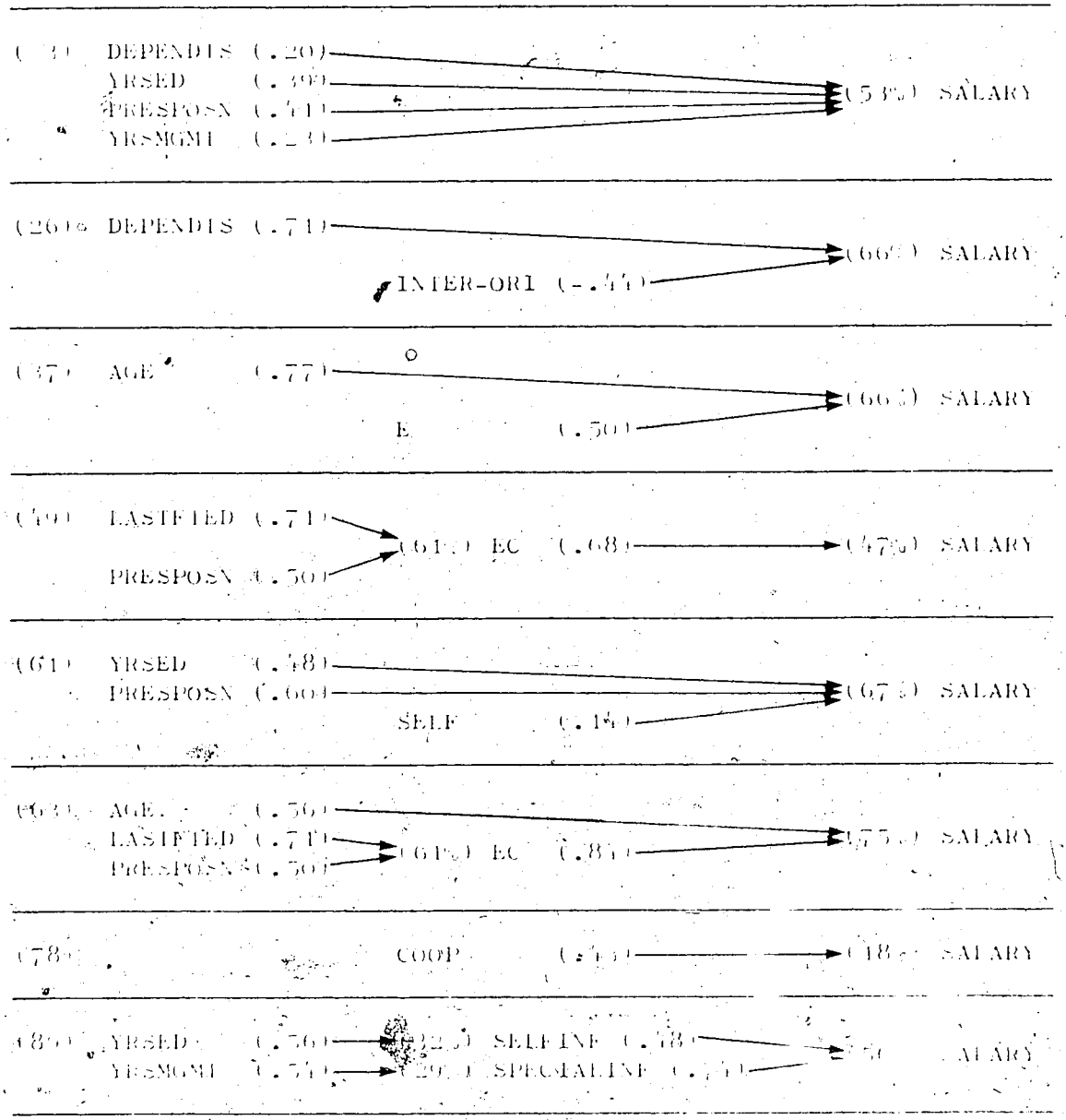


Figure 30. Regressions relating to MULTINCR.

(34)	E	(.70) ⟶	(49%) MULTINCR
(52)	SELF	(.61) ⟶	(37%) MULTINCR
(73)	CONFLICT	(.74) ⟶	(55%) MULTINCR

Figure 21. Regressions relating to PROMOTES.

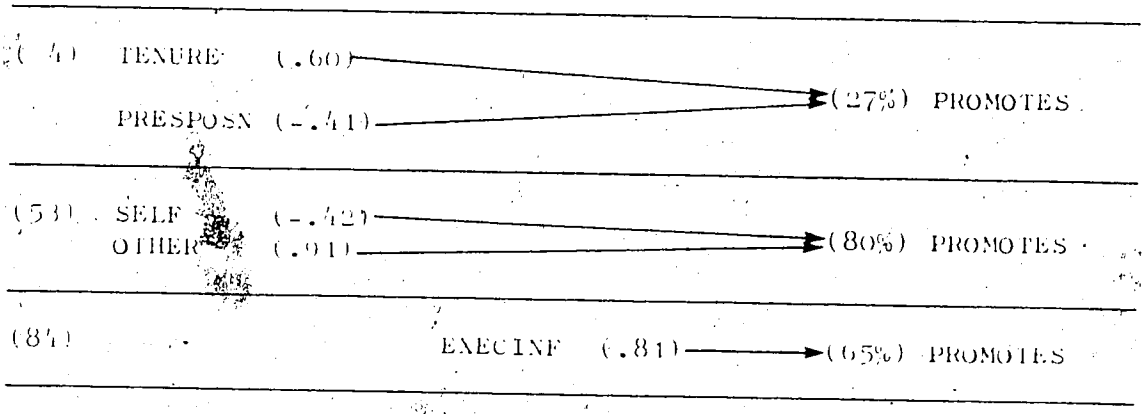


Figure 22. Regressions relating to BUDGET.

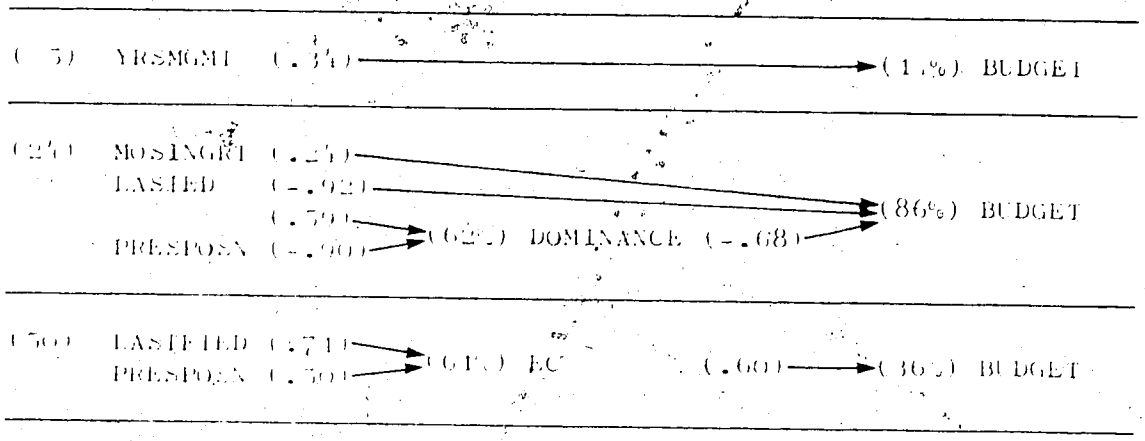


Figure 23. Regressions relating to LOGSTAFF.

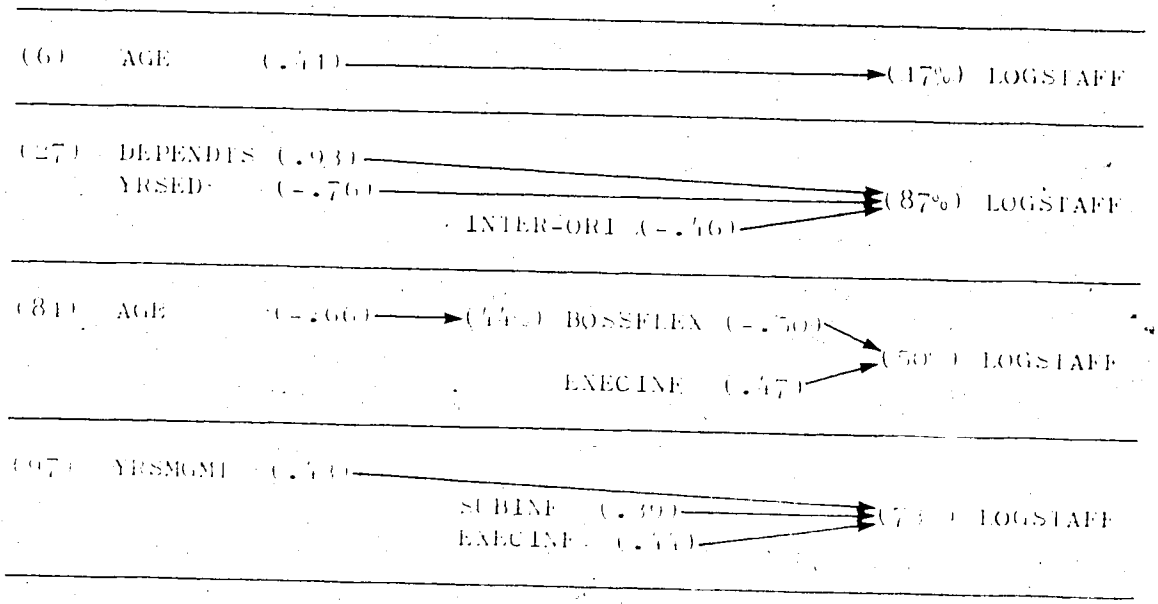


Figure 24. Regressions relating to DIRSUBS.

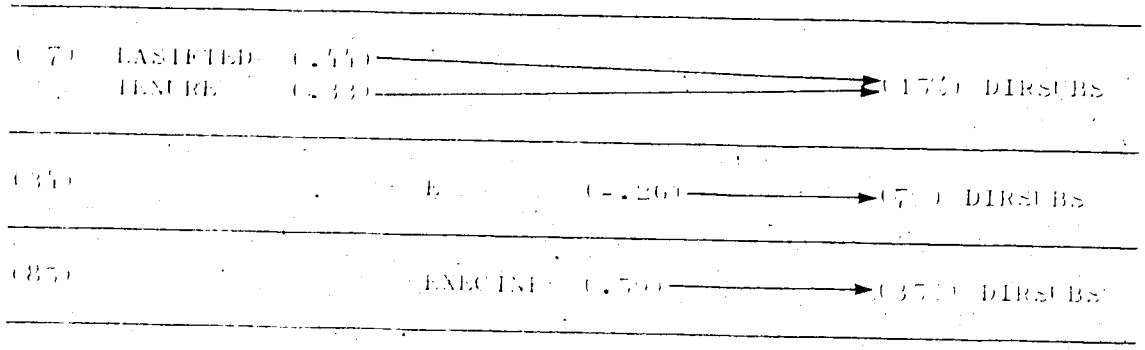


Figure 25. Regression relating to FREQCONT.

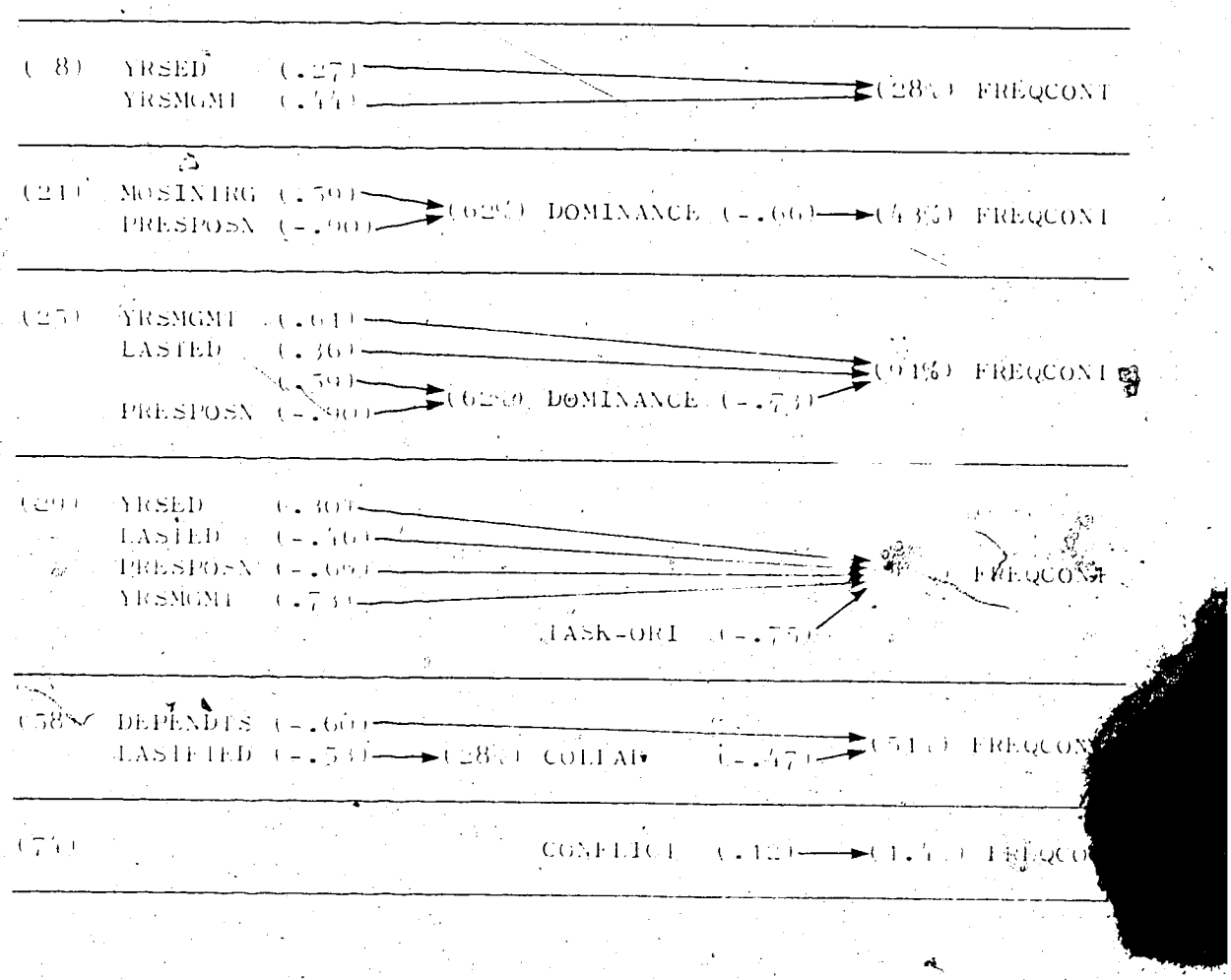


Figure 26. Regressions relating to PERFRATE.

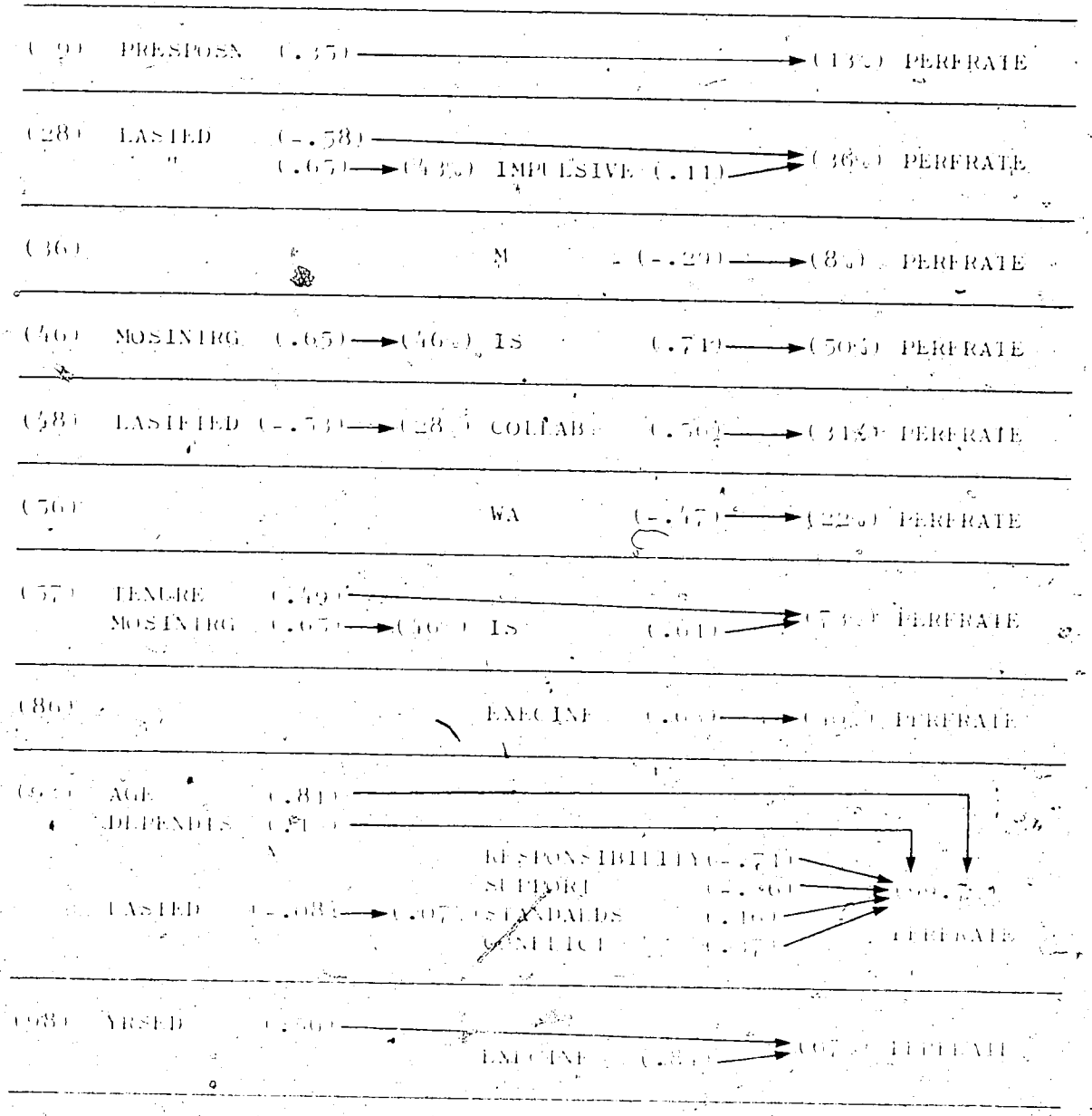


Figure 27. Regressions relating to LEVELTRG.

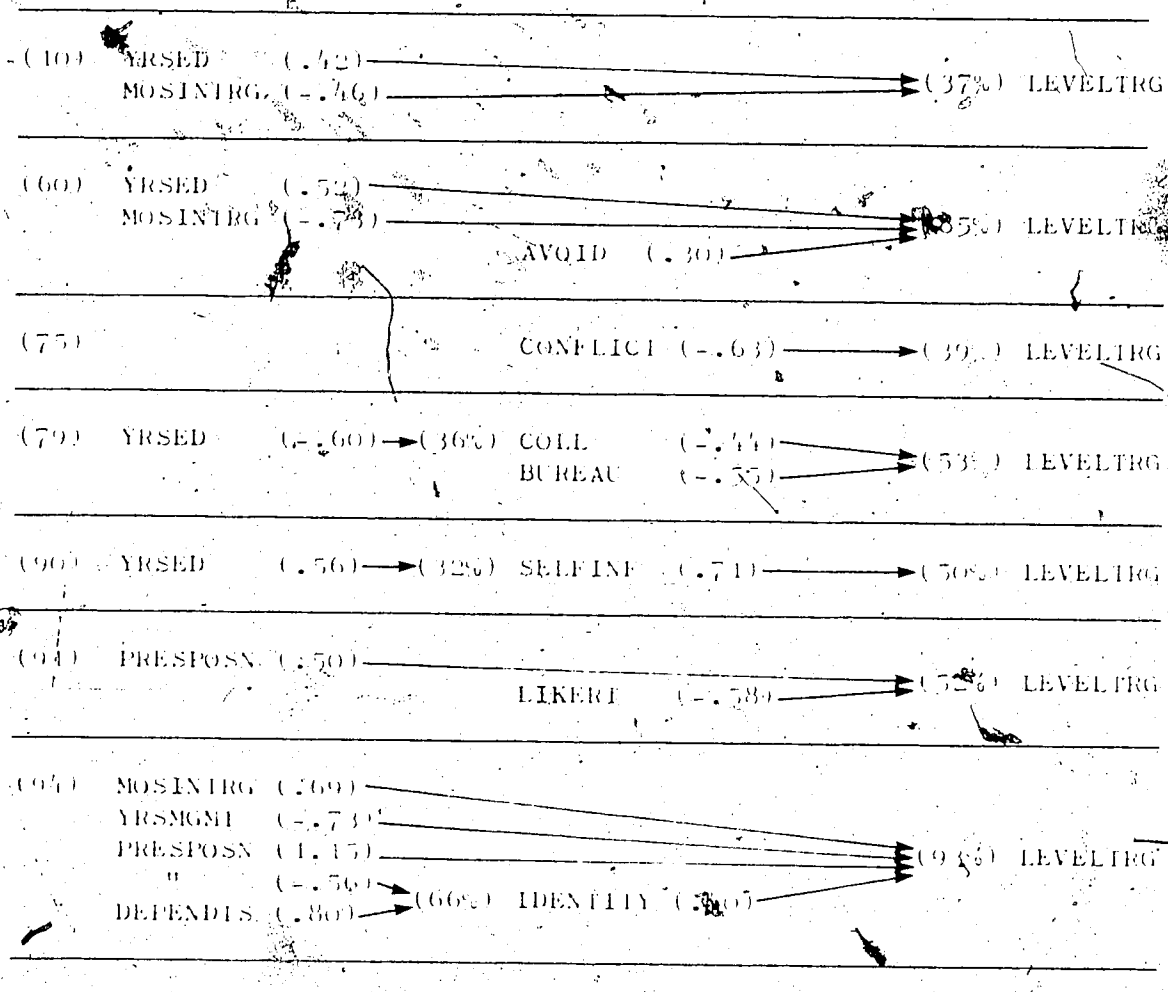


Figure 28. Regressions relating to POSITION SUCCESS.

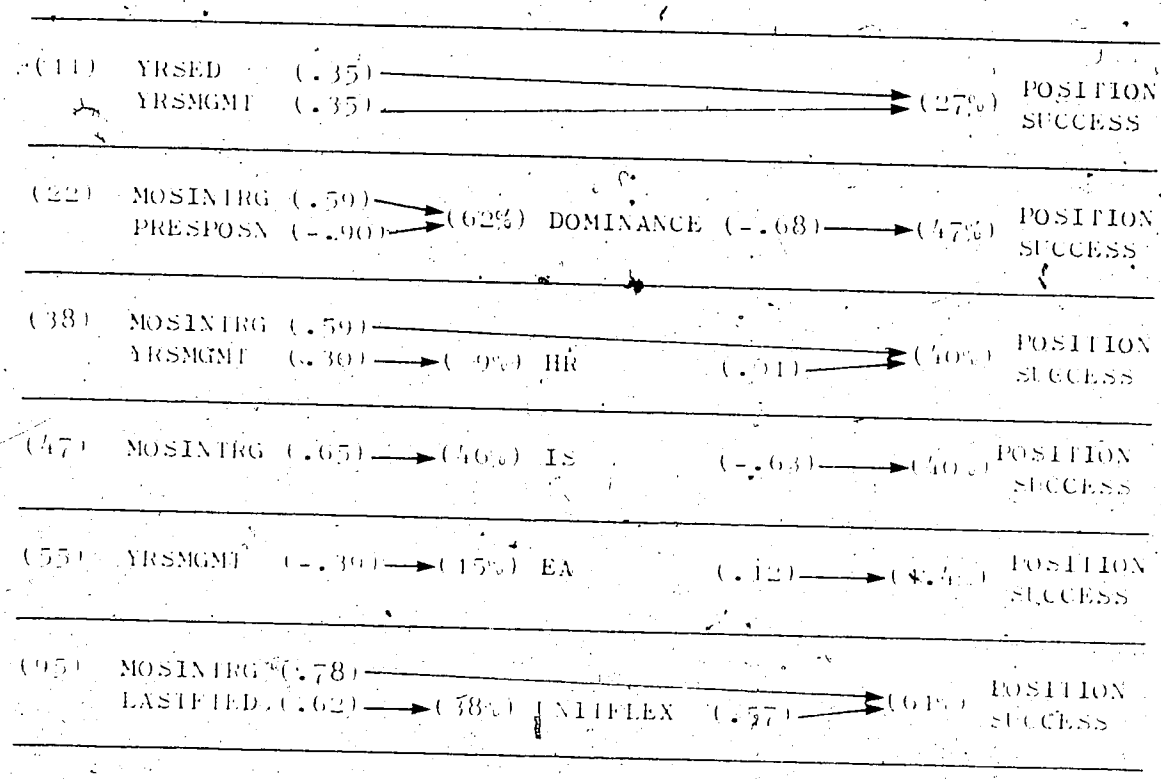


Figure 29. Regressions relating to SUPERVISORY SUCCESS.

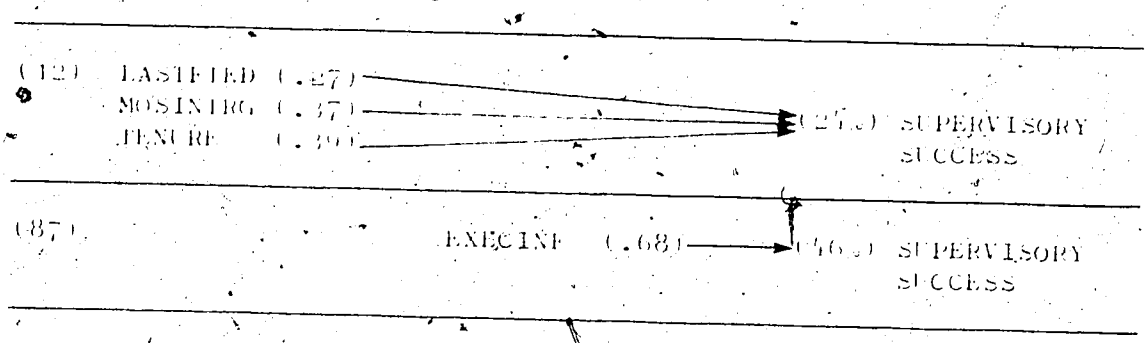


Figure 30. Regressions relating to PERSONNEL SUCCESS.

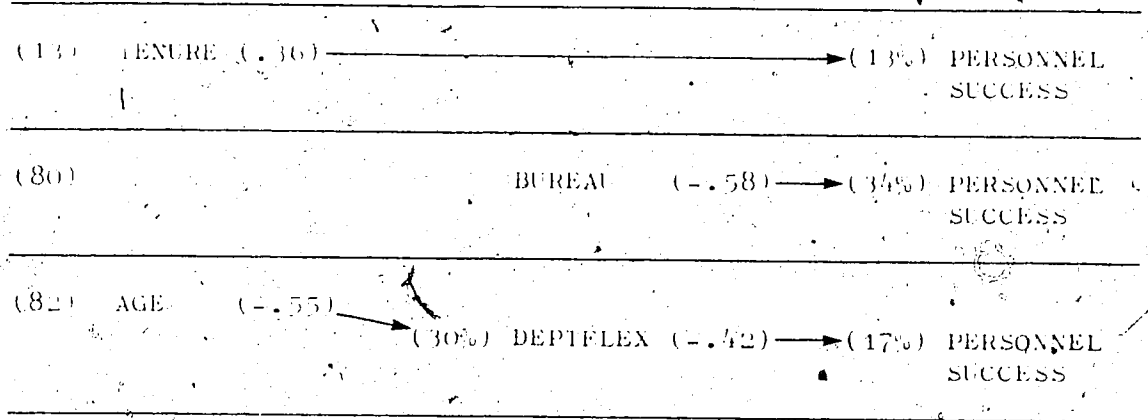
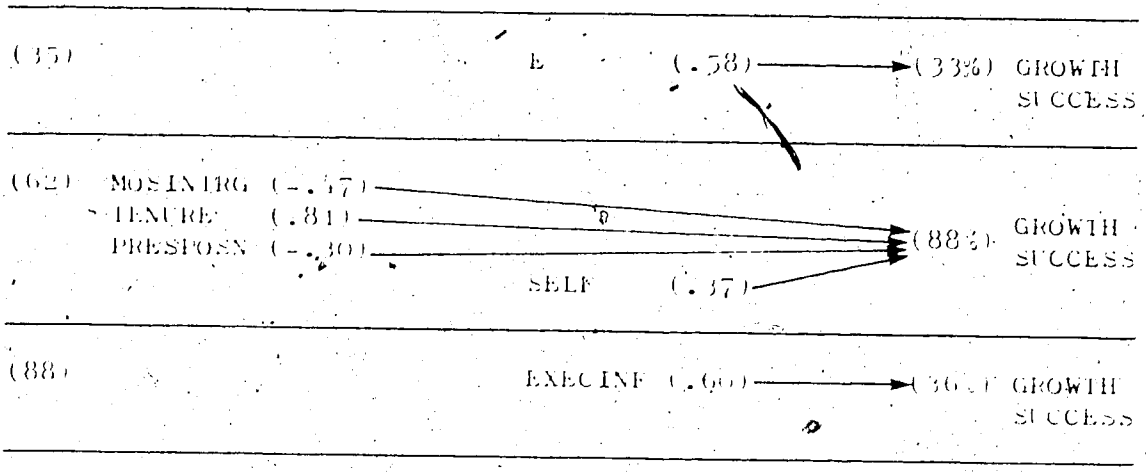


Figure 11. Regressions relating to GROWTH SUCCESS.



flexible organization, without outside influence, had more hierarchial levels beneath them.

The variance in the variable HIERARCH could best be accounted for by the relationship that individuals who had been in the organization for some time and who displayed a conflict-handling style which was competitive without being totally selfish were further up the organization.

SALARY proved to be one of the more difficult variables to predict. AGE, DEPENDTS, YRSED, PRESPOSN and YRSMGMT all formed relationships to SALARY (sometimes including the scales of various instruments in the relationship), accounting for about two-thirds of its variance.

The relationship which best accounted for the amount of budget an individual controlled took into consideration the length of time the individual had been away from educational influences and his score on the DOMINANCE scale. It seemed that the less dominant the individual was, and the further away from education he was, the greater the size of budget he was likely to control.

FREQCONT reflected the frequency of the individual's dealings with his Deputy Minister. Two regression relationships proved significant at the .05 level. Firstly, individuals who were well qualified in terms of education and experience, but who had been in their jobs only a short time and were not task-orientated had frequent dealings with their Deputy Minister. Secondly, individuals who were less dominant, who had considerable management experience and recent educational exposure also had

frequent contact with their Chief Executive Officer.

All the above variables loaded the factor "POSITION SUCCESS", but when this factor was regressed on the demographic and intervening variables the amount of variance in POSITION SUCCESS which could be accounted for was only about 60%. The general trend which emerged from the regressions was a negative association between POSITION SUCCESS and such characteristics as DOMINANCE and INITIATING STRUCTURE. Organizational flexibility, individual qualifications and the length of time since the individual had undergone management training also appeared to enhance the probability of success in terms of hierarchial position.

The second success factor was weighted most with the variables LOGSTAFF, DEPNDTS and (negatively) LEVELTRG, and was identified as "SUPERVISORY SUCCESS".

The regression equation which explained the largest amount of the variance in LOGSTAFF implied that individuals with less education and more dependents, who were inner-directed by disposition were associated with a large staff.

About a third of the variance in DIRESTBS could be accounted for by EXECINF. The regression implied that managers who perceived the Minister of their Department to have considerable influence over their work units had a large number of direct subordinates.

The regressions on LEVELTRG suggest that people attending higher-level training programs had been in their current positions longer, and had little management experience but

strongly identified with the organization. The longer ago the management training was, the higher its level.

About half the variance in the factor SUPERVISORY SUCCESS could be related to the individual's perception of the influence his Minister had on the individual's work unit. The length of time the individual had been in the organization, the recency of his last full-time educational experience and the length of time since he had been involved in management training also related positively to this factor.

The third factor was weighted heaviest by those variables which reflected the corporate Personnel system, namely PERFRATE, LEVELTRG and SALARY.

The regression equation which accounts for nearly all the variance in PERFRATE suggests it to be strongly (and positively) related to AGE. The organizational climate conducive to a high performance rating would be one in which support and responsibility were not stressed but openness in dealing with conflict and high standards were.

When the factor PERSONNEL SUCCESS was regressed on the demographic and organizational variables, a third of its variance could be accounted for by the relationship that a highly bureaucratic organization did not encourage the recognition of individual success in its Personnel system.

The last of the four factors was heavily weighed in terms of two indicators - MULTINCR and PROMOTES.

MULTINCR could be related about equally (and positively) to an employee-orientation, a conflict-handling behaviour style

which focused on gain for the individual, and an environment which stressed openness in the handling of conflict.

PROMOTES, however, could best be explained either by the degree of Ministerial influence the manager perceived in his work group, or by a conflict management style that expressed more concern for the other person than the self.

When these two indicators were combined in the factor GROWTH SUCCESS, however, the regression which accounted for 80% of the variance in the success criterion was related positively to a conflict-handling style which stressed individual gain, and to tenure within the organization, and negatively to the recency of both training and tenure in the present position.

On the whole, about 80% of the variance in the success indicators (and about 50% in the success factors) could be explained by regressions involving the demographic variables in conjunction with one or more of the scales representing other variables.

Since all the variable sets were shown to relate to the success indicators and factors, although in somewhat different ways, all the hypotheses of Chapter VI may be accepted.

CHAPTER VIII

CONCLUSIONS AND RECOMMENDATIONS

This study was designed to identify some of the different concepts of managerial success in the public sector, and to examine a number of instruments for use as potential predictors of the criterion variables. A number of conclusions can be drawn from the results obtained in this study, and recommendations made for further investigations in this field and for management development activities within the organization under study.

Hypotheses

The Hypotheses tested in this study were that the degree of managerial success an individual attained within an organization would be a function of a number of demographic, fundamental personality, changeable personal, behavioural and organizational variables. On the basis of empirical data collected in this study, these hypotheses are to be accepted. Not only were a number of variables within each of the dependent sets found to relate to each of the success criteria, but in many cases, specific expectations with regard to relationships between particular instrumental scales and the success criteria were fulfilled.

This suggests that the scales used in this study and the relationships discovered between the scales and the success criteria may be used by managers and those interested in management development to predict and facilitate managerial success within organizations.

The success criteria

The findings reported in Chapter VII suggest a number of conclusions with reference to the success indicators used in the study.

It is evident from the previous chapter that different success criteria have different patterns of relationships with the demographic and other variables used in this study. In studying managerial success, it is therefore necessary to engage and select particular criteria for study. The present work suggests several considerations to be borne in mind when selecting criteria:

1. Indicators should be chosen which do not cause the sample to be biased. For example, the variable MULTINCR (the number of multiple increments received over the last five years) is biased against people who have not been in the organization five years. Allowance for this bias should somehow be made.
2. The time frame of the indicators should be relevant. While the variables MULTINCR and PROMOTES in this study referred to the last five or ten years, FREQCONT might have a much shorter time frame, and LEVELING could be based on anticipated success.
3. Allowance should be made for missing data. Many of the subjects in the existing study could not report on their last performance appraisal rating (PERRATE). The way in which missing data is handled could influence the relationships involving this variable as well as biasing the sample.
4. Precise definition of the success criteria is needed. The concept of LEVELSDN and HIERARCH, for example, may be difficult to interpret in a staff role or a non-bureaucratic organization. Operational definitions which have meaning to

all subjects were therefore required.

The success factors

While conceptually, the idea of a number of factors representing different aspects of managerial success appears sound, the results in terms of significant predictive relationships were not substantial. Two reasons may be suggested for this event.

Firstly, the success factors are constructed from linear combinations of success indicators. Now, while a particular group of demographic or other variables may relate themselves particularly well to one or more of the success indicators represented in a factor, it is unlikely that all the indicators in a success factor group would relate themselves equally well to the particular variables. The success factor, which may be considered a kind of weighted average of the indicators would therefore have a less substantial portion of its variance accounted for than would one or two of its component indicators. In essence, to optimise a relationship between simple indicator and a variable is to suboptimise the relationship between a complex factor on the variable. It would be much more difficult to find a variable set which relates to a factor than one which relates to an indicator.

Secondly, since the relationships which predict indicators may weight variables in different direction (positive or negative) and the factor consists of a number of indicators, variables relating significantly positively to some of the indicators in a factor may relate significantly negatively to other. The net result may be that the previously significant variables appear non-significant in terms of their relationships to the composite

factors, and variables which were non-significant in their relationships with individual indicators may become significant when combined with other relationships in the factor.

Some justification for these arguments may be found when the relationships between variables and the success factors are compared with relationships between the same variables and the component indicators.

The factor "POSITION SUCCESS", for example, consists of the indicators LEVELSDN, HIERARCH, SALARY, BUDGET and FREQCONT weighted positively and LEVELSUP weighted negatively. The personal characteristics of the manager high in POSITION SUCCESS were considerable education and managerial experience, and low DOMINANCE and INITIATING-STRUCTURE scores. Generally speaking, the organizational environment conducive to POSITION SUCCESS was one which was tolerable.

Individuals with such qualifications would have few LEVELSUP where the organizational climate encouraged risk-taking, would have more LEVELSDN where there was little opportunity for influence in the work group, would have high salaries, sit away from colleagues of equal rank, would control large budgets, and sit in their present positions only a short time; would have frequent dealings with their Deputy Ministers.

Likewise, the individual who was high in terms of SUPERVISORY SUCCESS had likely been in the organization for some time but recently been exposed to full-time education, and perceived a high degree of Ministerial influence over his work group. Given that such a person had less education and was inner-directed in his

traits, he would probably have a large staff. He would have, in any case, a large number of direct subordinates, and (if strongly identifying with the organization) would attend higher-level management training programs.

PERSONNEL SUCCESS was largely associated with a lack of bureaucracy in the organizational climate. Where support and individual responsibility were not stressed, but openness in handling conflict was, the older individual would have higher performance ratings. When the individual had been in his current position for a long time, both his SALARY and his LEVELTRG would likely be high.

The GROWTH SUCCESS factor is unique in that regression relationships between it and the intra-personal, behavioural and organizational variables account for more of the variance than do regression relationships between the variables and the component indicators (MULTINCR and PROMOTES). Individuals displaying a strong other-orientated style of handling conflict are associated with a number of promotions in the last ten years. Individuals who avoid conflict or who are competitive in handling it, gain more multiple increments. However, individuals who have a weakly self-orientated conflict handling [illegible] have been in the organization for some time but in their present positions only a short while and were recently exposed to training, are attributed with more GROWTH SUCCESS. The key to this change in the effects of self-orientated conflict handling appear to be in the relationships between GROWTH SUCCESS and TENURE, MOSINTRG and PRESPOSN, which are non-significant when the indicators PROMOTES and MULTINCR are

regressed on the demographic variables, but are significant when combined with the conflict handling styles.

Thus, on the whole, the success factors are more general criteria of managerial success, but are more difficult to predict than single success indicators.

The independent variables

One of the issues which must be addressed in examining the relationships between the success variables and the so-called "independent variables" is that of causality. The regression relationships are based on an analysis of the correlations between variables. While correlations are indicators of the strength and pattern of relationships, they do not indicate the direction of causality in the relationship. With a number of "prior" demographic variables (i.e. age, sex and racial origin), the direction of relationship with other variables may be reasonably argued. It is difficult, however, to deduct the relationship between many of the other "demographic" variables and the intermediate variables or the success criteria.

For example, POSITION SUCCESS is positively related to both MOSINTRG and INTELLEX. Does that mean that high-position managers do not have time for training and operate a flexible organizational unit, or does post-training experience contribute to a manager's success in terms of position?

The perception of Ministerial influence over the work group is associated with having a large staff. Are individuals who are politically sensitive appointed to positions in which they control

large numbers of subordinates? or do Ministers take particular interest in the larger units of their organization?

Bureaucratic organizational climates are negatively related to the recognition of managerial success by the corporate Personnel system. One may infer that the Personnel system is biased against the more bureaucratic institutions, or that more flexible organizations find ways within the Personnel system of giving their managers more recognition.

Likewise, do tenure within the organization and a self-orientated conflict-handling style lead to GROWTH SUCCESS? or do people who gain rapid recognition stay within the organization and defend their positions with a self-orientated behavioural style?

These questions cannot be answered by the present study. They are, of course, important questions. Further research is therefore suggested into the direction of causality in the relationships discovered in this study.

A second conclusion with respect to the independent variables is that some variables need closer definition. A number of the scales which purported to measure the same dimension (e.g. Litwin and Stringer's STRUCTURE, Friedlander's BUREAUCRACY and the supplementary questionnaire scale UNIFLEX, all measuring the degree of "flexibility" in the organization) showed different relationships to the criterion variables. While the scales were completed by different sub-samples (and that may have led to different relationships), the possibility that different scales measuring ostensibly the same variable do not actually do so, must be entertained.

The fact that certain variables appear unexpectedly in a number of relationships, such as DEPENDTS and LASTED, also suggests that more attention should be given to the definition of these variables so that their relationships to the criteria variables may be investigated further.

Evaluation of the Instruments

It is evident from the results of this study that the various scales used accounted for different amounts of the variances in the success indicators and factors. The degree to which an instrument accounts for variance in the criterion variables is obviously one consideration in the selection of instruments to describe or predict managerial success. In this regard, instruments measuring organizational variables generally proved superior to those measuring other types of variable.

Table 11 shows the mean amount of variance of the success variables accounted for by each of the instruments used in the study (in conjunction with the demographic variables). While these statistics are not generally accepted as very meaningful in the evaluation of scales, they do give some indication of the relevancy of the scales to the task at hand.

The number of success variables a scale may be used to predict, and the profile of the percentages of variance in each of the criterion variables predicted by the scale are also significant. Administrative considerations such as costs of instruments and the time taken to complete them must also be included in the evaluation of an instrument.

Table 11. Mean percentage of the variance in the success variables accounted for by the various instruments in conjunction with the demographic variables.

	%
The California F Scale	18.6
Thurstone Temperament Schedule	36.6
Bas[illegible]ientation Inventory	30.0
Dore's Leadership Questionnaire	24.6
Gekoski and Schwartz's Supervisory Index	19.4
Leadership Opinion Questionnaire	24.8
Thomas' Behaviour Description Questionnaire	34.7
Shutz's FIRO-B	21.5
Litwin and Stringer's Climate Survey	37.1
Friedlander's Climate Survey	20.9
Likert's Organizational Climate Survey	19.5
Supplementary Questionnaire	42.3

If the criteria for the selection of instruments to measure managerial success, however, is to account for as much of the variance in the success variables as possible, the results of this study suggest that those scales indicated in Figure 31 should be adopted.

Evaluation of corporate practices

Where all the known significant relationships with respect to a particular success criterion are assembled (as they are in Figures 16-21) some decisions can be made on the effects of corporate practice.

This study was stimulated by the desire to evaluate the management training and development activities within the organization under study. It may therefore be appropriate for the management of the organization to review those relationships involving such variables as LEVELTRG, MOSINTRG and GROWTH SUCCESS because of their association with the objectives and activities of management development within the organization.

The level of the last management training program taken by the subjects in the sample, for example, appears to be positively related to: educational level, avoidance of conflict, the degree of influence an individual perceives himself to have over his own work, the length of time he has been in the organization, and the degree to which he identifies the organization. The organizations from which such individuals came to the higher level training programs would be low in terms of System IV: they would be less bureaucratic and collaborative; and they would not encourage the

open handling of conflict.

MOSINTRG is also related to a number of variables. It seems that the further away from training the individual is, the more sociable and dominant the individual becomes (both negatively related to the success criteria), the more he initiates structure, and the greater would be his budget, the number of levels beneath him and his general POSITION SUCCESS. The further away from training also, the less structure the individual perceives in his environment and the less his GROWTH SUCCESS.

The composite factor GROWTH SUCCESS is positively related to: tenure within the organization (but negatively to the length of time the individual had been in his present position), the individual's orientation toward employees, his perception of executive influence over his work unit, and a conflict style which emphasized the individual's own gain.

Once more, the direction of causality in these relationships is open to question, but on the basis of these relationships a number of decisions could be made by the corporate executives with respect to the design and conduct of training programs and the selection of individuals for them (4)

Similar procedures may be followed with respect to salary administration (the variables to be studied would be SALARY and MLEINCR), manpower mobility (TENURE, YRSMGMT and PRESPOSN), position classification (LEVELSUP, LEVELSDN, HIERARCH, BUDGET, LOGSTAFF and FREQCONT), executive behaviour (FREQCONT) and budgetry control (BUDGET). In all cases the personal, behavioural and organizational characteristics influencing the variable would

provide information, not currently available, on the basis of which the corporate management may wish to review its practices.

Recommendations for further study

One of the weaknesses in the existing study is that the variables associated with personal attributes, behavioural styles and organizational characteristics had to be considered separately in their relationships to the demographic and success variables.

The message of Fiedler's (1967) Contingency Theory is that effective leadership is a function of leadership behaviour within the context of a particular organizational environment. The key to managerial success according to Fiedler lies in the matching of behaviour to the situation.

Management development specialists would be interested to know more about the relationships between certain personality characteristics and effective leadership behaviour, so that training programs could be designed for particular personality types to develop appropriate behaviour patterns.

Likewise organization theorists and career counsellors would be interested in the relationships between individual characteristics and organizational properties which proved successful managerially.

These types of relationships have not been investigated within the present study. It is recommended that the questionnaire distribution system and the design of the existing study be extended to allow for these relationships to be studied.

The limitations of the present study in terms of the organ-

izational type are obvious. The data available from this study applies only to one public-sector organization in Western Canada. The extension of the study to Eastern Canada, to the United States and other countries, to the private sector, and to other public agencies may be recommended.

Lastly, the various improvements to the definition of criteria etc. mentioned earlier in this chapter should be considered.

FOOTNOTES

1. In his (unpublished) doctoral dissertation, Gutteridge did use a number of other career progress criteria, including: compensation growth rate, ratio of current salary to Corporate Presidents' salary, ratio of current salary to M.B.A. starting salary, job title, and organizational level. He reports, however, that "the predictors related to these additional criteria were basically the same as those related to yearly salary". (Gutteridge, 1973, pg 131)

2. Gutteridge (1973) pg 131

3. Steele and Ward (1974) pg 100

4. Laurent (1970) pg 420

5. The need for power was represented in Warner and Rowans' work by the "autocratic/laissez-faire" dimension of leadership style, with the assumption that autocratic style was symbolised a high need for power.

6. Wollowick and McNamara (1969) pg 349

7. An in-company developed biographical inventory, scored with two keys representing "Self-confidence" and "the characteristics of a successful manager".

8. Bray and Grant (1966) pg 2.

9. Stogdill and Shartles' (1948) scales represented degrees to which the individual's leadership is characterised by

"responsibility", "authority" and "delegation".

10. Groups organized on a project team basis, but receiving their feedback on the basis of individual performance were found to be the most creative.

11. Herzberg, Mausner and Snyderman (1957) pg 23

12. For a review of the work of Vroom (1964) and Porter and Lawler (1968) and an attempted integration, see Heneman and Schwab (1972).

13. Various rewards the individual receives indirectly from his work (such as salary, recognition, success, etc.) are classified as second-level outcomes since they result from the organization's responses to more immediate (or first-level) stimuli such as productivity, loyalty, effort, etc.

14. A more comprehensive review of the literature in this area (prior to 1971) can be found in such works as Ford (1971) and Huebner (1971).

15. Hand and Slocum (1970)

16. A classic leader in the Group Dynamics movement was Kurt Lewin. The reader is directed to the work of Lewin (1947) for an examination of the transition from the "trait" approach to leadership to the behavioural approach.

17. Bowers and Seashore (1966) pg 239

18. The study by Butterfield (1972) may be of particular relevance

in that he attempted to evaluate the leadership theories of Mann (1965) Bowers and Seashore (1966) Katz and Kahn (1966), and Likert (1967). Butterfield found all theories to have some predictive capacities at higher organizational levels, but not at lower levels.

19. The essential dimension of difference between the groups was the locus of authority. In the autocratic mode of operation, all policy was determined by the leader, particular work tasks were designed by him, and he remained aloof from active group participation. The democratic leader encouraged participation in decision-making, tried to be a regular group member in spirit, and allowed group members a high degree of freedom in selecting their own tasks. In the laissez-faire mode, participation by the leader in any form was minimized.

20. Anderson (1963) pp 160.

21. "Consideration" was equated to behaviour indicating friendship, mutual respect and warmth in interpersonal relationships.

22. "Initiating Structure" was described as the extent to which the supervisor organized and defined the pattern of relationships between himself and the members of his work group.

23. In their model of "The Managerial Grid", Blake and Mouton (1964) propose two dimensions of leadership behaviour: "concern for production", and "concern for people". The "concern for Production" dimension might be considered a hybrid of the "task-orientation" and "initiating structure" concepts already

discussed. "Concern for people" may be equated with "consideration".

24. Stogdill (1950) pg 4

25. Bennis (1960 pg 261

26. Jenkins (1947) pg 75

27. Hemphill (1950) pg 225

28. McGregor (1967) pg 5

28. In this regard, Hersey and Blanchard (1974) follow the work of Reddin (1970), who added an "effectiveness" dimension to Blake and Moutons (1964) Managerial Grid.

30. Hersey and Blanchard (1974) pg 27

31. Fiedler's ordering of the relative favourableness of the variables is: leader-member relations, task structure, and then leader position-power. Further research may be required to confirm the relative favourableness of these variables for different types of leaders.

32. The ranking used by Fiedler (1968) is in terms of median correlation from the studies on the 50 sets of groups surveyed in his work.

33. "Interacting" was defined by Fiedler (1967) as "requiring close co-ordination of several members in the performance of the primary task. The ability of one member to perform his job

may depend on the fact that another member has first completed his share of the task". (Fiedler, 1967, pg 18)

34. Fiedler (1967) defines a "Counteracting group" as one which consisted of "individuals who are working together for the purpose of negotiating and reconciling conflicting opinions and purposes. Each individual, to a greater or lesser extent, works at achieving his own parties ends at the expense of another." (Fiedler, 1967, pg 20)

35. "Coacting groups" are defined as those several individuals involved themselves in the task at the same time.

36. Fleishman, Harris and Burt (1955) pg 58

37. Job attitudes referred to by Porter and Lawler (1965) included morale studies. In this case, specific attitude questions were asked about employee opinions of the organization supervisors, working conditions and other elements connected with the employees job situation.

38. Behaviours considered by the Porter and Lawler (1965) survey included performance and output rates, performance ratings, turnover rates, absenteeism, accident rates and employee grievances.

39. These two components accounted for over 80% of the variance in the performance norms of the work group.

40. For the sake of concision, the variables will generally be referred to by their abbreviations in the remainder of the

discussion.

41. The salary system operating within the organization at the time involved a pay grid in which the pay range for a particular position was divided into a number of steps or 'increments'. Progression up the pay scale was on the basis of satisfactory performance and individuals usually received a single increment annually. In cases of exceptional performance, it was possible for multiple increments to be awarded. The number of multiple increments the subject had received over the past five years was therefore taken as an indicator of his performance over that period.

It must be noted, however, that the maximum salary level for a particular position represented a ceiling on the individuals salary in that position (except for general reviews in the salary structure because of economic adjustments, position reclassifications, or changes of position). The measure is therefore invalid for that portion of the population who had received the salary maxima for their positions.

42. The use of financial budget as a criterion was an attempt to gain some equivalency with managerial success indicators in the private sector, such as sales volume and the financial size of the enterprise. Because of the organizational accounting system, however, the degree of control an individual has over his reported budget, and the size of the budget he may influence indirectly, both lend room for inaccuracy in measuring the criterion. The budget figure provided was

transformed by the use of Naperian Logrithms.

43. This question may be biased in favour of line managers, as opposed to staff managers. The Naperian logrithm of the staff size reported was used in data manipulation.

44. It was assumed that the frequency of an individual's contact with his organization's Chief Executive Officer (Deputy Minister) was an indicator of his success. The measure, however, may be biased in favour of small organizations or those with flat organizational structures. The scaling of response to this question was:

Never	0
Once or twice a year	1
Three or four times a year	2
Once or twice a month	3
Once or twice a week	4
Daily	5

45. The annual performance appraisal form in use throughout the Alberta Public Service at the time (P.A.O. 5) contained a number of scales relating to the individual's quantity and quality of performance, attitude, initiative, personal factors and supervisory ability. The supervisory ability scale consisted of a four-unit scale with ratings of "poor", "marginal","good" and "very good". Each scale unit consisted of four points (boxes) so that the net effect was a 16 point Likert scale. The "poor" and "marginal" unit were not used in the responses to this question, hence scaling was from "good 1" to "very good 4". Most respondents, however, did not complete this question since it involved reference to

their personnel file, which may not have been readily accessible. In order to obtain adequate information on the sample in this area, indirect channels were used by the author to solicit the information in reference to a significant sample size.

46. The training programs referred to formed a series of: "Introduction to Supervision", "Supervisory Development", "Middle Management" and "Senior Management". While each program had its own training objectives which may have appealed to individuals, independent of their managerial position, the status connotations of the program hierarchy was used in this case as a success indicator.

47. A copy of the instrument is included as Appendix D to this thesis.

48. Of the 65 respondents, only 7 were female. This represented an approximate proportion of the number of women in managerial positions within the organization. The number was too small, however, to offer statistically significant analysis on the differences between male and female managers, and hence the variable was dropped from further consideration.

49. Only six of the respondents reported a marital status of other than "married", hence this variable was also omitted from further analysis.

50. It should be noted that not all possible relationships between the variables will be examined, since all subjects did not

receive all questionnaires. A detailed description of the distribution scheme for the instruments is given in Chapter VII.

51. Since LEVELSUP indicates the hierarchial distance between the individual and his Deputy Minister, it is used as a negative indicator of success. The greater the number of echelons between the two individuals, the less successful would the individual be.

52. For a brief description of factor analysis, refer to Appendix A-1.

53. The general format used for regression equations includes the values of the standard errors of variables written beneath the variable itself. For a brief description of multiple regression, refer to Appendix A-2.

54. The correlation table for the Thurstone scales not proposed to be related to the success indicators is included in Appendix C-1.

55. The only scale on the Bass Orientation Inventory not predicted as relating to success was TASK-ORI. Correlations between scores on this scale and the success and demographic variables are shown in Appendix C-1.

56. Correlation between the other scales on the Thomas instrument and the demographic and success variables are shown in Appendix C-2.

57. Appendix C-3 shows the correlations between the other scales on Shutz's FIRO-B and the demographic and success variables.

58. While normally the profile of a series of Likert scales is used to represent the organization's climate, a single index (consisting of the algebraic sum of the indices along eighteen subscales) can be used to refer to the degree to which the organization conforms to System IV.

59. The Litwin and Stringer scales which were not predicted to relate to success are reproduced in Appendix C-4.

60. Correlations between the COLL (collaborations) and COOP (cooperative) scales on the Friedlander instrument and the various demographic and success indicator are shown in Appendix C-4.

61. Responses to questions on the supplementary questionnaire which were not significantly related to the success variables are shown in Appendix C-5. This table gives the correlations between the demographic and success variables and the remaining organizational characteristics.

62. This relationship may be the result of bias in the criteria in that the components MULTINCR and PROMOTES both specified time frames which prejudiced the results for individuals who had been in the organization for less than five or ten years.

BIBLIOGRAPHY

Adams, J.S.
1965 "Inequity in Social Exchange" in L. Berkowitz (ed) Advances in Experimental Social Psychology, Vol 2: New York: Academic Press. pp. 267-299.

Adorno, T.W., E. Frenkel-Brunswick, D.H. Levinson and R.N. Standford
1950 The Authoritarian Personality. New York: Harper.

Alfreder, Clayton P.
1971 "Effects of Individual, Group, and Intergroup Relations on Attitudes Toward a Management Development Program." Journal of Applied Psychology, 55:50-54.

Amir, Yehuda, Yacov Kovarsky and Shlomo Sharan
1970 "Peer Nominations as a Predictor of Multistage Promotions in a Ramified Organization." Journal of Applied Psychology, 54:462-469.

Anastasi, Anne.
1968 Psychological Testing. Toronto, MacMillan Company.

Anderson, Harold H. and Helen M. Brewer
1945 "Studies of Teachers' Classroom Personalities: I: Dominative and Socially Integrative Behavior of Kindergarten Teachers." Applied Psychology Monograph No. 6. Stanford University.

Anderson, Lynn R.
1966 "Leadership Behaviour, Member Attitudes, and Task Performance of Intercultural Discussion Groups." Journal of Social Psychology, 69:305-319.

_____ and Fred E. Fiedler
1964 "The Effect of Participatory and Supervisory Leadership on Group Creativity." Journal of Applied Psychology, 48:227-236.

Anderson, R.C.
1965 "Learning in Discussions: A Resume of the Authoritarian-Democratic Studies." In W.W. Charters Jr. and N.L. Gage (eds): Readings in the Social Psychology of Education. Boston: Allyn and Bacon.

Archibald, Kathleen
1970 Sex and the Public Service. Ottawa: Queens Printer.

Argyle, Michael, Godfrey Gardner and Frank Ciofi
1957 "The Measurement of Supervisory Methods." Human Relations, 10:295-313.

Argyle, Michael, Godfrey Gardner and Frank Cioffi
1958 "Supervisory Methods Related to Productivity, Absenteeism and Labour Turnover." Human Relations, 11:23-39.

Argyris, Chris
1962 Interpersonal Competence and Organizational Effectiveness. Homewood, Ill. : Irwin Dorsey.

Armstrong, Thomas B.
1971 "Job Content and Context Factors Related to Satisfaction for Different Occupational Levels." Journal of Applied Psychology, 55:57-65.

Aronoff, Joel and George H. Litwin
1971 "Achievement Motivation Training and Executive Advancement." Journal of Applied Behavioral Science, 7:215-229.

Asquith, R.H. and D.E. Hedlund
1960 "Laboratory Training and Supervisory Attitudes." Psychological Reports, 20:618.

Bachman, J.G., C.G. Smith and J.A. Slesinger
1966 "Control, Performance and Satisfaction: an Analysis of Structure and Individual Effects." Journal of Personality and Social Psychology, 4:127-136.

Bailey, Joseph C.
1967 "Clues for Success in the President's Job." Harvard Business Review, 45.3:97-104.

Bailey, J.K.
1956 "The Essential Qualities of a Good Supervisor: A Case Study." Personnel, 32:31-326.

Bales, Robert A.
1950 "A Set of Categories for the Analysis of Small Group Interaction." American Sociological Review, 15:257-263.

_____ and Fred L. Strodtbeck
1951 "Phases in Group Problem-Solving." Journal of Abnormal and Social Psychology, 46:485-495.

Bass, Bernard M.
1949 "An Analysis of the Leaderless Group Discussion." Journal of Personnel Psychology, 33:527-537.

_____
1961 "Some Aspects of Attempted, Successful, and Effective Leadership." Journal of Applied Psychology, 45:120-122.

_____
1962 "Reactions to TWELVE ANGRY MEN as a Measure of Sensitivity Training." Journal of Applied Psychology, 46:120-124.

Bass, Bernard M.
1962 The Orientation Inventory: Manual (research edition) Palo Alto: Consulting Psychologists Press, Inc.

_____ and Richard H. Franke
1972 "Societal Influences on Student Perceptions of How to Succeed in Organizations: a cross-national analysis." Journal of Applied Psychology, 56:312-318.

Baumgartel, Howard
1957 "Leadership Style as a Variable in Research Administration." Administrative Science Quarterly, 2:344-360.

Bavelas, A
1964 "Leadership: Man and Function." in H.J. Leavitt and L.R. Pondy (eds.) Chicago: University of Chicago Press.

Beer, Michael
1966 Leadership, Employee Needs and Motivation. Columbus, Ohio: Ohio State University Bureau of Business Research.

Bennis, Warren G.
1960 "Leadership Theory and Administrative Behaviour: The problem of Authority." Administrative Science Quarterly.

_____ and Herbert A Shepard
1965 "A Theory of Group Development." Human Relations, 9:415-457.

Berger, Emanual M.
1952 "The Relation Between Expressed Acceptance of Self and Expressed Acceptance of Others." Journal of Abnormal and Social Psychology, 47:778-782.

Besco, Robert O. and C.H. Lawshe
1955 "Foreman Leadership as Perceived by Supervisors and Subordinates." Personnel Psychology, 12:573-582.

Bills, R.E.
1951 "Self Concept and Rorschach Signs of Depression." Journal of Consulting Psychology, 15:135-137.

Bird, C.
1940 Social Psychology. New York: Appleton-Century.

Bird, M.
1969 "Changes in Work Behaviour Following Supervisory Training." Journal of Management Studies, 6:331-345.

Blake, R.R. and J.S. Monton
1964 The Managerial Grid. Houston: Gulf Publishing Co.

Blankenship, L.V. and R.E. Miles
1968 "Organizational Structure and Managerial Decision Behaviour." Administrative Science Quarterly, 13:106-120.

Blood, Milton R.
1969 "Work Values and Job Satisfaction." Journal of Applied Psychology." 53:456-459.

_____ and Charles L. Hulin
1967 "Alienation, Environmental Characteristics, and Worker Response." Journal of Applied Psychology. 51:284-290.

Bloom, Robert and John R. Barry
1967 "Determinants of Work Attitudes Among Negroes." Journal of Applied Psychology. 51:291-294.

Bons, Paul M., Alan R. Bass and S.S. Komorita
1970 "Changes in Leadership Style as a Function of Military Experience and Type of Command." Personnel Psychology. 23:551-568.

Borgatta, E.F.
1954 "Analysis of Social Interaction and Sociometric Perception." Sociometry. 17:7-32.

Bouchard, Thomas J. Jr.
1972 "Training, Motivation and Personality as Determinants of the Effectiveness of Brainstorming Groups and Individuals." Journal of Applied Psychology, 56:324-332.

_____ and Melana Hare
1970 "Size, Performance and Potential in Brainstorming Groups." Journal of Applied Psychology. 54:51-55.

Bowers, D.G. and S.E. Seashore
1966 "Predicting Organizational Effectiveness with a Four-Factor Theory of Leadership." Administrative Science Quarterly. 11:238-263.

Bradford, L., K. Benne, and J. Gibb
1964 T-Group and Laboratory Method. Washington, D.C.: National Training Laboratories.

Bray, Douglas G. and D.L. Grant
1966 "The Assessment Centre in the Measurement of Potential for Business Management." Psychological Monographs, Applied and General. 80.17.

Bryan, Judith F. and Edwin A. Locke
1967 "Goal Setting as a Means of Increasing Motivation." Journal of Applied Psychology. 51:274-277.

Bullock, Robert P.
1952 Social Factors Related to Job Satisfaction. Columbus, Ohio: Bureau of Business Research, The Ohio State University.

Burke, Richard L. and Warren G. Bennis
1961 "Changes in Perception of Self and Others During Human Relations Training." Human Relations. 14:165-182.

Butterfield, D.S.
1972 "Leadership and Organizational Effectiveness." In Mott, P.E., The Characteristics of Effective Organizations. New York: Harper and Row. pp. 117-149.

Cabianca, William Angelo
1968 "The Effects of a T-Group Laboratory Experience on Self-Esteem, Needs and Attitudes of Student Teachers." Dissertation Abstracts. 28A:5014.

Carroll, Stephen J. and Allan N. Nash
1970 "Some Personal and Situational Correlates of Reactions to Management Development Training." Academy of Management Journal. 13:187-195.

Carron, T.J.
1964 "Human Relations Training and Attitude Change: a Vector Analysis." Personnel Psychology. 17:403-424.

Carter, Launor, William Haythorn, Beatrice Shriver and John Lanzetta
1950 "The Behaviour of Leaders and Other Group Members." Journal of Abnormal and Social Psychology. 46:589-595.

Cartwright, Dorwin and Alvin Zander (eds.)
1968 Group Dynamics: Research and Theory. New York: Harper and Row.

Caunt, J. Brian
1971 Evaluation of Supervisory Training. Unpublished thesis. University of Alberta.

Cherrington, David J., H. Joseph Reitz and William E. Scott, Jr.
1971 "Effects of Reward and Contingent Reinforcement on Satisfaction and Task Performance." Journal of Applied Psychology. 55:531-536.

Cleland, Charles C. and Ronald Nemen
1966 "Experience and Executive Motivation." Personnel. 43:61-63.

Gleyan, W.A. and F.E. Fiedler
1956 "Interpersonal Perceptions of Open-Hearth Foremen and Steel Production." Journal of Applied Psychology. 40:113-117.

Comrey, Andrew L., Wallace High and Robert C. Wilson
1955 "Factors Influencing Organizational Effectiveness: IV: A Survey of Aircraft Workers." Personnel Psychology. 8:79-90.

Cummin, Pearson C.
1967 "TAT Correlates of Executive Performance." Journal of Applied Psychology, 51:78-81.

Cummins, Robert C.
1971 "Relationship of Initiating Structure and Job Performance as Moderated by Consideration." Journal of Applied Psychology, 55:489-490.

Dawson, Jack E., Lawrence A Messe and James L Phillips
1972 "Effects of Instructor-Leader Behaviour on Student Performance." Journal of Applied Psychology, 56:369-376.

De Nelsky, Garland Y. and Michael G. McKee
1969 "Prediction of Job Performance from Assessment Reports: Use of a Modified Q-Sort Technique to Expand Predictor and Criterion Variance." Journal of Applied Psychology, 53:439-445.

De Pasquale, John A. and Richard A Lange
1971 "Job-Hopping and the MBA." Harvard Business Review, 49.6:4-13.

Dillon, Peter C., William K. Graham and Andrea L. Aidells
1972 "Brainstorming on a 'Hot' Problem: Effects of Training and Practice on Individual and Group Performance." Journal of Applied Psychology, 56:487-490.

Dodd, W.E., H.B. Wollowick and W.J. McNamara
1970 "Task Difficulty as a Moderator of Long-Range Prediction." Journal of Applied Psychology, 54:265-270.

Draper, N.R. and H. Smith
1966 Applied Regression Analysis. New York: Wiley and Sons.

Dunnette, Marvin D.
1969 "People Feeling: Joy, More Joy, and the 'Slough of Despond'." Journal of Applied Behavioural Science, 5:25-44.

ElSalmi, A.M. and L.L. Cummings
1968 "Managers' Perceptions of Needs and Need Satisfactions as a Function of Interactions Among Organizational Variables." Personnel Psychology, 21:465-477.

Elbert, A.J.
1966 "Factor Analysis of Work-Relevant Need Statements in Two Populations." Unpublished Masters Thesis. Bowling Green State University.

Engel, Gloria V.
1970 "Professional Autonomy and Bureaucratic Organization." Administrative Science Quarterly, 15:12-21.

Erickson, Jeanne M., William M. Pugh and E.K. Eric Gunderson
1972 "Status Congruency as a Predictor of Job Satisfaction and Life Stress." Journal of Applied Psychology, 56:323-325.

Etzioni, Amitai
1959 "Authority, structure and Organizational Effectiveness." Administrative Science Quarterly, 4:43-67.

_____ (ed.)
1960 Readings on Modern Organizations. Englewood Cliffs, N.J.: Prentice-Hall.

Evans, Martin G.
1969 "Convergent and Discriminant Validities Between the Cornell Job Description Index and a Measure of Goal Attainment." Journal of Applied Psychology, 53:192-198.

_____
1974 "A Leader's Ability to Differentiate the Subordinate's Perception of the Leader and the Subordinate's Performance." Personnel Psychology, 26:385-91.

_____ and Larry Molinari
1970 "Flanagan, Piece-Rate Overpayment and Job Security." Journal of Applied Psychology, 54:164-171.

Farris, George F. and Francis G. Lim Jr.
1969 "Effects of Performance on Leadership, Cohesiveness, Influence, and Subsequent Performance." Journal of Applied Psychology, 53:490-497.

Fenelon, James R. and Edwin I Megargee
1971 "Influence of Race on the Manifestation of Leadership." Journal of Applied Psychology, 55:353-358.

Fiedler, Fred E.
1954 "Assumed Similarity Measures as Predictors of Team Effectiveness." Journal of Abnormal and Social Psychology, 49:381-388.

_____
1955 "The Influence of Leader-Keymen Relations on Combat Crew Effectiveness." Journal of Abnormal and Social Psychology, 51:227-235.

_____
1958 Leader Attitudes and Group Effectiveness. Urbana: University of Illinois Press.

Fiedler, Fred E.
1962 "Leader Activity, Group Climate and Group Creativity." Journal of Abnormal and Social Psychology, 65:308-318.

_____
1968 "Personality and Situational Determinants of Leadership Effectiveness." In Dorwin Cartwright and Alvin Zander (eds) Group Dynamics: Research and Theory. New York: Harper and Row. pp. 362-380.

_____, W. Meuwese and S. Oonk
1961 "Performance of Laboratory Tasks Requiring Group Creativity." Acta Psychologia, 18:100-119.

Finn, R.H. and Sang M. Lee
1972 "Salary Equity: Its Determination, Analysis and Correlates." Journal of Applied Psychology, 56:283-292.

Fleishman, Edwin A.
1953a "Leadership Climate, Human Relations Training and Supervisory Behavior." Personnel Psychology, 6:205-222.

_____
1953b "The Measurement of Leadership Attitudes in Industry." Journal of Applied Psychology, 37:153-158.

_____
1969 Manual for the Leadership Opinion Questionnaire (Revised Edition). Chicago, Ill.: Science Research Associates.

_____, E. Harris and H. Burtt
1955 Leadership and Supervision in Industry: Evaluation of a Supervisory Training Program. Columbus, Ohio: Ohio State Bureau of Educational Research.

_____ and J. Simmons
1970 "Relationship Between Leadership Patterns and Effectiveness Ratings Among Israeli Foremen." Personnel Psychology, 23:169-172.

Ford, Gary R.
1971 "T-Group Participation and Change in Self-Orientation." Unpublished Thesis, University of Alberta.

Fouriezos, N., M. Hutt and H. Guetzkow
1950 "Measurement of Self-Oriented Needs in Discussion Groups." Journal of Abnormal and Social Psychology, 45:682-690.

Friedlander, Frank
1964 "Job Characteristics as Satisfiers and Dissatisfiers." Journal of Applied Psychology, 48:388-392.

Friedlander, Frank and Stuart Greenberg
1971 "Effects of Job Attitudes, Training and Organizational Climate on Performance of the Hard-Core Unemployed." Journal of Applied Psychology, 55:287-295.

Frye, Roland L.
1965 "Relationship Between Rated Leaders and the Traits Assigned to These Leaders." Journal of Social Psychology, 66:95-99.

Gassner, Suzanne M., Jerome Gold and Alvin M. Snadowsky
1965 "Changes in the Phenomenal Field as a Result of Human Relations Training." Journal of Psychology, 59:33-41.

Gavin, J.F.
1970 "Ability, Effort, and Role Perception as Antecedents of Job Performance." American Psychological Association: Experimental Publication System, Ms. No. 150A.

Gekoski, Norman and Solomon L. Schwartz
1966 The Supervisory Index. Chicago: Science Research Associates.

Georgopoulos, Basil S., Gerald M. Mahoney and Nyle W. Jones
1957 "A Path-Goal Approach to Productivity." Journal of Applied Psychology, 41:345-353.

Ghiselli, Edwin E.
1963 "Interaction of Traits and Motivational Factors in the Determination of the Success of Managers." Journal of Applied Psychology, 47:142-147.

Gibb, C.A.
1954 "Leadership." In G. Lindzey (ed) Handbook of Social Psychology. Reading, Mass: Addison-Wesley.

Godfrey, E.P., E.E. Frieder and R.M. Hall
1959 Boards, Management and Company Success. Danville, Ill: Interstate Printers and Publishers.

Golembiewski, Robert T., and Stokes B. Carrigan
1970 "The Persistence of Laboratory-Induced Changes in Organizational Styles." Administrative Science Quarterly, 15:330-340.

Goodman, Paul S., Jerry H. Rose and John E. Furzon
1970 "Comparison of Motivational Antecedents of the Work Performance of Scientists and Engineers." Journal of Applied Psychology, 54:491-495.

Goodstadt, Barry and David Kipnis
1970 "Situational Influences on the Use of Power." Journal of Applied Psychology, 54:201-207.

Gouldner, A.W. (ed)
1950 Studies in Leadership. New York: Harper.

_____
1965 Studies in Leadership. New York: Russell and Russell.

Graen, George
1969 "Instrumentality Theory of Work Motivation: Some Experimental Results and Suggested Modification." Journal of Applied Psychology, Monograph 53.2.2.

_____, James Burdeane Orris and Kenneth M. Alvares
1971 "Contingency Model of Leadership Effectiveness: Some Experimental Results." Journal of Applied Psychology, 55:203-210.

_____, Fred Dansereau, Jr., and Takao Minami.
1972 "Dysfunctional Leadership Styles." Organizational Behavior and Human Performance. 7:216-236.

Graham, W.K.
1973 "Leader Behavior, Esteem for Least Preferred Co-Workers and Group Performance." Journal of Social Psychology, 90:59-66.

Grant, Donald L., Walter Katkovsky and Douglas W. Bray
1967 "Contributions of Projective Techniques to Assessment of Managerial Potential." Journal of Applied Psychology, 51:226-232.

Greene, Charles N. and Dennis W. Organ
1973 "An Evaluation of Causal Models Linking the Received Role with Job Satisfaction." Administrative Science Quarterly, 18:95-103.

Greenwood, John M. and Walter J. McNamara
1967 "Inter-rater Reliability in Situational Tests." Journal of Applied Psychology, 51:101-106.

Grubel, Herbert G.
1969 "The M.B.A. Education Myth." Journal of Business, University of Chicago, 42:42-49.

Gutteridge, Thomas G.
1973 "Predicting Career Success of Graduate Business School Alumni." Academy of Management Journal, 16:129-137.

Hackman, J. Richard and L.W. Porter
1968 "Expectancy Theory Predictions of Work Effectiveness." Organizational Behavior and Human Performance, 3:417-426.

Hackman, J. Richard and Edward E. Lawler III
1971 "Employee Reactions to Job Characteristics." Journal of Applied Psychology, 55:259-286.

Hall, W.B. and D.W. McKinnon
1969 "Personality Inventory Correlates of Creativity Among Architects." Journal of Applied Psychology, 53:322-326.

Halpin, A.W.
1957a "Leader Behavior and Effectiveness of Aircraft Commanders." In Stogdill, R.M. and Coons, A.E. (eds) Leader Behavior: Its Description and Measurement. Columbus, Ohio: Bureau of Business Research, Ohio State University.

_____ and J. Winer
1957b "A Factorial Study of the Leader Behavior Description Questionnaire." In R.M. Stogdill and A.E. Coons (eds) Leader Behavior: Its Description and Measurement. (Research Monograph No. 88, Columbus, Ohio: Bureau of Business Research, the Ohio State University) pp. 39-51.

Hand, Herbert H. and John W. Slocum, Jr.
1970 "Human Relations Training for Middle Management: A Field Experiment." Academy of Management Journal, 13:403-410.

_____ and John W. Slocum
1972 "A Longitudinal Study of the Effects of a Human Relations Training Program on Managerial Effectiveness." Journal of Applied Psychology, 56:412-417.

Harding, F.C. and R.A. Bottenberg
1961 "Effects of Personal Characteristics on Relationships Between Attitudes and Job Performance." Journal of Applied Psychology, 45:428-430.

Harman, H.H.
1960 "Modern Factor Analysis." Chicago: University of Chicago Press.

Harris, Edwin F. and Edwin A. Fleishman
1955 "Human Relations Training and the Stability of Leadership Patterns." Journal of Applied Psychology, 39:20-27.

Harrison, Roger
1966 "Cognitive Change and Participation in a Sensitivity Training Laboratory." Journal of Consulting Psychology, 30:517-520.

Hemphill, John K.
1949 "The Leader and His Group." Educational Research Bulletin, 28:225-229.

Hemphill, John K.
1950 "Relations Between the Size of the Group and the Behavior of 'Superior' Leaders." Journal of Social Psychology, 32:11-22.

1957 "Leader Behavior Associated with the Administrative Reputations of College Departments." In Stogdill, R.M. and Coons, A.E. (eds) Leader Behavior: Its Description and Measurement (Research Monograph No. 88, Columbus, Ohio: Bureau of Business Research, the Ohio State University) pp. 6-38.

Heneman, Herbert G. III and Donald P. Schwab
1972 "Evaluation of Research on Expectancy Theory Predictions of Employee Performance." Psychological Bulletin, 78:1-19.

Hersey, Paul and Kenneth H. Blanchard
1974 "So You Want to Know Your Leadership Style?" Training and Development Journal, 28.2:22-37.

Herzberg, Frederick, Bernard Mauser and Barbara Snyderman
1959 The Motivation to Work. New York: Wiley.

Hill, Walter W.
1969 "A Situational Approach to Leadership Effectiveness." Journal of Applied Psychology, 53:513-517.

Hill, Winston W. and Wendell L. French
1967 "Perceptions of the Power of Department Chairmen by Professors." Administrative Science Quarterly, 11: 548-574.

Hills, R.J.
1963 "The Representative Function: Neglected Dimension of Leadership Behavior." Administrative Science Quarterly, 8:83-101.

Himrichs, J.E.
1969 "Correlates of Employee Evaluation of Pay Increases." Journal of Applied Psychology, 53:481-489.

Hobert, Robert and Marvin D. Dunnette
1967 "Development of Moderator Variables to Enhance the Prediction of Managerial Effectiveness." Journal of Applied Psychology, 51:50-64.

Hollander, E.P.
1965 "Validity of Peer Nominations in Predicting a Distant Performance Criteria." Journal of Applied Psychology, 49:434-438.

Hornaday, John A. and John Aboud
1971 "Characteristics of Successful Entrepreneurs." Personnel Psychology, 24:141-153.

Hotelling, H.
1933 "Analysis of a Complex of Statistical Variables into Principle Components." Journal of Educational Psychology, 24:417-441, 498-520.

House, Robert J.
1968 "Leadership Training: Some Dysfunctional Consequences." Administrative Science Quarterly, 12:556-571.

_____, Alan C. Filley and Damodar N. Gujarati
1971 "Leadership Style, Hierarchical Influence, and the Satisfaction of Subordinate Role Expectations: a Test of Likert's Influence Proposition." Journal of Applied Psychology, 55: 422-432.

Huebner, O.
1971 "Attitude Change as a Result of T-Group Participation." Unpublished Thesis, University of Alberta.

Hulin, Charles L.
1969 "Sources of Variation in Job and Life Satisfactions: the Role of Community- and Job-Related Variables." Journal of Applied Psychology, 53:279-291.

Hundal, P.S.
1971 "A Study of Entrepreneurial Motivation: Comparison of Fast- and Slow-Progressing Small-Scale Industrial Entrepreneurs in Punjab, India." Journal of Applied Psychology, 55:317-323.

Hunt, Raymond G. and Gary M. Fichtman
1969 "'Counselings' of Employees by Work Supervisors: Concepts, Attributes and Practices in a White-Collar Organization." Journal of Counselling Psychology, 16:81-86.

Hurwitz, Jacob I., Alvin F. Zander and Bernard Hymovitch
1968 "Some Effects of Power on the Relations Among Group Members." In Dorwin Cartwright and Alvin Zander (eds.) Group Dynamics: Research and Theory. New York: Harper and Row, pp. 291-297.

Iris, Benjamin and Gerald V. Barrett
1972 "Some Relations Between Job and Life Satisfaction and Job Importance." Journal of Applied Psychology, 56: 301-304.

Ivancevich, John M. and James M. Donnelly
1970 "Leader Influence and Performance." Personnel Psychology, 23:539-549.

Jenkins, William O.
1947 "A Review of Leadership Studies with Particular Reference to Military Problems." Psychological Bulletin, 44:75.

Jones, Edward W. Jr.
1973 "What It's Like to be a Black Manager." Harvard Business Review, 51:108-116.

Joreskog, K.G. and M. van Thillo
1971 New Rapid Algorithms for Factor Analysis by Unweighed Least Squares, Generalized Least Squares and Maximum Likelihood. Research Memorandum 71-5. Princeton, N.J: Educational Testing Service.

Julian, J.W., D.W. Bishop and Fred E. Fiedler
1966 "Quasi-Therapeutic Effects of Intergroup Competition." Journal of Personality and Social Psychology, 3: 321-327.

Kahn, Robert L.
1956 "The Prediction of Productivity." Journal of Social Issues. 12:41-49.

_____ and D. Katz
1960 "Leadership Practices in Relation to Productivity and Morale." In D. Cartwright and A. Zander (eds) Group Dynamics: Research and Theory. New York: Harper and Row.

_____, D.M. Wolfe, R.P. Quinn, J.D. Snoek and R.A. Rosenthal
1964 Organizational Stress: Studies in Role Conflict and Ambiquity. New York: Wiley.

Kassarjian, H.H.
1965 "Social Character and Sensitivity Training." Journal of Applied Behavioral Science. 1:163-204.

Katz, Daniel
1964 "The Motivational Basis of Organizational Behavior." In W.E. Scott and L.L. Cummings (eds) Readings in Organizational Behavior and Human Performance. Homewood, Ill: Richard D. Irwin, 973. pp.127-129.

_____ and R.L. Kahn
1966 The Social Psychology of Organizations. New York: Wiley.

_____, I. Sarnoff and C. McClintock
1956 "Ego Defence and Attitude Change." Human Relations, 9:27-46.

_____ and E. Stotland
1959 "Preliminary Statement to a Theory of Attitudes." In

Koch, S. (ed) Psychology: A Study of Science, Vol. III New York: McGraw Hill.

Katz, Elihu and S.N. Eisenstadt
1961 "Bureaucracy and its Clientale - a Case Study." Administrative Science Quarterly. 5:235-271.

Katzell, Raymond A. Richard S. Barrett, Donald H. Vann and John M. Hogan
1968 "Organizational Correlates of Executive Roles." Journal of Applied Psychology. 52:22-28.

_____ and Bradsay C. Parker
1961 "Job Satisfaction, Job Performance, and Situational Characteristics." Journal of Applied Psychology, 45: 65-72.

Kavanagh, Michael J., Arthur C. MacKinney and Leroy Wolins
1970 "Satisfaction and Morale of Foremen as a Function of Middle Managers' Performance." Journal of Applied Psychology. 54:174-176.

Kelly, G.A.
1955 The Psychology of Personal Constructs. New York: W.W. Norton Co.

Kernan, John Paul
1961 "Laboratory Human Relations Training - Its Effect on Five 'Personality' of Supervisory Engineers." Dissertation Abstracts. 22:665-666.

Kipnis, David and Joseph Cosentino
1969 "Use of Leadership Powers in Industry." Journal of Applied Psychology. 53:460-466.

Kirscht, J.P., E.M. Erdahl and M. Haire
1959 "Some Factors in the Selection of Leaders by Members of Small Groups." Journal of Abnormal and Social Psychology. 58:406-408.

Klubeck, Stanley and Bernard M. Bass
1954 "Differential Effect of Training on Persons of Different Leadership Status." Human Relations. 7:69-72.

Knickerbocker, Irving
1948 "Leadership: a Conception and Some Implications." Journal of Social Issues. 4:3-20.

Korman, Abraham K.
1967 "Relevance of Personal Need Satisfaction for Overall Satisfaction as a Function of Self-Esteem." Journal of Applied Psychology. 51:533-538.

Korman, Abraham K.
1971a "Expectancies as Determinants of Performance." Journal of Applied Psychology, 55:218-222.

1971b "Environmental Ambiguity and Locus of Control as Interactive Influences on Satisfaction." Journal of Applied Psychology, 55:339-342.

Korten, David C.
1962 "Situational Determinants of Leadership Structure." Journal of Conflict Resolution, 6:222-235.

Lake, Dale G., Matthew B. Miles, and Ralph B. Earle, Jr. (eds)
1973 Measuring Human Behaviour: Tools for the Assessment of Social Functioning. New York: Teachers College Press.

Landsberger, Henry A.
1961 "The Horizontal Dimension in Bureaucracy." Administrative Science Quarterly, 6:299-332.

Landy, Frank J.
1971 "Motivational Type and the Satisfaction-Performance Relationship." Journal of Applied Psychology, 55:406-411.

Latona, Joseph C.
1972 "Leadership Styles and Productivity: A Review and Comparative Analysis." Training and Development Journal, 26:2-10.

Laurent, Harry
1970 "Cross-Cultural Cross-Validation of Empirically Validated Tests." Journal of Applied Psychology, 54:417-423.

Lawler, Edward E. III
1966 "Ability as a Moderator of the Relationship Between Job Attitudes and Job Performance." Personnel Psychology, 19:153-164.

1968 "A Correlation-Causal Analysis of the Relationship Between Expectancy Attitudes and Job Performance." Journal of Applied Psychology, 52:462-468.

--- and D.T. Hall
1970 "Relationship of Job Characteristics to Job Involvement, Satisfaction and Intrinsic Motivation." Journal of Applied Psychology, 54:305-312.

--- and Lyman W. Porter
1967a "Antecedent Attitudes to Effective Managerial Performance." Organizational Behavior and Human Performance, 2:122-142.

Lawler, Edward E. III and Lyman W. Porter
1967b "The Effect of Performance on Job Satisfaction." Industrial Relations, 7:23.

_____ and Allen Tannenbaum
1968 "Managers' Attitudes Toward Interaction Episodes." Journal of Applied Psychology, 52:432-439.

Lefkowitz, Joel
1967 "Self Esteem of Industrial Workers." Journal of Applied Psychology, 51:521-528.

Leim, M.A., L.W. Shivinski and K.W. Grant
1972 "Identification of Middle Management Job Dimensions and Job Types in the Department of National Revenue (Customs and Excise) for Use in an Assessment Centre. Ottawa: Public Service Commission of Canada.

Lenski, G.
1961 The Religious Factor. New York: Doubleday.

Lewin, Kurt
1947 "Frontiers in Group Dynamics." Human Relations, 1:5-41.

_____, R. Lippitt and R. White
1939 "Patterns of Aggressive Behavior in Experimentally Created Climates." Journal of Social Psychology, 10:271-299.

Lichtman, Carl M.
1970 "Some Interpersonal Response Correlates of Organizational Rank." Journal of Applied Psychology, 54:77-80.

Likert, Rensis
1967 The Human Organization: Its Management and Value. New York: McGraw Hill.

Lippitt, R. and R. White
1943 "The 'Social Climate' of Children's Groups." In Baker, R.G., Kounin, J. and Wright, H. (eds.). Child Behavior and Development. New York: McGraw Hill, pp. 485-508.

Litwin, George H. and Robert A. Stringer, Jr.
1968 Motivation and Organizational Climate. Cambridge, Mass: Harvard University.

Livingstone, J. Sterling
1971 "The Myth of the Well-Educated Manager." Harvard Business Review, 49:79-89.

Lohmann, Karl, John H. Zenger and Irving R. Weschler
1959 "Some Perceptual Changes During Sensitivity Training." Journal of Educational Research, 53:3-11.

Lowin, A. and J.R. Craig
1968 "The Influence of Level of Performance on Managerial Style: an Experimental Object-Lesson in the Ambiguity of Correlation Data." Organizational Behavior and Human Performance, 3:440-458.

Mahoney, T.A., Jerdee, T.M. and A. Korman
1960 "An Experimental Evaluation of Management Development." Personnel Psychology, 13:81-98.

Maier, Norman R.F.
1953 "An Experimental Test of the Effect of Training on Discussion Leadership." Human Relations, 6:161-173.

_____ and Richard A. Maier
1957 "An Experimental Test of the Effects of 'Developmental' Versus 'Free' Discussions on the Quality of Group Decisions." Journal of Applied Psychology, 41:320-323.

_____, L. Richard Hoffman and William H. Read
1963 "Superior-Subordinate Communication: The Relative Effectiveness of Managers Who Held Their Subordinate's Positions." Personnel Psychology, 16:1-11.

Mann, F.C.
1965 "Toward an Understanding of the Leadership Role in Formal Organizations." In R. Dubin (ed) Leadership and Productivity: Chandler Press.

Marak, G.E.
1964 "The Evaluation of Leadership Structures." Sociometry, 27:174-182.

March, James G. and Herbert A. Simon
1958 Organizations. New York: Wiley.

Maslow, Abraham H.
1943 "A Theory of Human Motivation." Psychological Review, 50:370-396.

_____
1954 Motivation and Personality. New York: Harper and Bros.

McClelland, D.
1961 The Achieving Society. Princeton, New Jersey: Van Nostrand.

McClintock, C.G.
1958 "Personality Syndromes and Attitude Change." Journal of Personnel, 26:479-493.

McCormick, Ernest J., Paul R. Jeanneret and Robert C. Mecham
1972 "A Study of Job Characteristics and Job Dimensions as

Based on the Position Analysis Questionnaire (PAQ)." Journal of Applied Psychology. 56: 347-368.

McCurdy, Harold G. and Herbert W. Eber
1953 "Democratic Versus Authoritarian: A Further Investigation of Group Problem Solving." Journal of Personality, 22: 258-269.

McDermid, C.D.
1965 "Some Correlations of Creativity in Engineering Personnel." Journal of Applied Psychology. 49: 14-19.

McGregor, Douglas
1967 The Professional Manager. New York: McGraw Hill.

McKersie, Robert and Joseph Klaus
1966 "Success Patterns of MBA Graduates." Harvard Business School Bulletin. pp. 17-18.

McLennan, Kenneth
1969 "The Role of Organizational Expectations in Developing Managerial Manpower." Management of Personnel Quarterly. 8: 30-35.

Megargee, Edwin I.
1969 "Influence of Sex Roles on the Manifestation of Leadership." Journal of Applied Psychology. 53: 377-382.

Meignier, R. (ed.)
1961 Evaluation of Supervisory and Management Training Methods. Part 1: Organization for Economic Cooperation and Development.

Miles, M.B.
1965 "Changes During and Following Laboratory Training: A Clinical-Experimental Study." Journal of Applied Behavioral Science. 1: 215-242.

Minor, John B.
1970 "Executive and Personnel Interviews as Predictors of Consulting Success." Personnel Psychology. 23: 591-628.

1971 "Personality Tests as Predictors of Consulting Success." Personnel Psychology. 24: 191-202.

Mitchell, Terrance R.
1970 "Leader Complexity and Leadership Style." Journal of Personality and Social Psychology. 16: 166-174.

Mitchell, Vance F.
1970 "Need Satisfactions of Military Commanders and Staff." Journal of Applied Psychology. 54: 282-287.

Mitchell, Vance F. and Lyman W. Porter
1967 "Comparative Managerial Role Perceptions in Military and Business Hierarchies." Journal of Applied Psychology, 51:149-152.

Mockler, Robert J.
1971 "Situational Theory of Management." Harvard Business Review, 49.3:146-155.

Modlin, H.C. and Mildred Faris
1956 "Group Adaption and Integration in Psychiatric Team Practice." Psychiatry, 19:97-103.

Moon, C.G. and E. Hariton
1958 "Evaluating an Appraisal and Feedback Training Program." Personnel, 35:47-41.

Morris, C.G. and R.J. Hackman
1969 "Behavioral Correlates of Perceived Leadership." Journal of Personality and Social Psychology, 13:350-361.

Morrison, Donald F.
1967 Multivariate Statistical Methods. New York: McGraw Hill.

Mosvick, R.K.
1966 "An Experimental Evaluation of Two Modes of Motive Analysis Instruction in an Industrial Setting: a Study in Method." Unpublished Ph.D. Thesis, University of Minnesota.

Muder, M and A. Sterling
1963 "Threat, Attraction to Group and Need for Strong Leadership." Human Relations, 16:317-334.

Muller, H.P.
1970 "Relationships Between Time-Span of Discretion, Leadership Behavior and Fiedler's LPC Scores." Journal of Applied Psychology, 54:140-141.

Naylor, James C. and Jerry I. Dickinson
1969 "Task Structure, Work Structure and Team Performance." Journal of Applied Psychology, 53:167-177.

Neafey, Stanley M. and Milton R. Blood
1968 "Leadership Performance of Nursing Supervisors at Two Organizational Levels." Journal of Applied Psychology, 52:414-422.

Nie, Norman H., Dale H. Bent and C. Hadlai Hull
1970 Statistical Package for the Social Sciences. New York: McGraw Hill.

Oaklander, Harold and Edwin A Fleishman
1963 "Patterns of Leadership Related to Organizational Stress in Hospital Settings." Administrative Science Quarterly. 8:520-532.

O'Brien, Gordon E. and A.G. Owens
1969 "Effects of Organizational Structure on Correlations Between Member Attitudes and Group Productivity." Journal of Applied Psychology. 53:525-530.

O'Reilly, A.P.
1973 "The Supervisor and His Subordinates' Self-Actualization." Personnel Psychology. 26:81-85.

Osgood, C.E., G.A. Suci and P.H. Tannenbaum
1957 The Measurement of Meaning. Urbana: University of Illinois Press.

Oshry, Barry I. and Roger Harrison
1966 "Transfer from Here-and-Now to There-and-Then: Changes in Organizational Problem Diagnosis Stemming from T-Group Training." Journal of Applied Behavioral Science. 2:185-198.

Page, Richard H. and Elliot McGinnies
1959 "Comparison of Two Styles of Leadership in Small Group Discussion." Journal of Applied Psychology. 43:240-245.

Pallett, James E. and Donald P. Hoyt
1967 "An Empirical Approach to Criterion Specifications in General Business." Journal of Applied Psychology. 51: 175-180.

Patchen, Martin
1962 "Supervisory Methods and Group Performance Norms." Administrative Science Quarterly. 7:275-294.

Patton, Arch
1960 "How to Appraise Executive Performance." Harvard Business Review. 38:1,63-70.

Peabody, Robert L.
1961 "Perceptions of Organizational Authority: A Comparative Analysis." Administrative Science Quarterly. 6:463-482.

Pelz, Donald C.
1952 "Leadership Within a Hierarchial Organization." Journal of Social Issues. 7:3:49-55.

Perrow, Charles
1967 "A Framework for the Comparative Analysis of Organizations." American Sociological Review. 32:194-208.

Pfeiffner, J. William and Richard Heslin
1973 Instrumentation in Human Relations Training. Iowa City: University Associates.

Pino, Christopher J.
1971 "Relation of a Trainability Index to T-Group Outcomes." Journal of Applied Psychology, 55:439-442.

Porat, Avner M.
1970 "Cross-Cultural Differences in Resolving Union-Management Conflict Through Negotiations." Journal of Applied Psychology, 54:441-451.

Porter, Lyman W.
1959 "Self-Perceptions of First-Level Supervisors Compared with Upper-Management Personnel and With Operative Line Workers." Journal of Applied Psychology, 43:183-186.

_____
1961a "A Study of Perceived Need Satisfactions in Bottom- and Middle-Management Jobs." Journal of Applied Psychology, 45:1-10.

_____
1961b "Perceived Trait Requirements in Bottom- and Middle-Management Jobs." Journal of Applied Psychology, 45: 232-236.

_____
1962 "Job Attitudes in Management: I. Perceived Deficiencies in Need Fulfillment as a Function of Job Level." Journal of Applied Psychology, 46:375-384.

_____
1964 Organizational Patterns of Managerial Job Attitudes. New York: American Foundation for Management Research.

_____ and Mildred M. Henry
1964a "Job Attitudes in Management: V. Perceptions of the Importance of Certain Personality Traits as a Function of Job Level." Journal of Applied Psychology, 48:31-36.

_____
1964b "Job Attitudes in Management: VI. Perceptions of the Importance of Certain Personality Traits as a Function of Line Versus Staff Type of Job." Journal of Applied Psychology, 48:305-309.

_____ and Edward E. Lawler III
1968 Managerial Attitudes and Performance. Homewood, Ill: Richard D. Irwin Inc.

_____ and Vance F. Mitchell
1967 "Comparative Study of Need Satisfactions in Military

and Business Hierarchies." Journal of Applied Psychology, 51:139-144.

Precht, Dan (ed)
1974 MIS/SPSS Reference Manual. Edmonton: University of Alberta Press.

Preston, Malcolm G. and Ray K. Heintz
1953 "Effects of Participatory vs. Supervisory Leadership on Group Judgement." In Cartwright, Darwin and Alvin Zander: Group Dynamics. Evanston, Ill: Row, Peterson and Co. pp. 373-381.

Rambo, W.W.
1958 "The Construction and Analysis of a Leadership Behavior Checklist for Industrial Managers." Journal of Applied Psychology, 42:409-415.

Redlin, William J.
1970 Managerial Effectiveness. New York: McGraw Hill.

Reddy, W. Brendan and Anne Byrnes
1972 "Effects of Interpersonal Group Composition on the Problem-Solving Behavior of Middle Managers." Journal of Applied Psychology, 56:510-517.

Rhinehart, J.B., R.P. Barrell, A.S. DeWolfe, J.E. Griffin and J.C. Taylor
1966 "Comparative Study of Need Satisfactions in Governmental and Business Hierarchies." Journal of Applied Psychology, 53:

Richards, Steven A. and James E. Taffie
1972 "Behavioral Correlates of Leadership Effectiveness in Interacting and Counteracting Groups." Journal of Applied Psychology, 56:377-381.

Richardson, Stephen A.
1956 "Organizational Control in British and American Ships." Administrative Science Quarterly, 1:180-207.

Ritchie, J.B. and R.E. Miles
1970 "An Analysis of Quantity and Quality of Participation as Mediating Variables in the Participative Decision-Making Process." Personnel Psychology, 23:347-359.

Rosen, Benson and Thomas H. Jerdel
1974 "Sex Stereotyping in the Executive Suite." Harvard Business Review, 52.1:45-48.

Rosen, H.
1961a "Managerial Role Interaction: a Study of Three Managerial Levels." Journal of Applied Psychology, 45:30-34.

Rosen, H.
1961b "Desirable Attributes of Work: Four Levels of Management Describe Their Job Environments." Journal of Applied Psychology, 45:156-160.

Rosenbaum, Leonard L. and William B. Rosenbaum
1971 "Morale and Productivity Consequences of Group Leadership Style, Stress and Type of Task." Journal of Applied Psychology, 55:343-348.

Ross, Ian C. and Alvin Zander
1957 "Need Satisfactions and Employee Turnover." Personnel Psychology, 10:327-338.

Rossel, Robert D.
1970 "Instrumental and Expressive Leadership in Complex Organizations." Administrative Science Quarterly, 15: 306-316.

Rotter, George S. and Stephen M. Portugal
1969 "Group and Individual Effects of Problem Solving." Journal of Applied Psychology, 53:338-341.

Sanders, Eric P.
1968 "Evolutionary Performance, Managerial Abilities, and Change: An Exploratory Investigation of Organizations." Journal of Applied Psychology, 52:362-365.

Sasaki, Kyohei
1968 Statistics for Modern Business Decision Making. Belmont, California: Wadsworth.

Schmidt, David R.
1969 "Punitive Supervision and Productivity: an Experimental Analogue." Journal of Applied Psychology, 53:118-123.

Schneider, Benjamin and C.J. Bartlett
1970 "Individual Differences and Organizational Climate. II. Measurement of Organizational Climate by the Multi-Trait, Multi-Rater Matrix." Personnel Psychology, 23:493-512.

Schroder, H.M. and O.J. Har
1963 "Conceptual Or ation and Group Structure." In O.J. Harvey (ed) Motivation and Social Interaction. New York: Ronald Press. pp. 134-166.

Schutz, W.C.
1958 FIRO: A Three-Dimensional Theory of Interpersonal Behavior. New York: Holt, Rinehart and Winston.

Schwab, Donald P. and Larry L Cummings
1970 "Theories of Performance and Satisfaction: A Review." Industrial Relations, 3:408-430.

Scott, W.G.
1974 Personal Communication with the Author.

Sheriff, Don R.
1969 Administrative Behavior: A Quantitative Case Study of Six Organizations. CLM Monograph No. 12. Centre for Labor and Management, College of Business Administration, University of Iowa, Iowa City.

Shostrom, E.L.
1964 "An Inventory for the Measurement of Self-Actualization." Educational and Psychological Measurement, 24:207-218.

Siegel, Sidney
1956 Nonparametric Statistics for the Behavioral Sciences. New York: McGraw Hill.

Skinner, B.F.
1971 Beyond Freedom and Dignity. New York: Alfred A. Knopf.

Skipton, Leonard and Joseph Weitz
1971 "Task Enjoyment and Task Perseverance in Relation to Task Success and Self-Esteem." Journal of Applied Psychology, 55:411-421.

Slocum, John W.
1971 "Motivation in Managerial Levels: Relationship of Need Satisfaction to Job Performance." Journal of Applied Psychology, 55:312-316.

Smith, P.V. and T.F. Honour
1969 "The Impact of Phase I Managerial Grid Training." Journal of Management Studies, 6:348-330.

Smith, Robert J. and Arthur I. Siegel
1967 "A Multi-Dimensional Scaling Analysis of the Job of Civil Defence Director." Journal of Applied Psychology, 51: 476-480.

Starcevich, Matt M.
1972 "Job Factor Importance by Job Satisfaction and Dissatisfaction Across Different Occupational Levels." Journal of Applied Psychology, 56:467-471.

Steele, John E. and Lewis B. Ward
1974 "M.B.A's: Mobile; Well Situated, Well Paid." Harvard Business Review, 52.1:99-110.

Stogdill, Ralph M.
1948 "Personal Factors Associated With Leadership: a Survey of the Literature." Journal of Psychology, 25:35-71.

1950 "Leadership, Membership and Organization." Psychological Bulletin.

Stogdill, Ralph M. and Carroll L. Shartle
1948 "Methods for Determining Patterns of Leadership Behavior in Relation to Organization Structure and Objectives." Journal of Applied Psychology, 32:286-291.

1955 Methods in the Study of Administrative Leadership. Columbus: Bureau of Business Research, The Ohio State University.

Stoike, Thomas H.
1971 "Effects of Mode of Organization and Feedback Level on Creative Task Groups." Journal of Applied Psychology, 55:324-330.

Streufert, Siegfried, Susan C. Streufert and Carl H. Castore
1968 "Leadership in Negotiations and the Complexity of Conceptual Structure." Journal of Applied Psychology, 52:218-223.

Stroud, Peggy V.
1959 "Evaluating a Human Relations Training Program." Personnel, 36:52-60.

Student, K.R.
1968 "Supervisory Influence and Work Group Performance. Journal of Applied Psychology, 52:188-194.

Sykes, A.J.M.
1962 "The Effect of a Supervisory Training Course on Changing Supervisors' Perception and Expectations of the Role of Management." Human Relations, 15:227-243.

Tannenbaum, Robert and Fred Massarik
1950 "Participation by Subordinates in the Managerial Decision-Making Process." Canadian Journal of Economics and Political Science, pp. 413-418.

and Warren H. Schmidt
1958 "How to Choose a Leadership Pattern." Harvard Business Review.

Tanofsky, Robert, R. Ronald Shepps and Paul J. O'Neill
1969 "Pattern Analysis of Biographical Predictors of Success as an Insurance Salesman." Journal of Applied Psychology, 53:136-139.

Tatsuoka, Maurice M.
1971 Multivariate Analysis: Techniques for Educational and Psychological Research. New York: Wiley.

Theodorsen, G.A.
1953 "Elements in the Progressive Development of Small Groups." Social Forces, 31:311-320.

Thomas, E.J.
1956 "Effects of Role-Interdependence and Ego-Strength on Group Functioning." Unpublished Doctoral Dissertation, University of Michigan.

Thomas, Kenneth
1973 "Conflict and Conflict Management." In Marvin Dunnette (ed) Handbook of Industrial and Organizational Psychology. Chicago: Aldine.

Thompson, Diane E.
1971 "Favorable Self-Perception, Perceived Supervisory Style, and Job Satisfaction." Journal of Applied Psychology, 55: 349-352.

Thurstone, L.L.
1935 The Vectors of the Mind. Chicago: University of Chicago Press.

Tucker, Michael F., Victor B. Cline and James R. Schmidt
1967 "Prediction of Creativity and Other Performance Measures from Biographical Information Among Pharmaceutical Scientists." Journal of Applied Psychology, 51: 131-138.

Tuckman, Bruce W.
1965 "Development Sequence in Small Groups." Psychological Bulletin, 63: 384-399.

Turner, A.N. and P.R. Lawrence
1965 Industrial Jobs and the Worker: An Investigation of Response to Task Attributes. Boston: Harvard University Press.

Uyterhoven, Hugo E.R.
1972 "General Managers in the Middle." Harvard Business Review, 50.2: 75-85.

Vicino, Franco L., Judith Krusell, Bernard M. Bass, Edward L. Deci and David A. Landy
1973 "The Impact of PROCESS: Self-Administered Exercises for Personal and Interpersonal Development." Journal of Applied Behavioral Science, 9: 737-750.

Vroom, Victor H.
1959 "Some Personality Determinants of the Effects of Participation." Journal of Abnormal and Social Psychology, 59: 322-327.

_____
1964 Work and Motivation. New York: Wiley.

_____ and Brend Pahl
1971 "Relationship Between Age and Risk-Taking Among Managers." Journal of Applied Psychology, 55: 399-405.

Wager, L. Wesley
1964 "Leadership Style, Hierarchial Influence and Supervisory Role Obligations." Administrative Science Quarterly, 9:391-420.

Wainer, Herbert A. and Irwin M. Rubin
1969 "Motivation of Research and Development Entrepreneurs." Journal of Applied Psychology, 53:178-184.

Walton, Richard E., John M. Dutton and Thomas P. Cafferty
1969 "Organization Context and Interdepartmental Conflict." Administrative Science Quarterly, 14:522-542.

Webber, Ross A.
1970 "Perceptions of Interactions Between Superiors and Subordinates." 23:235-248.

Weick, K.E.
1966 "The Concept of Equity in the Perception of Pay." Administrative Science Quarterly, 11:414-439.

Weissenberg, Peter and Leopold W. Gruenfeld
1968 "Relationship Between Job Satisfaction and Job Involvement." Journal of Applied Psychology, 52:469-473.

Wilcoxan, F.
1945 "Individual Comparisons by Ranking Methods." Biometrics Bulletin, 1:80-83.

Wofford, J.C.
1970 "Factor Analysis of Managerial Behavioral Variables." Journal of Applied Psychology, 54:169-173.

Wollowick, Herbert B. and W.J. McNamara
1969 "Relationship of the Components of an Assessment Centre to Management Success." Journal of Applied Psychology, 53:348-352.

Zajonc, R. and D. Wolfe
1966 "Cognitive Consequences of a Person's Position in a Formal Organization." Human Relations, 19:139-150.

Zald, Mayer N.
1962 "Organizational Control Structures in Five Correctional Institutions." American Journal of Sociology, 68:335-345.

Zdep, S.M.
1969 "Intra-Group Reinforcement and its Effects on Leadership Behavior." Organizational Behavior and Human Performance, 4:284-298.

Zeleny, L.D.
1939 "Characteristics of Group Leaders." Sociology and Social Research. 24:140-149.

APPENDIX A

Brief descriptions of the statistical techniques used in this thesis

Appendix A-1

FACTOR ANALYSIS

Factor analysis is a statistical technique used to account for the correlation pattern between a set of observed variables in terms of a smaller number of unobservable factors.

The general model for factor analysis may be expressed algebraically as:

$$
\begin{aligned}
X_1 &= A_{11}F_1 + A_{12}F_2 + \cdots\cdots + A_{1p}F_p + U_1 \\
X_2 &= A_{21}F_1 + A_{22}F_2 + \cdots\cdots + A_{2p}F_p + U_2 \\
&\vdots \\
X_N &= A_{N1}F_1 + A_{N2}F_2 + \cdots\cdots + A_{Np}F_p + U_N
\end{aligned}
$$

where X_i is the observed variable and F_i is the postulated factor and U_i is a unique error component for the relationship. This model may be expressed in matrix terms as:

$$X = AF + U$$

The problem for factor analysis is therefore to estimate A, the matrix of factor loadings.

The assumptions normally made in factor analysis are that:

(1) the p common factors (F_i) are independent with mean zero and unit variance;

(2) the N unique components (U_i) are independent with mean zero and variance Ψ_i, and

(3) the unique and common factors (U_i and F_i) are independent.

If R is the correlation matrix of the sample, the diagonal element may be written:

$$1 = a^2_{i1} + a^2_{i2} + \cdots\cdots + a^2_{iN} + \Psi_i$$

and the non-diagonal elements

$$\rho_{ij} = a_{i1} a_{j1} + a_{i2} \cdots a_{iN} a_{jN}$$

Thus, $R = AA' + \psi$

where ψ is the diagonal matrix of U_i variances.

The problem may thus be restated as to determine the loadings A_{ij} and the unique variances ψ_i such that

$$R = AA' + \psi \quad (2)$$

If T is an orthogonal transformation matrix ($TT' = I$) of the same rank as A, and if

$$G = T'F$$

the problem becomes that of solving for A:

$$X = AF + \psi$$

$$= ATT'F + \psi$$

$$= AIG + \psi$$

and

$$R = AA' + \psi$$

$$= ATT'A' + \psi$$

$$= (AT)(TA)' + \psi$$

Thus there are an infinite number of possible solutions to the problem.

The "principle component" solution to the factor analysis problem was proposed by Hotelling (1933) and was used in this study. The approach assumes that the vector of unique variances, ψ, is equal to zero, and that a limited number of factors (N) exist which account for the majority of the variance in the X variables. The problem may therefore be expressed in terms of finding a vector F with a diagonal covariance matrix D, such that F_1 has the largest

possible variance of all possible linear combinations of the Xs and F_2 has the largest possible variance of all linear combinations of X that are uncorrelated with F_1, etc.

The first principle component of the observations X is that linear compound:

$$F_1 = a_{11}X_1 + a_{21}X_2 + \cdots + a_{p1}X_p$$

of the responses whose sample variance

$$s^2_{F_1} = \sum_{i=1}^{p}\sum_{j=1}^{p} a_{i1}a_{j1}s_{ij}$$

$$A_1' S A_1$$

is the greatest for all coefficient vectors, normalized so that $A_1'A_1 = 1$. To determine the coefficients, the normalization constraint is introduced by means of the Lagrange multiplier L_1. Differentiating with respect to A_1, therefore:

$$\frac{\partial}{\partial A_1}\left[s^2_{F_1} + L_1(1 - A_1'A_1)\right], \quad \frac{\partial}{\partial A_1}\left[A_1' S A_1 + L_1(1 - A_1'A_1)\right]$$

$$2(S - L_1 I) A_1$$

The coefficients must satisfy the p simultaneous linear equations:

$$(S - L_1 I) A_1 = 0$$

If the solution to these equations is to be other than the null vector, the value of L_1 must be chosen so that:

$$|S - L_1 I| = 0$$

L_1 is therefore a characteristic root of the sample covariance matrix, S, and A_1 is its associated characteristic vector. To determine which of the p roots of S should be used, the principle component method suggests that the first principle component should

account for as much variance as possible and therefore the greatest characteristic root (or eigen value) of S should be chosen.

Additional principle components may be identified by reiterating the process, subject always to the constraints:

$$A_i' A_i = 1$$

to scale the ith component to the same scale as the first, and

$$A_i' A_j = 0$$

to ensure orthogonality of the components.

A number of principle components may therefore be generated. It is common practice to restrict the selection of principle components to those with eigen values greater than unity.

It should be noted that S (the sample covariance matrix) is used as an estimate of Σ (the population covariance matrix) since the population covariance matrix is unknown. The assumption is inferred that the sample is representative of the population.

Likewise, the covariance and correlation matrices may be used interchangeably where the variances of the variables are scaled to unity.

The end result of principle component analysis, therefore, is a factor matrix (i.e. a table showing the weight, or loading, of each of the X variables on each of the factors), and a measure of the amount of the variance of the independent variables accounted for by the factors.

Thurstone (1935) specified as a criterion for factor selection a "simple structure", i.e. that the factors in the final solution should have large correlations with a few of the original variables and essentially zero correlations with all others. Often this

"simple structure" may be obtained by an orthogonal rotation of the orthogonal factors, (i.e. $G = T'F$).

One criterion widely used for factor rotation is that the sum of the variances of the squared loadings within each column of the factor matrix should be maximised. Since this criterion attempts to maximise the amount of the total variance accounted for by a particular factor, it has been known as the "varimax" criterion.

An alternative criterion is one which takes into account the possibility of having negative loadings of the variables on the factors, and therefore seeks to maximise the net amount of variance in the data variables. Since this involves the fourth powers of factor loadings, this criterion has been called the "quartimax" criterion.

A third and compromise criterion attempts to equalize the variances accounted for under the two prior criteria and is known as the "equimax" criterion.

Any one of these factor rotations may be utilised in coming to a final solution to factor analysis. Since the input to the process was a correlation matrix, only the strengths of the relationships between the variables, rather than the directions (i.e.causality) were specified. The experimenter may therefore choose his factor rotation method with the additional criterion in mind that the results should be meaningful in terms of the nature of his input. For this reason, Thurstone's "simple structure" criterion is most often accepted.

Appendix A-2

STEP-WISE MULTIPLE REGRESSION

Multiple regression is a statistical procedure for the formulation of relationships between given dependent variables and a series of independent variables. Within the current study, the relationships of interest are those between success criteria, as dependent variables, and a series of demographic and/or other variables. Multiple regression is used here as a means of predicting the individual's managerial success on the basis of his scores on a number of instrumental scales.

The problem of multiple regression may be expressed algebraically as: given a set of predictor variables, $X_1, X_2, \ldots\ldots X_p$ and a criterion variable Y for a group of N individuals, to estimate the coefficients b_i $(i = 0,1,2, \ldots\ldots p)$ in the linear relationship:

$$Y_i = b_0 + b_1X_1 + b_2X_2 \ldots\ldots + b_pX_p + U_i$$

The least squares approach to this problem selects the values of b_i that minimizes the sum of the squares of the error terms, i.e:

$$\sum U_i^2 = (Y - b_0 - b_1X_1 - b_2X_2 - \ldots\ldots - b_pX_p)^2$$

for the data available.

Assumptions underlying this model are that:

1. the $(X_j)_{j=1}^{P}$ are a set of p explanatory n x 1 vector variables.
2. The estimate value of the error term, $E(U_i) = 0$
3. the variance of the error terms, $Var(U_i) = \sigma^2$, constant and the covariance between error terms $Cov(U_i U_k) = 0$ for $i \neq k$, and $i,k = 1,2,\ldots\ldots,n$.
4. if the $(X_j)_{j=1}^{P}$ are not fixed, then:

$$\text{Cov}\,(U_i X_{ij} \mid X_{ij}) = 0$$

$$E\,(U_i \mid X_{ij}) = 0$$

$$\text{Var}\,(U_i \mid X_{ij}) = \sigma^2$$

$$\text{Cov}\,(U_i, U_j \mid X_{ij}) = 0 \quad \text{for } k, i = 1, 2, \ldots, n \text{ and } j = 1, 2, \ldots, p.$$

In the matrix notation, the model may be written:

$$Y = Xb + U$$

The regression coefficients, $\hat{b}$, may be calculated from the equation:

$$\hat{b} = (X'X)^{-1} X'Y$$

The covariance matrix of $\hat{b}$ would be given by

$$\sigma^2 (X'X)^{-1}$$

while an unbiased estimator of σ^2 is provided by

$$\frac{(Y - X\hat{b})'(Y - X\hat{b})}{n - p - 1} = S^2$$

The coefficient of multiple determination is defined as:

$$R^2 = \frac{SSR}{SST} = \frac{1 - SSE}{SST}$$

where SSR = the regression (or explained) sum of the squares

$$\hat{b}'X'Y - n\bar{Y}^2$$

SST = the total sum of the squares

$$Y'Y - n\bar{Y}^2$$

and SSE = $Y'Y - \hat{b}'X'Y = (Y - X\hat{b})'(Y - X\hat{b})$

If the assumption is added that the U_i are normally distributed, then the following are true:

1. $\hat{b}_j$ is normally distributed with a mean b_j and variance $\sigma^2 C_{jj}$ where C_{jj} is the jth diagonal element of $(X'X)^{-1}$.

2. $\hat{b}$ has a multivariate normal distribution with mean b and covariance matrix $\sigma^2(X'X)^{-1}$.

3. $\dfrac{\hat{b}_j - b_j}{s^2 c_{jj}}$ has a t distribution with (n-p-1) degrees of freedom.

4. If $b_j = 0$, $\dfrac{SSR/p}{SSE/(n-p-1)}$ has an F distribution with p and (n-p-1) degrees of freedom.

In approaching the general problem, the question arises as to which of the independent variables should be included in the regression equation.

A number of different approaches to the regression problem have been advanced, some of which examine all possible regressions, others assume all variables significantly contribute to the regression and work on a process of elimination; others assume that no variables contribute unless they are included by virtue of a significant contribution to the criterion variables variance. The step-wise regression procedure used in this study makes the last assumption.

The step-wise procedure starts with the simple correlation matrix and enters into the expression the independent variable most highly correlated with the response.

Using the partial correlation coefficient, the procedure is then to select, as the next variable to enter the regression, that independent variable whose partial correlation with the response is the highest.

The method then examines the contribution the first variable would have made to the regression if it had, in fact, been entered as the second variable. If this contribution is shown by an F test to be significant, the variable is retained in the regression -

otherwise the variable is dropped. Likewise, the contribution of the second variable is also tested. This completes the first step in the procedure. Further variables are added (and possibly deleted) on the same basis as the first step until no more variables can be added which significantly contribute to the variance of the response.

Appendix B

Regression equations for the relationships between the variable sets illustrated in Chapter VII

Appendix B-1

Regression equations for success variables regressed on the demographic variables.

1. LEVELSUP (1.72) = -.28 YRSED - .27 YRSMGMT + 6.64
(.07) (.03)

2. HIERARCH (20.40) = .34 YRSED - .29 TENURE + 12.64
(2.45) (.72)

3. SALARY (3307) = .20 DEPENDS + .39 YRSED + .44 PRESPOSN
(255) (138) (125)
+ .23 YRSMGMT + 1113
(62)

4. PROMOTES (1.15) = .60 TENURE - .41 PRESPOSN + .40
(.02) (.03)

5. BUDGET (1.02) = .34 YRSMGMT + .51
(.02)

6. LOGSTAFF (.53) = .41 AGE + .14
(.01)

7. DIRSUBS (2.64) = .44 LASTFEED + .33 TENURE - 3.11
(.01) (.01)

8. FREQCONT (1.03) = .27 YRSED + .44 YRSMGMT - 2.74
(.08) (.03)

9. PERFRATE (2.65) = .35 PRESPOSN + 1.67
(.09)

10. LEVELTRG (1.21) = .42 YRSED + .46 MOSINTRG + .44
(.03) (.01)

11. POSITION SUCCESS (.88) = .35 YRSED - .35 YRSMGMT - 2.76
(.04) (.01)

12. SUPERVISORY SUCCESS (.001) = .27 LASTFTED (.01) + .37 MOSINTRG (.01) + .39 TENURE (.01) - 2.16

13. GROWTH SUCCESS (.001) = .36 TENURE (.01) - .54

Appendix B-2

Regression equations for the fundamental personality characteristics regressed on the demographic variables.

14.	CAUTIOUS	-.01 MOSINTRG	+ 21.68	
	(5.70)	(.00)		
15.	DOMINANCE	.59 MOSINTRG	- .90 PRESPOSN	+ 10.01
	(2.45)	(.31)	(.25)	
16.	IMPULSIVE	.65 LASTED	- 2.95	
	(3.30)	(.07)		
17.	ACTIVE	.18 LASTED	+ 2.42	
	(1.92)	(.05)		
18.	SOCIABLE	.66 MOSINTRG	- .07 PRESPOSN	+ 10.17
	(2.21)	(.38)	(.22)	

Appendix B-3

Regression equations for the success variables regressed on the fundamental personality characteristics.

19.	LEVELSDN (1.95)	= -.71 DOMINANCE (.16)	+ 9.14
20.	HIERARCH (17.67)	= -.72 DOMINANCE (1.48)	+ 96.31
21.	FREQCONT (1.85)	= -.66 DOMINANCE (.16)	+ 5.82
22.	POSITION SUCCESS (.75)	= -.69 DOMINANCE (.06)	+ 1.50

Appendix B-4

Regression equations for the success variables regressed on the fundamental personality characteristics and the demographic variables.

23. LEVELSDN (1.290)
-.58 AGE (.03) + .92 PRESPOSN (.12) - .09 DOMINANCE (.000)
+ 7.16

24. BUDGET (1.330)
-.92 LASTED (.01) - .24 MOSINPRG (.00)
- .68 DOMINANCE (.05) + 13.35

25. FREQCONT (.83)
.36 LASTED (.03) + .61 YRSMGMT (.02)
- .73 DOMINANCE (.08) - 1.22

26. SALARY (3604)
.71 DEPENDTS (354) - .44 INTER-ORI (64) + 13978

27. LOGSTAFF (.22)
.03 DEPENDTS (.00) - .76 YRSED (.02)
- .46 INTER-ORI (.01) + 3.25

28. PERFRATE (.42)
-.58 LASTED (.08) + .41 IMPULSIVE (.00) + 13.24

29. FREQCONT (.32)
.30 YRSED (.06) - .46 LASTED (.01) - .67 PRESPOSN (.03)

30. LEVELSDN (1.72)
.57 YRSMGMT (.07) - .50 TASK-ORI (.04) + 5.14

Appendix B-5

Regression equations for the changeable personal characteristics regressed on the demographic variables.

31. HR = .30 YRSMGMT + 5.53
(1.83) (.00)

31. SATIS = .56 AGE − 4.91 PRESPOSN + 5.69
(.82) (.02) (.12)

Appendix B-6

Regression equations for the success variables regressed on the changeable personal characteristics.

33.	MULTINCR (.511)	.70 E - .93 (.07)
34.	DIRSUBS (2.84)	-.26 E + 6.73 (.00)
35.	GROWTH SUCCESS (.56)	.58 E - 1.30 (.09)
36.	PERFRATE (1.93)	-.29 M + 2.34 (.00)

Appendix B-7

Regression equations for the success variables regressed on the changeable personal characteristics and the demographic variables.

37. SALARY = .77 AGE + .50 E - 5921
(2830) (94) (283)

38. POSITION SUCCESS = .63 MOSINTRG + .01 HR - .77
(.84) (.04) (.00)

Appendix B-8

Regression equations for the behavioural variables regressed on the demographic variables.

39. C
(3.28)
.81 DEPENDTS - 13.45
(.09)

40. IS
(5.73)
.65 MOSINBG - 38.89
(.05)

41. COLLAB
(4.65)
-.54 LASTFED - 13.68
(.04)

42. EC
(4.50)
.71 LASTFED - .50 PRESPOSN - 6.31
(.04) (.11)

43. WC
(1.12)
.00 DEPENDTS - 1.57
(.47)

44. EA
(1.97)
-.39 YRSMGMT + 1.13
(.09)

Appendix B-9

Regression equations for the success variables regressed on the behavioural scales.

45. LEVELSUP (2.07) -.58 IS - 4.49 (.09)

46. PERFRATE (1.92) .71 IS - 6.40 (.08)

47. POSITION SUCCESS (.94) .12 EA - .68 (.09)

48. PERFRATE (2.45) .56 COLLAB - 4.36 (.36)

49. SALARY (4071) .68 EC - 8966 (.50)

50. BUDGET (1.08) .60 EC - 3.84 (.14)

51. LEVELSUP (1.53) -.33 COMPET - 4.00 (.00)

52. MULTINCR (.95) .61 SELF - 3.98 (.05)

53. PROMOTES (.75) -.42 SELF (.01) .91 OTHER (.03) - .62

54. LEVELSUP (2.04) .13 EA - 3.53 (.00)

55. POSITION SUCCESS (.88) -.63 IS - 3.99 (.04)

56. PERFRATE
(2.87)

-.47 WA · 5.57
(.00)

Appendix B-10

Regression equations for the success variables regressed on the behavioural scales and the demographic variables.

57. PERFRATE
(1.49)
.49 TENURE + .61 IS - 6.69
(.06) (.06)

58. FREQCONT
(1.35)
-.60 DEPENDTS - .47 COLLAB + 7.99
(.22) (.19)

59. HIERARCH
(.910)
.69 TENURE + .96 COMPET - .72 SELF
(.37) (1.74) (.95)
+ 95.22

60. LEVELTRG
(.77)
.52 YRSED - .73 MOSINTRG + .30 AVOID
(.07) (.01) (.10)
- 1.90

61. SALARY
(3301)
.48 YRSED - .60 PRESPOSN + .14 SELF
(261) (241) (.00)
- 3868

62. GROWTH SUCCESS
(.401)
.47 MOSINTRG + .81 TENURE
(.00) (.01)
- .31 PRESPOSN + .37 SELF - 2.92
(.03) (.02)

63. SALARY
(2803)
.56 AGE + .84 EC - 4676
(81) (378)

Appendix B-11

Regression equations for the organizational variables regressed on the demographic variables.

64. STANDARDS -.08 LASTED + 11.04
(3.18) (.00)

65. IDENTITY .80 DEPENDS - .56 PRESPOSN + 6.30
(1.52) (.23) (.13)

66. STRUCTURE -.60 MOSINTRG + 15.44
(1.96) (.31)

67. COLL -.60 YRSED + 89.73
(.90) (.40)

68. DEPIFLEX -.55 AGE + 8.263
(1.25) (.03)

69. UNIFLEX .62 EASIFIED + 2.36
(1.04) (.02)

70. [illegible]SFLEX -.66 AGE + 10.00
(1.[illegible]7) (.0[illegible])

71. SELFINF .50 YRSED + 47[illegible]
(18.[illegible]) (1.78)

72. SPECIALINF [illegible] YRSMGMT + 1.0[illegible]
(3.88) (.1[illegible])

Appendix B-12

Regression equations for the success variables regressed on the organizational variables.

73. MULTINCR = .74 CONFLICT - 1.02
(.40) (.06)

74. FREQCONT = .12 CONFLICT + .54
(4.47) (.00)

75. LEVELIRG = -.63 CONFLICT + 5.15
(1.17) (.16)

76. LEVELSUP = -.64 RISK + 8.56
(2.02) (.22)

77. HIERARCH = .61 RISK + 44.35
(20.39) (2.25)

78. SALARY = .43 COOP + 1351
(4865) (.00)

79. LEVELIRG = -.55 BUREAU - .44 COLL + 44.35
(1.09) (.03) (6.03)

80. PERSONNEL SUCCESS = -.58 BUREAU + 4.11
(.90) (.02)

81. LOGSTAFF = -.50 BOSSFLEX + .47 EXECINF + 1.91
(.44) (.07) (.02)

82. PERSONNEL SUCCESS = -.42 DEPTFLEC + 1.14
(.81) (.00)

83. LEVELSDN = .79 UNITFLEX + .32 SELFINF
(.66) (.15) (.04)

.59 SPECIALINF - .70 OTHERINF
(.05) (.18)

.56 AUTHORITY - 6.45
(.25)

84. PROMOTES .81 EXECINF - .15
(.79) (.04)

85. DIRSUBS .59 EXECINF - 2.75
(2.52) (.13)

86. PERFRATE .63 EXECINF - .91
(2.09) (.11)

87. SUPERVISORY .68 EXECINF - .63
SUCCESS (.05)
(.89)

88. GROWTH SUCCESS .60 EXECINF - .38
(.70) (.04)

89. SALARY .48 SELFINF - .74 SPECIALINF - 7051
(2961) (.06) (.489)

90. LEVELIRG .71 SELFINF - 1.37
(1.000) (.04)

Appendix B-13

Regression equations for the regression of the success variables on the organizational and demographic variables.

91. LEVELTRG (1.03) = .50 PRESPOSN (.08) − .58 LIKERT (.01) + 7.16

92. LEVELSUP (.76) = .49 LASTFTED (.02) + .30 STRUCTURE (.11) + .37 REWARD (.12) − .95 RISK (.10) − 3.50

93. PERFRATE (.21) = .81 AGE (.01) − .10 DEPEDNTS (.04) − .71 RESPONSIBILITY (.03) − .36 SUPPORT (.03) + .16 STANDARDS (.03) − .37 CONFLICT (.04) + 5.24

94. LEVELTRG (.47) = .69 MOSINTRG (.09) + .15 PRESPOSN (.06) − .73 YRSMGMT (.03) + .40 IDENTITY (.09) − 1.75

95. POSITION SUCCESS (.38) = .78 MOSINTRG (.03) + .57 INTELLEX (.13) − 23.30

96. LEVELSUP (.33) = .32 YRSED (.04) + .43 MOSINTRG (.02) − .34 YRSMGMT (.10) + .69 DEPTFLEX (.15) + .74 SELFINF (.01) + .38 SPECIALINF (.03) − .82 OTHER INF (.11) − 1.85

97. LOGSTAFF
(.36)

.43 YRSMGMT + .39 SUBINF + .44 EXECINF
(.01) (.01) (.02)

= .36

PERFRATE
(1.64)

.56 YRSED + .84 EXECINF = 6.00
(.15) (.09)

APPENDIX C

Correlations between those scales administered which were not expected to correlate with the success variables are the demographic and success criteria

APPENDIX C-1

Correlations between miscellaneous intra-personal scales and the various demographic and success variables.

	Thurstone Temperament Schedule				BASS
	VIGOROUS	IMPULSIVE	STABLE	REFLECTIVE	TASK-ORI
MODERATOR VARIABLES					
AGE	-.34	-.15	.05	-.13	.28
DEPENDTS	.07	.03	-.25	-.16	-.12
YRSED	.29	.41	-.31	-.26	-.14
LASTED	.35	.29	-.27	.00	-.17
MOSINTRG	.17	.05	-.41	-.23	-.07	
TENURE	.49	.32	-.26	-.22	.16
PRESPOSN	.43	-.12	.12	-.24	.10
YRSMGMT	-.11	-.11	-.05	-.08	-.27
	-.28	-.12	-.14	.45	.05
SUCCESS INDICATORS					
LEVELSUP	.21	.07	.16	-.02	.28
LEVELSDN	.22	.07	.23	-.14	-.17
HIERARCH	-.01	.01	.06	.03	-.13
SALARY	-.23	-.36	-.33	.02	-.14
MULTINCR	-.10	.20	-.51	.49	.03
PROMOTES	.11	-.29	.08	.07	.24
BUDGET	-.26	-.39	-.30	.30	.18
LOGSTAFF	.39	-.19	-.22	.10	-.07
DIRSUBS	.11	.07	-.18	-.33	-.13
FREQCONT	-.15	-.06	-.12	.33	-.13
PERFRATE	-.18	-.27	.23	-.34	.19
LEVELTRG	-.06	-.11	-.01	-.02	-.11
SUCCESS FACTORS					
1. POSITION	-.06	-.05	-.08	.16	-.13
2. STAFF	.09	-.03	-.16	-.18	-.07
3. PERSONNEL	-.24	-.16	.05	-.19	.17
4. GROWTH	.05	-.18	-.24	.20	-.07
SAMPLE STATISTICS					
MEAN	10.00	10.08	10.77	9.83	28.88
S.D.	4.15	2.78	2.67	2.86	9.97
N	12	12	12	1	17

Significant at the .05 level or better

APPENDIX C-2

Correlations between Thomas' Scales and the various demographic and success variables.

N = 16	COMPETITIVE	AVOIDANCE	COMPROMISE	ACCOMODATION	SELF-ORIENTATION	OTHERS-ORIENTATION
MODERATOR VARIABLES						
AGE	.04	-.12	-.20	[illegible]10	.06	.13
DEPENDTS	-.20	-.09	.38	[illegible]	-.27	-.11
YRSED	.25	.43*	-.39	[illegible]	.12	-.08
LASFTED	.20	.44*	-.10	[illegible]	.06	-.26
LASTED	.00	.18	-.21	[illegible]	.05	.15
MOSINTRG	-.29	.50*	-.02	-.12	-.26	.07
TENURE	-.08	-.18	.43*	-.16	-.18	-.27
PRESPOSN	-.04	.13	.07	-.18	-.06	-.10
YRSMGMT	-.01	.11	.15	-.02	-.17	-.15
SUCCESS INDICATORS						
LEVELSUP	-.33	.22	-.22	.44	-.01	.38
LEVELSDN	.30	.15	.03	-.32	.07	-.46*
HIERARCH	.29	-.10	.23	-.24	-.02	-.45*
SALARY	.40	.26	-.17	-.32	.17	-.39
MULTINCR	.46	-.03	-.37	-.35	.61*	-.20
PROMOTES	.14	-.32	.52*	-.23	-.07	-.48*
BUDGET	.11	.08	-.15	-.08	.12	-.05
LOGSTAFF	-.01	.07	.09	-.27	-.03	-.14
DIRSUBS	-.34	.21	.32	-.03	-.34	-.03
FREQCONT	.30	.22	-.02	-.27	.03	-.34
PERFRATE	.45	-.36*	.38	.06	-.19	.28
LEVELTRG	.27	-.18	.11	.01	.09	-.24
SUCCESS FACTORS						
1. POSITION	.43*	.17	-.09	-.36	.11	-.42*
2. STAFF	-.28	.17	.20	-.12	-.24	.00
3. PERSONNEL	-.17	-.35	.39	.02	-.14	-.04
4. GROWTH	.43*	-.27	.11	-.33	.36	.45*
SAMPLE STATISTICS						
MEAN	4.75	5.81	6.38	4.69	31.69	[illegible].06
S.D.	2.65	2.51	2.27	1.83	4.91	[illegible]

* Significant at the .05 level or better

APPENDIX C-3

Correlations between FIRO-B Scales and the various demographic and success variables.

N = 14	EXPRESSED INCLUSION	WANTED INCLUSION	WANTED CONTROL	EXPRESSED AFFECTION	WANTED AFFECTION
MODERATOR VARIABLES					
AGE	-.25	-.15	-.27	.04	.03
DEPENDTS	-.15	.15	.69*	-.22	-.23
YRSED	-.22	-.10	-.21	-.23	.47*
LASFTED	.31	.23	.28	-.22	.38
EASTED	-.41	-.07	.31	-.55*	.18
MOSINTRG	.00	.08	-.15	.08	.09
TENURE	-.05	-.32	-.49	.20	-.04
PRESPOSN	.11	.03	-.10	-.07	.24
YRSMGMT	-.42	-.32	-.10	-.39	.05
SUCCESS INDICATORS					
LEVELSUP	-.16	-.34	-.20	-.26	-.14
LEVELSDN	.38	.54*	.08	.13	.03
HIERARCH	.28	.47*	.21	.23	.14
SALARY	.00	.45	.30	-.31	.24
MULTINCR	-.41	-.17	-.16	.14	.52*
PROMOTES	-.19	-.39	-.20	.03	.19
BUDGET	.07	.56*	.24	-.49*	.20
LOGSTAFF	.13	-.15	-.16	.22	.18
DIRSUBS	-.05	-.32	-.07	-.24	.53*
FREQCONT	.12	.32	.41	.34	.07
PERFRATE	.19	-.25	.30	.18	-.47*
LEVELTRG	-.30	-.09	.00	-.01	.00
SUCCESS FACTORS					
1. POSITION	.22	.56*	.09	.12	.17
2. STAFF	.00	-.17	-.13	-.13	.31
3. PERSONNEL	.20	-.11	.32	-.13	.32
4. GROWTH	-.36	-.26	-.16	.02	.47*
SAMPLE STATISTICS					
MEAN	3.71	1.71	3.93	3.07	4.00
S.D.	2.13	2.87	1.59	2.06	2.57

* Significant at the .05 level

APPENDIX C-4

Correlations between the miscellaneous Litwin and Stringer and Thomas scales and the various demographic and success variables.

	LITWIN and STRINGER					THOMAS	
	REWARD	WARMTH	SUPPORT	STANDARDS	IDENTITY	COLLABOR-ATIVE	CO-OPERA-TIVE
MODERATOR VARIABLES							
AGE	-.17	-.09	-.01	-.11	.12	.13	.23
DEPENDIS	.36	.42	.26	.18	.61*	-.22	.41*
SOCIO	-.04	.17	-.38	-.19	-.04	-.60*	.26
LAYER1	.21	.22	.01	.08	.03	-.01	.13
LAYER2	.16	.18	-.15	-.08	.03	-.09	.12
MOBINTRG	-.18	.22	-.32	-.60**	-.23	-.21	-.22
TENURE	-.44	-.32	-.48	-.23	-.14	-.09	.14
PRESTOSN	-.38	-.51*	-.57*	-.22	-.39	.10	.22
TRSFRMI	-.01	.22	-.06	-.10	.29	-.14	.08
SUCCESS INDICATORS							
LEVELSUP	.14	-.07	-.21	-.52*	-.52*	.45*	-.20
LEVELSDN	-.19	-.13	-.41	.08	.06	-.22	-.09
HIERARCH	-.11	.13	-.01	.31	.39	-.34	.25
SALARY	.05	.27	-.06	.04	.49	-.32	.43*
MOTIVCR	.12	.34	.63*	.54*	.63*	-.24	.17
PROMOTES	.04	.54*	.53*	-.09	.30	-.09	.11
BUDGET	.18	.42	.09	.17	.60*	-.26	.05
LOGSTAFF	.15	.34	.29	.04	.31	-.06	-.26
DIRSUBS	.22	.28	.12	-.07	-.18	.11	-.22
FREQCONT	-.39	.04	.10	-.08	.03	-.49*	-.02
PERFRATE	-.53*	.01	-.05	.02	.05	-.30	.08
LEVELTAG	-.36	-.41	-.51*	-.39	-.31	-.49*	.08
SUCCESS FACTORS							
1. POSITION	-.09	.01	-.11	.29	.37	-.34	.11
2. STAFF	.33	.52*	.34	.00	.15	.25	-.33
3. PERSONNEL	-.32	.06	-.11	-.20	.08	-.38	.20
4. GROWTH	.13	.54*	.64*	.15	.49	-.28	.25
SAMPLE STATISTICS							
MEAN	9.17	9.42	7.75	9.83	7.33	69.56	55.11
S.D.	2.17	3.29	2.63	3.04	2.35	8.21	9.32
N	12	12	12	12	12	18	18

* Significant at the .05 level

APPENDIX C-5

Correlations between the miscellaneous scales on the supplementary questionnaire and the various demographic and success variables.

N = 15	INFLUENCE OVER WORK: SELF	BOSS	SUBORDINATES	CLIENTS	SPECIALISTS	DIRECTORS	AUTHORITY	PRESSURE	INFLUENCE OVER BOSS: PERCEIVED BY SUBORDINATES	PERCEIVED BY SELF
[illegible] VARIABLES										
[illegible]	[illegible]	[illegible]	-.21	[illegible]	[illegible]	-.11	.29	.08	-.46•	.12
[illegible]	[illegible]	[illegible]	[illegible]•	[illegible]	[illegible]	[illegible]	.17	-.40	[illegible]	.33
[illegible]	[illegible]•	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-.05	-.30	[illegible]	.04
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-.11	.02	-.36	-.12
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.08	[illegible]•	-.19	.21	-.32	-.10
[illegible]	[illegible]	[illegible]	.24	[illegible]	.17	-.08	-.11	.27	.16	-.06
[illegible]	[illegible]	.25	-.04	[illegible]	[illegible]	.16	-.15	.02	-.01	.22
[illegible]	[illegible]	.02	-.05	[illegible]	[illegible]	.20	.01	-.32	-.02	-.35
[illegible]	[illegible]	-.07	.28	-.15	.54•	-.10	.07	-.01	.32	.13
SUCCESS INDICATORS										
[illegible]	[illegible]	[illegible]	-.33	[illegible]	[illegible]•	[illegible]	.26	-.12	.18	-.09
[illegible]	[illegible]	[illegible]	.15	[illegible]	[illegible]	-.11	[illegible]	.28	-.41	-.09
HIERARCH	.26	[illegible]	.47•	-.36	.42	.07	-.03	.24	-.12	.27
SALARY	.27	-.22	.26	.06	[illegible]•	.17	-.01	-.31	.07	.14
[illegible]	-.05	.09	.22	[illegible]	.12	.02	.38	.44•	-.14	-.16
PROMOTES	-.29	.00	.17	-.04	.74•	[illegible]	.20	.29	.17	.53•
WEIGHT	.28	-.13	.28	[illegible]	.51•	-.14	-.04	-.25	-.05	.46•
[illegible]	-.56	[illegible]	.56•	-.27	.48•	[illegible]	-.02	.14	.52•	.30
[illegible]	-.15	[illegible]	.21	[illegible]	.37	-.15	.15	.14	.46•	.40
[illegible]	.27	.04	.27	[illegible]	[illegible]	-.20	.04	.16	.34	.02
[illegible]	.01	.12	[illegible]	[illegible]	.17	-.02	.21	-.09	.31	.52•
[illegible]	.71	.24	[illegible]	-.25	-.39	.04	.26	.44•	-.01	-.15
[illegible] FACTORS										
1. POSITION	.27	-.14	.30	-.29	.31	-.10	-.25	.22	-.17	-.04
2. STAFF	-.28	.09	.40	-.11	.53•	-.05	-.03	-.01	.42	.45•
3. PERSONNEL	[illegible]	[illegible]	.12	-.08	.34	.20	.27	-.05	.30	.53•
4. GROWTH	[illegible]	[illegible]	.20	-.12	.56•	.28	.44•	-.51•	-.03	.27
SAMPLE STATISTICS:										
MEAN	36.33	15.87	13.13	10.80	4.20	6.73	5.20	5.20	4.87	5.67
S.D.	21.54	11.51	10.29	19.81	4.41	7.50	1.08	0.77	1.73	1.59

• Significant at the .05 level

Appendix D

Copies of the basic and supplementary questionnaires

Appendix D-1 THE BASIC QUESTIONNAIRE

PERSONAL DATASHEET

Please answer as fully and honestly as you can the following questions. You will note that you are not asked to reveal your identity on this datasheet: we assure you of your anonymity. This data will be kept confidential and used for research purposes only.

Personal information:

Date of birth _____ Sex _____ No. of dependents _____

Marital status: S M W Separated Divorced

Educational background:

No. of years of full-time education (count all schools): _____
Last full-time educational experience: _____
Last part-time educational experience (e.g. night school): _____

Management training background:

Date of last management training program: _____
Length of training (in full-time days): _____
Name of last program: _____
Conducted by: _____

Management experience:

Date joined the Public Service: _____
Date started present position: _____
Total length of management supervisory experience: _____

Performance indicators:

How many hierarchical levels in your Department, (count from the Deputy Minister down to the most junior clerk including you): _____

How many hierarchical levels between you and your Deputy Minister: _____

Current salary level: _____

How many multiple increments have you received in the last five years: _____

How many promotions have you received in the last ten years: _____

Approximate size of the budget you control? _____

Approximate number of staff you supervise either directly or through subordinates _____

Number of direct subordinates _____

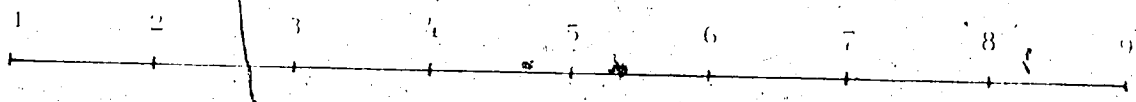
How often do you have dealings with your Deputy Minister? _____

What was the rating for supervisory ability on your last PAO5? _____

Appendix D-2 THE SUPPLEMENTARY QUESTIONNAIRE

ORGANIZATIONAL CLIMATE SURVEY

Organizations differ in the amount of structure they possess. By 'structure' here, we mean simple the formal organization chart but the feeling or 'norms' within the organization. We might consider a scale for 'structure' as shown below:



'Perfectly rigid'

Autocratic leadership: things must be done 'by the book'; Work is broken down to the simplest tasks; the emphasis is on control: all decisions made at the top: a static organization

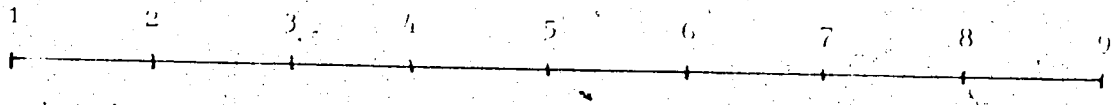
'Perfectly flexible'

Leadership is laissez-faire if apparent at all; people are left very largely to their own devices; the focus is on purpose - methods are up to the individual; most decisions are made at 'the grass roots'; organization is very dynamic

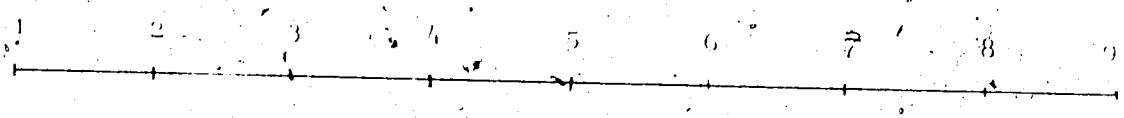
1. At what point on the above scale would your department fall? _____
2. Where would the unit that you head be? _____
3. How about the one your boss heads up? _____
4. Now consider the matter of the degree of influence various people have on your work unit (you and your subordinates). If the total amount of influence is considered as 100%, what percentages would the following people have?

a. You	_____
b. Your boss	_____
c. Your subordinates	_____
d. Your clients	_____
e. Your specialists (D.P.O., accounts, etc)	_____
f. The Minister of your department	_____
g. Your deputy minister and directors	_____
h. Others (please specify)	_____

5. How much authority do you feel you have to make decisions which significantly effect your work group?

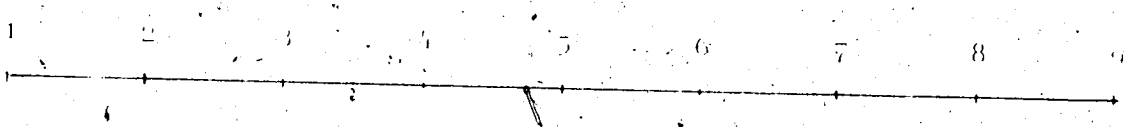


6. How much pressure from other people to get the job done do you feel you are under?



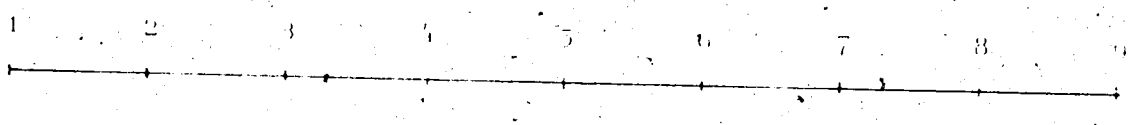
Far too little | Too little | About the right amount | Too much | Far too much

7. How satisfied are you with your present job?



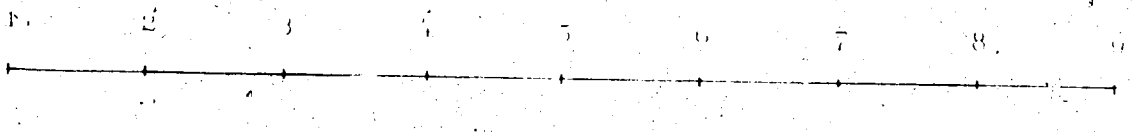
Extremely unhappy | Fairly unhappy | Non-reactive | Reasonably satisfied | Extremely satisfied

8. How much influence do your subordinates feel that you have over your boss?



Absolutely none | Seldom get my way | A moderate amount | Usually get my way | Complete

9. How much influence do you feel you have over your boss?

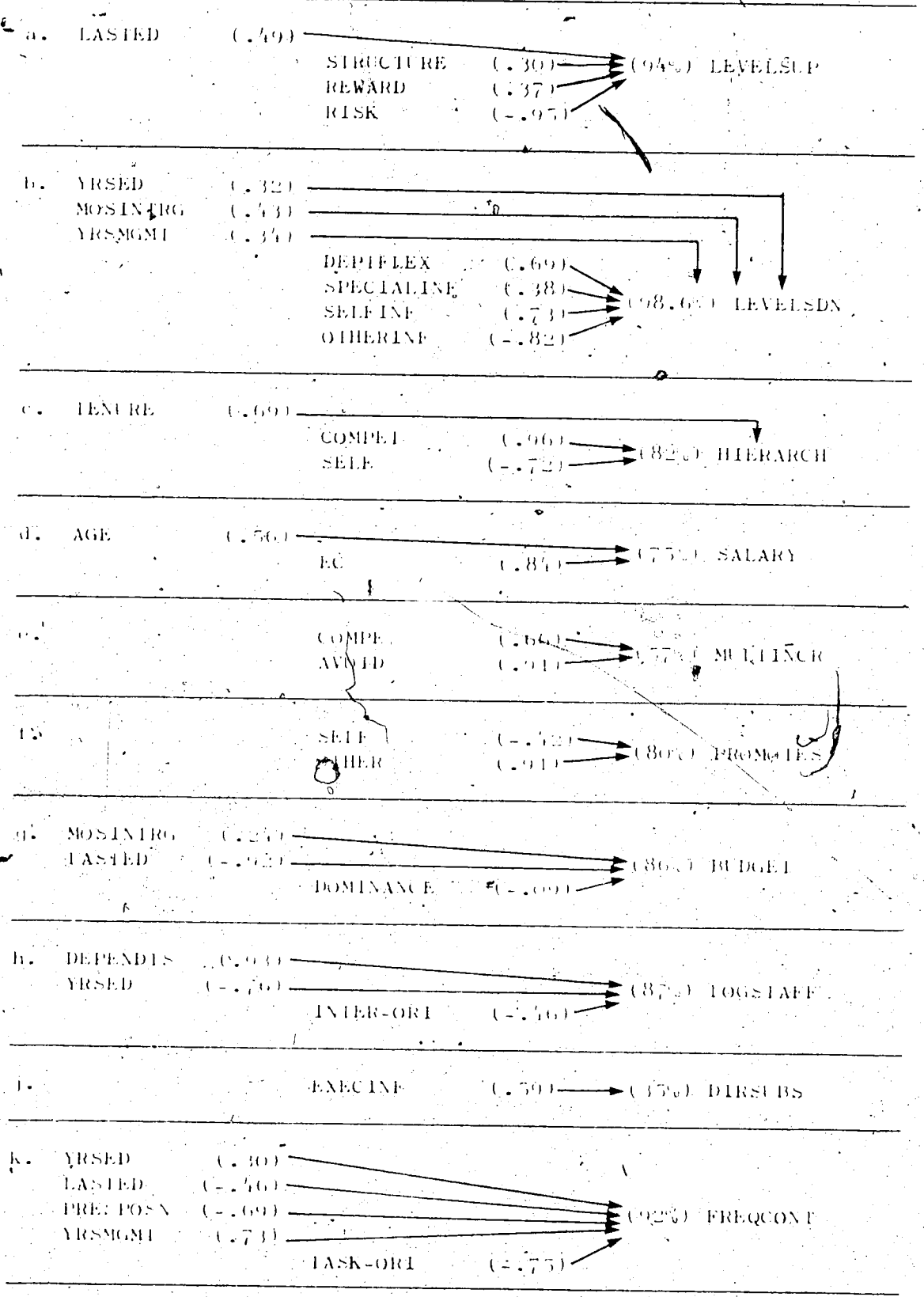


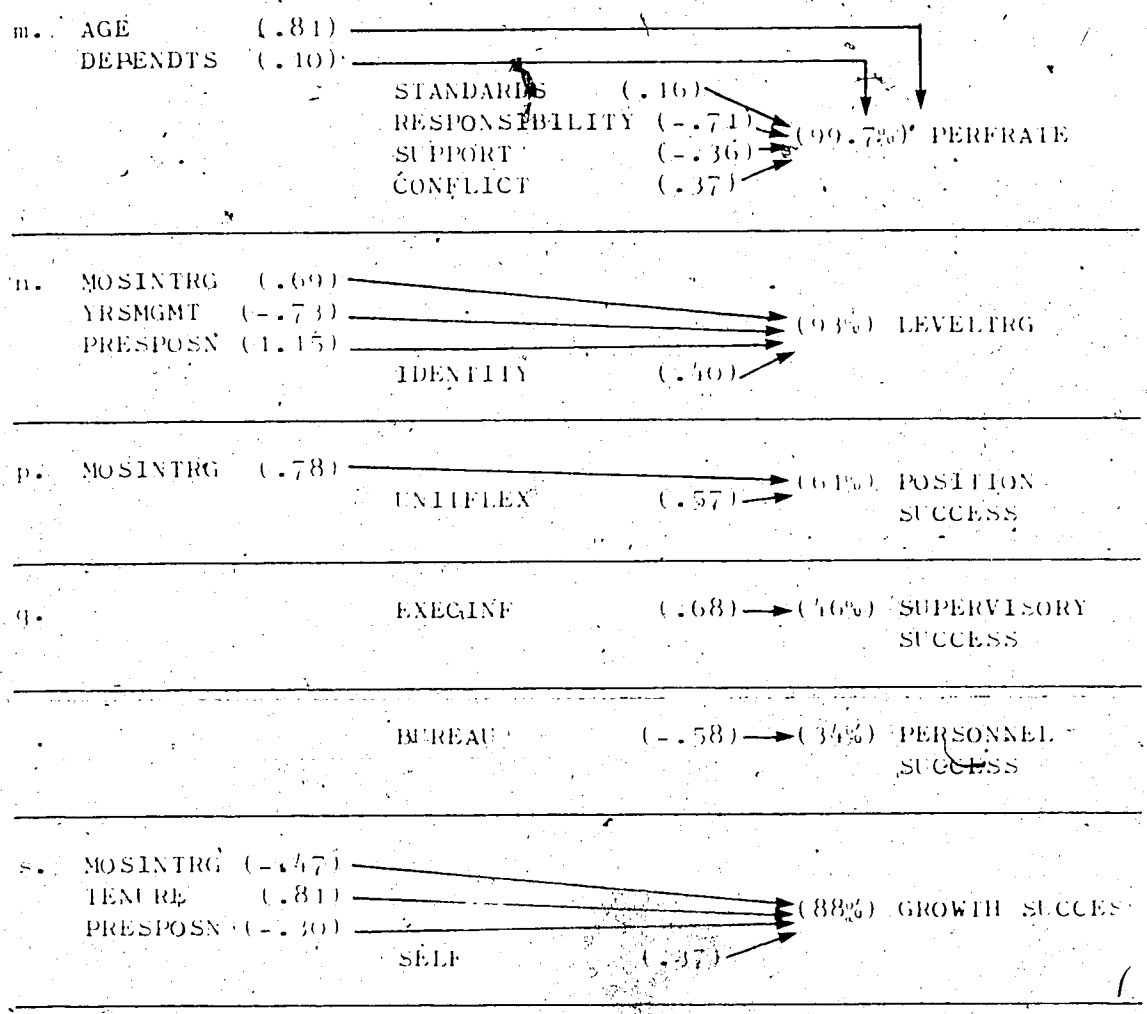
Absolutely none | Seldom get my way | A moderate amount | Usually get my way | Complete

APPENDIX E

Best predictive regressions

Figure 32. Best predictive regressions.




m.
AGE (.81)
DEPENDTS (.10)
STANDARDS (.16)
RESPONSIBILITY (-.71)
SUPPORT (-.36)
CONFLICT (.37)
(99.7%) PERFRATE
n.
MOSINTRG (.69)
YRSMGMT (-.73)
PRESPOSN (1.15)
IDENTITY (.40)
(93%) LEVELTRG
p.
MOSINTRG (.78)
UNITFLEX (.37)
(61%) POSITION SUCCESS
q.
EXECINF (.68)
(46%) SUPERVISORY SUCCESS
BUREAU (-.58)
(34%) PERSONNEL SUCCESS
s.
MOSINTRG (-.47)
TENURE (.81)
PRESPOSN (-.30)
SELF (.37)
(88%) GROWTH SUCCES

VITA

NAME: Brian TUCKER

PLACE OF BIRTH: Liverpool, England

YEAR OF BIRTH: 1941

POST-SECONDARY EDUCATION AND DEGREES:

University of Liverpool
Liverpool, England.
1959-1963 B. Eng.

Bath University of Technology
Bristol, England
1966

University of Alberta
Edmonton, Alberta
1971-1974

HONOURS AND AWARDS:

Graduate Teaching Assistantship
University of Alberta
1973

Civil Service Welfare Fund Graduate Scholarship
University of Alberta
1974

RELATED WORK EXPERIENCE:

Graduate Trainee
Associated Electrical Industries Limited,
Manchester, England
1963-1965

Training Officer
Associated Electrical Industries Limited
Leicester, England
1965-1966

Lecturer (part-time)
Leicester City College
Leicester, England
1965

Technical Training Officer
Rank Xerox Company Limited
London, England
1966-1967

Engineer
British Columbia Telephone Company
Vancouver, British Columbia
1967-1970

Staff Development Officer
Government of Alberta
Edmonton, Alberta
1970-1974

Sessional Lecturer (part-time)
University of Alberta
Edmonton, Alberta
1974

Research and Evaluation Officer
Government of Alberta
Edmonton, Alberta
1974

PROFESSIONAL ASSOCIATIONS:

Member,
American Society of Training Directors