A STUDY OF LEADER BEHAVIOR OF COLLEGE ADMINISTRATORS

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ABSTRACT

A STUDY OF LEADER BEHAVIOR OF COLLEGE ADMINISTRATORS

By

William Charles Wagner

Focusing on administrators in a collegiate setting, this study investigated the relationship between leader consideration and initiating structure with a set of variables including departmental turnover, job satisfaction, and increases in the funding of departments. In addition, this investigation aided in assessing the effectiveness of the Leader Behavior Descriptive Questionnaire (LBDQ) as an instrument for use with leaders in higher education.

Twenty-seven administration departments at Michigan State University were invited to participate in the study. In order to be included in the final analysis, at least three subordinates from each office had to describe the leader behavior of their department head. A sufficient number of responses were obtained from twenty-five departments. Of the total number of 118 responses, 14 were responses from leaders and 104 from subordinates.

The LBDQ was used to measure leader consideration and initiating structure. The rate of turnover of professional staff of each organizational unit over a three year time period was determined by the use of yearly

directories. The rate of increase in a department's budget over a three year time period was calculated with the use of year end financial statements of the institution as well as supplementary information provided by the department head. Subordinate satisfaction was measured by a ten item index developed by the researcher and included questions pertaining to salary, job duties, job security, support facilities, fringe benefits, and others.

Statistical analysis of the data was based on a variety of techniques. The canonical correlation was of major importance in the analysis while an analysis of variance and Pearson product-moment correlation coefficients were also employed.

The obtained primary canonical correlation of 0.8105 indicated a statistically significant relationship between the one theoretical variable made up of consideration and initiating structure and the second theoretical variable made up of the three independent variables of attrition, satisfaction, and funding level. This obtained correlation accounted for 32.85 per cent of the variation in consideration and initiating structure. As part of the canonical correlation analysis, a correlation matrix indicated that high consideration and high initiating structure would be found with subordinates who are satisfied, a high rate of departmental funding, and a low departmental attrition rate. In addition, a regression analysis indicated that for this particular

organizational setting, there was a stronger relationship between initiating structure and the three independent variables than between consideration and the three independent variables.

An analysis of variance indicated that there was no difference between the leaders' scores on the LBDQ and the scores provided by their subordinates. Pearson product-moment correlations indicated that both the leaders and the subordinates responded such that the dimensions of the LBDQ were uncorrelated with each other when the data was treated as if the sample size were one. In addition, a comparison of sample means and standard deviations indicated the LBDQ has the same degree of variability when employed in a higher education setting as it does when used in other types of organizations.

A STUDY OF LEADER BEHAVIOR OF COLLEGE ADMINISTRATORS

By

William Charles Wagner

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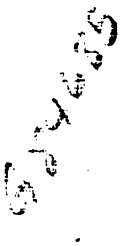

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CHAPTER I

INTRODUCTION

The Problem

Throughout history leadership has been of great interest and concern to man. Theorists, writers, and scientific investigators have all dealt with the necessary requirements for successful leadership. Despite such attention and commitment to this area, very few definitive statements can be made regarding this area of interest. Looking at modern empirical studies dealing with leadership, there has been a remarkable change in approach. Earlier research focused on the characteristics of individuals in an attempt to find common leadership traits. These studies often conflicted with one another due to the difficulty in defining and measuring variables and the various theoretical and methodological approaches being taken by researchers. By the late 1940's this approach was losing appeal as evidenced by reviews by Stogdill[1] and Gibb.[2] These seemed to indicate that the trait approach was of little value so long as it continued to ignore the situation in which leadership took place.

Researchers then began to focus on the situation or setting as it relates to the study of leadership. Adequate measuring tools also began to receive considerable attention.

One of the instruments developed for the purpose of providing objective descriptions of leader behavior in numerous organizational settings was the Leader Behavior Descriptive Questionnaire (LBDQ).[3]

The LBDQ consists of two dimensions--consideration and initiating structure. The extent of the leader's supportive or expressive behavior would be similar to the dimension of consideration whereas the dimension of initiating structure refers to behavior that is instrumental or task oriented. Leaders receiving high consideration scores have been found to have organizations with low turnover and grievance rates.[4] A positive relationship between consideration and subordinate satisfaction has been found in industrial settings,[5] military settings,[6] and educational institutions.[7]

Leaders rated high on initiating structure have been found to have productive work groups and to receive high ratings by superiors.[8] In an industrial setting, however, high scores in initiating structure have also been related to more grievances and turnover[9] although supervisors scoring high on both initiating structure and consideration did not receive increases in grievances or turnovers.[10]

It is clear that leaders are evaluated differently by superiors and subordinates.[11] Superiors give high ratings to leaders who are high on instrumental behavior whereas subordinates tend to give high evaluations to leaders who are supportive and considerate. Of additional interest is the extent of disagreement between the leader's self-description

of his behavior and the descriptions provided by others. If there is a great amount of disagreement, the leader may not be communicating his intended behavior explicitly, or others may be misinterpreting the leader's actions. Whatever the reason for the differences in perceptions, extremely divergent perceptions could present a problem if one set of perceptions or judgments was considered more valid than other subjective information. Thus, there is a need to gather additional measurements on variables not based on superior or subordinate perceptions which may assist in determining the kind of behavior predictive of effective leadership.

In addition, Halpin and Winer[12] and Fleishman and Harris,[13] among others, have shown that leaders scoring high on both dimensions tend to receive high ratings by superiors and to have good organizational morale. The high consideration-high initiating structure pattern, however, may not apply to all organizational settings.[14] Other kinds of relationships may be more predictive in a specific setting. In an industrial organization, for example, Fleishman and Harris[15] found that below a certain level of consideration and above a certain level of initiating structure employee grievances and turnover increase.

The studies mentioned above indicate that specific types of organizations may have consideration, initiating structure patterns that cannot be generalized to all other types of organizations. For this reason, the LBDQ needs to be used among groups and organizations not previously researched.

Only through more widespread research will it be possible to determine to what extent various consideration-initiating structure patterns are predictive across samples.

The situational approach to leadership provided the framework for objective measuring instruments, such as the LBDQ, to be developed. Research in the field has progressed but we are far from defining or predicting the variables or conditions for successful leadership. This is particularly true in those fields that have not been given a great deal of attention by investigators. It is the intention of this study to address itself to some of these problems.

Purpose

Focusing on administrators in a collegiate setting, this study investigated the relationship between leader consideration and initiating structure with a set of variables including departmental turnover, job satisfaction, and increase in departmental budgets. In addition, this investigation aided in assessing the effectiveness of the LBDQ as an instrument for use with leaders in higher education.

Need for Study

The need for this study exists at a number of different levels. In a very general sense, there is a need to know more about the behavior of individuals who are in a position of leadership. Increased knowledge of leader behavior is needed before researchers are able to define the conditions under which various leadership styles are effective or ineffective.

Although numerous studies using the LBDQ have focused on leaders and leader behavior in military, industrial, and social organizations, very little data has been gathered in the field of higher education with this instrument. A review of the literature indicates that Hemphill[16] is the only researcher who has focused on leaders in a collegiate setting. The lack of information available on leaders in higher education is somewhat ironic considering the tremendous amount of research that is generated from within the field. Higher education has become such a central part of our society, is so complex, and involves so many millions of people, and so many billions of dollars, that we must devote greater attention to leadership in educational institutions.

Greater information regarding leaders in education is not only useful within educational organizations but can also be used to compare with the behavior of leaders in other types of organizations. Such comparisons could help to indicate whether or not particular leadership styles are most effective in certain kinds of organizational structures. It may be that successful leaders in a specific type of organization would have to modify their patterns of behavior in order to be equally effective in other kinds of organizations.

At another level we need to know much more about different leadership styles within the field of higher education. Leaders of the administrative staff of an institution, for example, may display a type of behavioral pattern that is quite different from the behavior of chairmen of faculty

departments. And both of these leadership styles may be incongruous at the level of the president and other executive positions. Thus, attention must be given to different organizational environments that might require various styles of behavior if the person is to be effective.

While one study cannot deal with all of these broad problems, this investigation will contribute to the field by determining whether or not the LBDQ is an effective instrument for use in the field of higher education. In addition, this study permits the comparison of results with studies from other types of organizations that have used similar variables.

As previously mentioned, studies by Halpin[17] and Stogdill and Coons[18] indicated that leaders are evaluated differently by superiors than by subordinates. Their divergent judgments indicate a need to analyze other variables that are not based on individual perceptions which may assist in determining the kind of behavior that is predictive of effective leadership. The extent of departmental turnover and the increase in the departmental budget relative to other departments are two such variables. Although turnover has often been used in such studies, the extent of funding is being introduced as an exploratory variable.

In conclusion, additional studies are needed in the area of leadership research, particularly in the understudied field of higher education. We need to analyze and compare the behavior of leaders within higher education as well as

other organizational structures. Also more research must be done using variables not based upon perceptions by individuals if leadership research is to become more sophisticated. While this study will not eliminate the above as needs, it is intended to address itself to these concerns.

Setting

This study was conducted at Michigan State University. Individuals serving as the formally designated leaders of administrative departments or divisions, in contrast to faculty departments, constituted the basic unit of study. The potential respondents were in positions classified as being part of the administrative-professional staff of the organization. In general, such a classification indicated that an individual had administrative and/or supervisory duties. Since there are no clerical or technical employees involved, an appropriate classification for this study would be at the middle-management or second level of the organizational structure.

Description of Specific Problem

All of the respondents in this study can be considered middle managers since they administer programs and/or supervise other personnel. Since this study deals with only administrative professionals and their superiors, this investigation centers on the second level of the organizational structure as compared to studies by Fleishman and Harris[19] and Danielson and Maier[20] which are first level investigations.

Possibly as a result of the difficulty in obtaining large numbers of subjects at the second organizational level, most of the research using the LBDQ has been conducted at the first organizational level. This makes a comparison of results using only second level studies extremely tenuous if not impossible. For this reason, results from first and second level studies will be used in the review of the literature and in the discussion of the results of this study.

As previously mentioned, the LBDQ has not been extensively used in higher education. Another facet of the study, then, is to determine whether the instrument appears to be a satisfactory research tool in this type of organization. The basis for the determination will be the extent to which it has predictive validity; i.e., correlates with non subjective indices of leadership quality. In addition, the range and variability of the scores obtained in this study will be compared with the range and variability of the scores from other types of studies.

Other research has demonstrated that there is a general discrepancy between leaders' self-descriptions and descriptions by subordinates. This discrepancy does not mean that the self-descriptions are more or less accurate but only that leaders see themselves differently than do subordinates. This study will analyze the discrepancy between leaders' self-descriptions and those provided by subordinates to determine whether any discrepancy is statistically significant.

Much of the research on leadership behavior has attempted to determine the extent to which such behavior is "effective." Effectiveness is often measured by the judgment of superiors together with less qualitative variables such as turnover, grievance rate, and productivity.[21] If leadership research is to progress, however, it is necessary to move away from criteria based on judgments and rely more on variables that are less subjective, more quantifiable, and more stable. For this reason, the variable of departmental funding is being introduced into the study. Since all of the departments in the study are part of a larger organization, they are, in a sense, competing with each other for resources. One of the major resources of each department is the amount of money it receives for its budget. And at the same time this is a very limited resource. According to Yuchtman and Seashore,[22] the organization's success over a period of time in competition for resources can be regarded as an expression of its overall effectiveness.

It is not the intention of this study, however, to put forth the idea that organizational effectiveness is unidimensional and is represented by level of funding. Like any singular variable, extent of funding has weaknesses that in particular cases could result in erroneous conclusions. A new department, for example, is likely to receive a greater share of the budget than an established one. Other departments could be by their nature very unstable and grow and decline in direct proportion to outside influences. In a growth period, an

organization's engineering or construction division is likely to be funded quite heavily. Once the desired buildings have been constructed, however, the level of funding of such a department will probably decrease.

The above examples point out the necessity for a researcher to avoid moving from a general situation to a particular case without being sensitive to other extraneous factors that may influence the particular case. Also a variable that seems to have validity when used with other criteria may not be as accurate if considered by itself. Thus, level of funding when considered alone, may not be a very good indicator of the quality of a department. By using level of funding along with such proven variables as turnover and job satisfaction, however, one more dimension might be added to a determination of leader effectiveness. Thus, the introduction of funding level is to be considered an exploratory variable for an area which is in need of establishing criteria for successful leadership.

FOOTNOTES--CHAPTER I

[1]Ralph M. Stogdill, "Personal Factors Associated with Leadership: A Survey of the Literature," Journal of Psychology, XXV (January, 1948), 35-71.

[2]C. A. Gibb, "The Principles and Traits of Leadership," Journal of Abnormal and Social Psychology, XLII (July, 1947), 264-271.

[3]Ralph M. Stogdill and Alvin E. Coons, eds., Leader Behavior: Its Description and Measurement (Columbus, Ohio: Bureau of Business Research, 1957).

[4]Edwin A. Fleishman and Edwin F. Harris, "Patterns of Leadership Behavior Related to Employee Grievances and Turnover," Personnel Psychology, XV (Spring, 1962), 43-56.

[5]L. E. Danielson and Norman R. F. Maier, "Supervisory Problems in Decision Making," Personnel Psychology, X (Summer, 1957), 169-180; Robert J. House, Alan C. Filley, and Steven Kerr, "Relation of Leader Consideration and Initiating Structure to R and D Subordinates' Satisfaction," Administrative Science Quarterly, XVI (March, 1971), 19-30.

[6]Aaron J. Spector, Russell A. Clark, and Albert S. Glickman, "Supervisory Characteristics and Attitudes of Subordinates," Personnel Psychology, XIII (Autumn, 1960), 301-316; Andrew W. Halpin, "The Leadership Behavior and Combat Performance of Airplane Commanders," Journal of Abnormal and Social Psychology, XLIX (January, 1954), 19-22.

[7]John K. Hemphill, "Leadership Behavior Associated with the Administrative Reputation of College Departments," Journal of Educational Psychology, XLVI (November, 1955), 385-401.

[8]Andrew W. Halpin and B. James Winer, "A Factorial Study of the Leader Behavior Descriptions," in Ralph M. Stogdill and Alvin E. Coons, eds., Leader Behavior: Its Description and Measurement (Columbus, Ohio: Bureau of Business Research, 1957), pp. 39-51; Bernard M. Bass and Edward A. Dunteman, "Behavior in Groups as a Function of Self, Interaction, and Task Orientation," Journal of Abnormal and Social Psychology, LXVI (June, 1963), 419-428; Edward A. Dunteman and Bernard M. Bass, "Supervisory and Engineering Success Associated With Self, Interaction, and Task Orientation Scores," Personnel Psychology, XVI (Spring, 1963), 13-21.

[9]James Brianas, "Between Employees and Supervisors: Three Cases in Point," Personnel Journal, XLIX (November, 1970), 892-899.

[10]Fleishman and Harris, "Patterns of Leadership Behavior Related to Employee Grievances and Turnover," 43-56.

[11]Andrew W. Halpin, "The Leader Behavior and Leadership Ideology of Educational Administrators and Aircraft Commanders," Harvard Educational Review, XXV (Winter, 1955), 18-32; Stogdill and Coons, eds., Leader Behavior: Its Description and Measurement.

[12]Halpin and Winer, "A Factorial Study of the Leader Behavior Descriptions," 39-51.

[13]Fleishman and Harris, "Patterns of Leadership Behavior Related to Employee Grievances and Turnover," 43-56.

[14]Halpin, "The Leader Behavior and Leadership Ideology of Educational Administrators and Aircraft Commanders," 18-32.

[15]Fleishman and Harris, "Patterns of Leadership Behavior Related to Employee Grievances and Turnover," 43-56.

[16]Hemphill, "Leadership Behavior Associated with the Administrative Reputation of College Departments," 385-401.

[17]Halpin, "The Leader Behavior and Leadership Ideology of Educational Administrators and Aircraft Commanders," 18-32.

[18]Stogdill and Coons, eds., Leader Behavior: Its Description and Measurement.

[19]Fleishman and Harris, "Patterns of Leadership Behavior Related to Employee Grievances and Turnover," 43-56.

[20]Danielson and Maier, "Supervisory Problems in Decision Making," 169-180.

[21]Halpin and Winer, "A Factorial Study of the Leader Behavior Descriptions," 39-51; Dunteman and Bass, "Supervisory and Engineering Success Associated With Self, Interaction, and Task Orientation Scores," 13-21; Fleishman and Harris, "Patterns of Leadership Behavior Related to Employee Grievances and Turnover," 43-56.

[22]Ephraim Yuchtman and Stanley Seashore, "A System Resource Approach to Organizational Effectiveness," American Sociological Review, XXXII (December, 1967), 891-903.

CHAPTER II

REVIEW OF THE LITERATURE

The concept of leadership has occupied a central position for administrative theorists and laymen throughout modern history. Not confined to any particular academic discipline, the concept has been the topic of study by investigators representing a kalidescope of academic backgrounds. Given the extent of attention focused on this area of study, one would assume that there are relatively few facets of leadership research that cannot be explained in an empirical or definitive manner. However, this is not the case. As stated by Browne and Cohen,

> . . . . there is now a great mass of "leadership literature" which, if it were to be assembled in one place, would fill many libraries. The great part of this mass, however, would have little organization; it would evidence little in the way of common assumptions and hypotheses; it would vary widely in theoretical and methodological approaches.[1]

Research in the area of leadership has followed a shotgun approach. As pointed out by Browne and Cohen, the result has been a mass of content without any central focus to interrelate all the fragmented parts. Because of such lack of organization and the sheer bulk of material written in this field, this review will deal with limited aspects of the field. After a brief description of the trait approach previously used

in leadership research and related problems, a variety of studies illustrative of the situational approach to leadership will be discussed. Most of the studies selected will have employed the Leader Behavior Descriptive Questionnaire as the measuring tool. Some additional investigations will also be mentioned that are particularly related to the content or theoretical approach being taken in this study. By limiting the review in this manner, some comparisons, relationships, and understanding can be achieved.

The individual-centered or "trait" approach characterizes earlier research and focused on characteristics of individuals. Particular studies often resulted in conclusions that were in conflict with one another due in part to the tremendous difficulty of defining and measuring the characteristics or traits. So many studies focusing on innumerable variables were conducted that other researchers began to try and make sense out of the research by reviewing and organizing investigations. In 1948, for example, Stogdill reviewed the literature with respect to the trait approach and classified the factors studied under the following five headings: (1) Capacity--which included such variables as intelligence, judgment, originality, and verbal facility; (2) Achievement--composed of categories such as knowledge, scholarship, and athletic accomplishments; (3) Responsibility--variables such as persistence, dependability, self-confidence, initiative, and aggressiveness were included; (4) Participation--made up of activity, sociability, cooperation, adaptability, and

humor; and (5) Status--which included popularity and socio-economic factors.[2]

By looking at Stogdill's classification it is not difficult to understand why individual studies were reporting conflicting results. The variables were often defined and measured in numerous ways, thus making it extremely difficult to build upon previous research in any systematic manner.

Gibb also conducted a similar review of the literature and concluded that

> . . . . in relation to the individual, leadership is not an attribute of the personality but a quality of his role within a particular or specified social system. Viewed in relation to the group, leadership is a quality of its structure.[3]

Thus, Gibb argued that the trait approach to leadership was of little value so long as it continued to ignore the situation in which leadership takes place.

The trait approach began to receive less attention among researchers, but enough concern was still being given to this theory to justify another review of the literature. Writing in Psychology in the World Emergency, Fillmore H. Sanford concluded that there were either no general leadership traits or

> in a specific situation, leaders do have traits which set them apart from followers, but what traits set what leaders apart from what followers will vary from situation to situation.[4]

Sanford's summary is representative of the viewpoint researchers have held of the trait approach since the early

1950's. Despite all the studies that had focused on this theory, reliable and conclusive results could not be obtained by looking only at the individual. If the trait approach accomplished anything, it was the realization that the situation in which leadership takes place is of crucial importance.

The situational approach is exemplified by an extensive series of studies conducted by a group of researchers from Ohio State University during the 1950's. In cooperation with the naval branch of the armed forces, research was conducted over a ten year period and resulted in a number of published monographs dealing with different facets of the empirical investigation of leadership.

Situational Factors in Leadership, the first monograph of the Ohio State Leadership Studies, was published in 1949 and reflected the emphasis of prior research on the leader as an individual as well as the growing interest in the importance of the situation in which a leader functions.[5] A 70 item questionnaire was developed that measured 15 group dimensions. The 500 respondents completing the questionnaire were to report the composition of a group in which they were a member, describe their relation to the group, judge the adequacy of the behavior of the group's leader, and report the frequency of the leader's behavior on the 70 items making up the questionnaire.

Analysis of the questionnaire seemed to indicate that ideal leadership in relation to the group is reflected in maintaining the group as a unit whereas ideal leadership in relation

to the individual is reflected in satisfaction in group membership.[6] Because the study was exploratory in nature, no attempt was made to refine the conclusions in any operational manner that would apply to large numbers of different groups.

A number of weaknesses were inherent in the study, such as the different types of organizations and leaders represented by the respondents and the validity of having one individual from a specific group judge the leader's adequacy and frequency of behavior. The report was a valuable contribution, however, in terms of being one of the first major attempts to consider the significance of a large number of situational factors and the adequacy of leadership.

One should also note that ideal leadership as described in this study seemed to describe the ability to bring together or resolve differences between the group and the individual. Despite the weaknesses of the study, these two forces are still the focus of current leadership research. Weissenberg and Kavanagh for example, suggested that

> effective leadership may require the solution of a conflict which may occur between fulfilling the production goals of the organization or satisfying the socio-psychological needs of the subordinates.[7]

Although twenty-three years have passed since Situational Factors in Leadership was published, ideal leadership is still being described in the same manner. More will be said about the group and individual differences and leadership ability when the Leader Behavior Descriptive Questionnaire is discussed.

Another study evolving from the Ohio State Leadership Studies focuses on the pattern of behavior exhibited in a leadership position.[8] It was felt that this would be related to the demands made upon the leadership position, the structure of interactions among group members, the status of the leader and the performance of the members. Although the research was concerned with quite a broad array of variables, few standardized forms or scales were used in carrying out the research. Thus, cross validation of the results was more difficult because of the lack of standardized instruments.

In general, the methodology consisted of an open-ended interview, formal organization charts, sociometric ratings in terms of work patterns, descriptions of the leader's behavior, effectiveness ratings of subordinates by superiors, and a form called the RAD scales. This last scale attempts to measure the extent of an individual's responsibility, authority, and degree of delegation of duties. From the methods utilized, it appears that only the RAD scales could be strictly interpreted as a standardized measurement. The others seem to be more subject to misinterpretation, perceptual bias, halo effect, and other measurement problems. As a result, most of the conclusions should be considered very exploratory in nature and require further supportive research before definitive generalizations could be made.

One of the findings of the study not only demonstrated the problem of using less standardized methods such as those

described above, but also served as a caution for future investigators. The specific result was that "subordinates who are not performing up to their own expectations tend to describe their superiors in less than favorable terms. . . ."[9] A review of studies by Campbell, Halpin, Katz and Kahn, Bass and Dunteman, House, Filley, and Kerr,[10] and others indicate that superiors and subordinates use different criteria when judging leader effectiveness. In addition to those differences, this particular study indicates that a subordinate's self-esteem can also influence the description of his leader. It is also possible that the expectations of superiors could also be an influencing factor in judgments of leader performance. In general, these various findings seem to indicate that descriptions, particularly evaluations by others, need to be interpreted with as much caution as is generally given to the interpretation of self-descriptions or evaluations.

Scott conducted a study concerned with the degree to which the formal structure of an organization is correctly perceived by the members of the organization.[11] The members of ten submarine crews were instructed to place themselves, their subordinates, their peers, and their superiors in a formal organization chart. He found that 40 per cent of the total perceptions were in error of the formal relationships as determined by the judgment of military officers with superiors being perceived most accurately and peer groups perceived least accurately.[12]

Scott attempted to determine whether perceptual error of the organization affected the efficiency of the ships by having them ranked by a sample of military officers. This aspect of the study, however, was quite weak in that the measurement used for ranking the ships cannot be adapted for use with other types of organizations, the reliability and validity of the instrument was not adequately tested, and the procedure of ranking in itself limits statistical treatment to techniques appropriate for ordinal data. For these reasons, this investigation was unable conclusively to determine whether the type or extent of perceptual error of the formal organizational structure has a relationship to the efficiency of the organization. Improved procedures for establishing and measuring an organization's effectiveness are necessary before any definite conclusions regarding this matter can be made and then such a study would only be correlational in nature.

Stogdill employed an adaptation of Moreno's technique of sociometry in order to study observed or reported interactions or relationships between two or more persons in an organization.[13] By asking each subject who they worked with the most, he was able to compare the informal working patterns in relation to the formal organization as presented by organization charts. Although he concluded that structures deviating from the formal organization at times may increase the efficiency of the organization, the subsequent statistical analysis did not indicate whether such increases in efficiency were more than chance events.

Another aspect of the study concerned perceived levels of responsibility and authority and how these perceptions affect the working relationships within the organization. The RAD scales were used to measure level of responsibility, authority, and extent of delegation of authority. Although the analysis resulted in few statistically significant correlations, Stogdill pointed out the following trends. If seniors have a great deal of responsibility, juniors assume more responsibility and authority and delegate less to assistants. On the other hand, if seniors are perceived as having a great deal of authority, juniors perceive themselves as having less responsibility and delegate little to assistants. When seniors delegate readily, juniors perceive themselves as having more responsibility and authority and delegate more to assistants.[14] It was interesting to note that seniors who rate themselves high in responsibility and/or authority perceive aspects of their job as being confusing, obscure, or of a threatening nature.[15] Stogdill does not go beyond these trends in terms of studying whether or not they have a positive or negative effect on the working relationship between seniors or juniors. As a result, few conclusions can be made in reference to effective leadership until further research has been conducted.

Donald T. Campbell conducted a study which focused on the effects of leadership upon a group.[16] The experimental design employed was a static correlational technique. This

methodology deals with comparable groups existing at any time and looks at correlations between the behavioral attributes of a given person in the group, in this case the leader, and attributes of the entire group. The correlations were produced from self-descriptions by the leader and descriptions provided by subordinates. Although the descriptions by subordinates produced higher correlations, Campbell found they were less usable than the self-descriptions for the following reasons: (1) The descriptions by subordinates were more subject to a halo effect. (2) They were more stereotyped in terms of a position rather than sensitive to the different behaviors of individuals occupying the positions. (3) There was more methodological overlap with criterion measures using subordinate descriptions, and (4) They displayed a more systematic bias than did the self-descriptions.[17]

Of all the self-description measures, Campbell found the delegation scale and the membership scale to be the most significant. He concluded that "those persons who see themselves as delegating more authority to their subordinates, and those who see themselves as socially participating in group activities, are the best leaders."[18] This conclusion, however, must be considered as exploratory until further research is able to cross validate it.

Campbell also pointed out that the delegation and membership scales do not correlate with the morale of the group. Accepting Campbell's conclusion then means that good leadership

and group morale may be independent. Although Campbell attempts to draw a parallel between this finding and the research of Katz and others,[19] which showed that group morale and productivity can be independent, an additional possibility must be considered. Whereas group morale may be independent of productivity, good leadership may not be independent of productivity.

The area of Campbell's research merits further research, using a more sophisticated set of criteria of effective leadership. One consideration that must be taken into account, however, is that static correlation studies do not consider the passage of time. Therefore, the possibility exists that a leader's behavior is a result of rather than a cause of productivity, morale, or other variables operating within the group.

Leadership and Role Expectations is a report of a study conducted by Stogdill, Scott, and Jaynes, which focused on the relationships between expectations and performance.[20] A naval air research and development center served as the organization and forty-seven civilian and military administrators were the subjects of the study. Through the use of interviews, scales, and checklists, the subjects were asked to describe what they do and what they ought to do on 45 items of work performance, leader behavior, responsibility, and authority. The "real" and "ideal" behaviors for each subject were also described by two subordinates. In general, it was found that juniors and seniors were more in agreement as to what seniors ought to do

than what they did and that the behavior of subordinates was differentially related to the variance in the behavior of their superiors.[21] Since the study did not attempt to determine if the differences of perceptions and behavior between subordinates and superiors had any effect on the performance, morale, or other dimensions of the organization, the investigation is of limited usefulness. Also, the research tools used to gather the data were designed for a military organization and might not be valid or produce similar results if used with different types of organizations.

A very difficult study investigating factors involved in the prediction of work performance was undertaken by Stogdill, Shartle, Scott, Coons, and Jaynes.[22] The researchers attempted to determine if predictions of future job performance could be improved by taking into account the nature of the job to be done, as well as the nature of the man who is about to undertake the job. In order to effectively study the problem, jobs had to be held as constant as possible while subjects were rotated among positions. The sample consisted of twenty-one Navy officers who were about to be transferred and the individuals who occupied the positions into which the transferees were to be assigned. In addition, data was collected on 339 subjects who were peers, subordinates, or superiors of the transferees. The data consisted of items relating to work performance, responsibility, leader behavior, authority, delegation, and proportion of time spent in various activities. The predictive

instrument consisted of the judgments of military and civilian administrators who were designated as experts. The prediction table consisted of: (1) responsibility, authority, and delegation scores, (2) proportion of time estimates spent in administrative duties, and (3) leader behavior description scores. Each predictor had available the scores of the occupants and the original scores of the transferees, and was predicting the scores of the transferees after they had been in their new position for six months.

Because the study took place during the Korean War, the follow-up of the 21 transferees resulted in only seven being in positions in which they were expected to be located. Thirteen of the other subjects for which the investigators had collected data, however, were occupying positions that had been studied, so that the final sample consisted of twenty officers.

The average correlation coefficients between the predicted scores and the follow-up scores on 43 items ranged from -.31 to .76, with twelve of the items significant at the .05 level.[23] After internally analyzing the data, the researchers did determine that improvement of predictions of specific items would require either an emphasis of the transferee's score or the occupant's score in no consistent pattern except on items involving individual effort, in which case an emphasis of the occupant's score would increase prediction.[24] This conclusion, however, needs to be cross validated with additional research. In addition, the investigators did conclude that

there is a "tendency for transferees to act in their new jobs as they acted in their old jobs in their interactions with other persons, but to act more like the previous occupants of their new jobs in work involving individual effort. . . ."[25]

This study must be regarded as very exploratory in nature, due to the extremely small sample of subjects and the complexity of the problem researched. In addition, the events taking place within the military as a result of the Korean War may have served as an intervening variable in the study. Thus, it is not possible to determine whether the subjects or the positions were under different types of demands than would be the case if the study was conducted during a less stressful period of time. Another possible procedural weakness was the impossibility of determining whether the positions to which the transferees were assigned were stable or constant with respect to duties and responsibilities by the time the follow-up data was gathered. Despite these and other procedural weaknesses, the problem is one that is worthy of additional research, particularly in positions where either the occupant's individual effort or his manner of interacting with others could be a major factor in his effectiveness. A great deal of time, effort, and money could be saved if predictions of future job behavior could be improved.

Quite an involved study dealing with the basic problems of administrative performance was conducted jointly by Columbia University and Educational Testing Service.[26] Twenty sessions

of the experiment were held throughout the country involving over 200 elementary school principals as the subjects. The principals were presented with problems typical of their positions and their subsequent actions were evaluated for effective behavior. Each session of the study lasted one week during which the principals selected from that particular region lived at the experimental laboratory and went through simulation of their administrative tasks. Little can be gathered from the study, however, since its basic weakness was the total reliance upon task simulation. The subjects knew they were involved in an experiment and could control their responses accordingly. In addition, it is not possible to determine how closely the tasks did simulate actual problems confronting the subjects. For these reasons, as well as the expense involved in the project, it is unlikely that additional large scale research will attempt to duplicate or expand on this study using similar procedures.

Part of the difficulty in building a body of knowledge regarding the study of leadership has been the lack of reliable and valid measuring instruments. Many of the researchers have adapted surveys or questionnaires and other material to a particular project, but it has either not been adequately tested before being used or it cannot be easily adapted for use with different types of subjects or organizations. Many of the studies discussed previously must be considered exploratory in nature because the measuring instruments have not been used in

sufficient numbers of different types of studies to determine their adequacy. One measuring instrument that has received considerable attention, however, is the Leader Behavior Descriptive Questionnaire (LBDQ). Because this instrument has received considerable use and is of great importance to the study being presented, attention needs to be given to the instrument and the research in which it has been used.

The Leader Behavior Descriptive Questionnaire was developed during the Ohio State Leadership Studies as a result of the hypothesis which stated that "performance in a position of leadership is determined in a large part by demands made upon the position."[27] One hundred and fifty items were developed which corresponded to ten dimensions of leader behavior. Some of the dimensions include: (1) initiation--the frequency with which the leader originates or resists new ideas; (2) representation--the extent to which the leader defends or advances the interests of the group; (3) organization--the extent to which the leader structures his work or the work of others in the group, and (4) recognition--the degree of approval or disapproval expressed by the leader.[28]

After testing the instrument and revising some of the items, it was discovered that instead of ten separate dimensions, two factors emerged which could explain most of the common factor variance. The initiation factor made up 33.6% of the common factor variance and consideration consisted of 49.6% of the common factor variance.[29] The two dimensions of

initiating structure and consideration were defined in the following manner:

> Consideration: Reflects the extent to which an individual is likely to have job relationships characterized by mutual trust, respect for subordinates' ideas, and consideration of their feelings. A high score is indicative of a climate of good rapport and two-way communication. A low score indicates the supervisor is likely to be more impersonal in his relations with group members.
>
> Initiating Structure: Reflects the extent to which an individual is likely to define and structure his role and those of his subordinates toward goal attainment. A high score in directing group activities through planning, communicating information, scheduling, trying out new ideas, etc.[30]

Factor analysis indicates that the two dimensions are orthogonal, which is generally defined as meaning or implying that consideration and initiating structure are independent. If the two factors are independent, then a leader's actions on one dimension have no bearing on his behavior on the other dimension. Given the independence of the two factors, and the above definitions, a leader would want to score high on both dimensions. It is interesting to note that the individual who does score high on both dimensions would then fulfill the previously mentioned definition of ideal leadership that was stated in the 1949 monograph entitled Situational Factors in Leadership. Such a leader would be able to attain the production goals of the group or organization as well as satisfy the various needs of the individuals within the organization.

A number of empirical studies, however, have found a relationship between the two dimensions of consideration and

initiating structure. The results of these studies suggest that the leader's actions on one dimension are correlated to some extent with his actions on the other dimension. Thus as a theoretical construct and in some settings the two dimensions are found to be independent, while in other organizations the dimensions could be correlated. When the two dimensions are substantially correlated, this would indicate that one dimension might be almost as good a predictor by itself and little good would be gained in predictability by adding the second dimension.

In a study involving educational administrators and aircraft commanders, Halpin[31] found a correlation of .13 between consideration and initiating structure for the descriptions of administrators. However, in another study focusing only on airplane commanders, Halpin[32] reported a correlation of .45 between the two dimensions of consideration and initiating structure. One of the few negative correlations was reported by Fleishman and Harris[33] in an industrial study which indicated the correlation between consideration and initiating structure among foremen was -.33. Lowin and others[34] also found consideration and initiating structure to be interrelated in a controlled laboratory experiment while Seeman[35] reported a correlation of .28 between consideration and initiating structure when elementary teachers described their superintendents. From the above examples, it is apparent that a wide range of correlations between consideration and initiating

structure have been found by researchers. It appears that the type of institutional setting and/or the type of describer may make some difference in the association between the scales. If this is the case, it means that in some settings a second dimension might result in an increase in predictive ability whereas in other circumstances one of the dimensions might not add a great deal to the results.

Weissenberg and Kavanagh[36] discussed the independence of initiating structure and consideration in a general review of the literature and indicated that the position or level of the describers in the organization could be an important factor. They found that initiating structure and consideration were significantly correlated in 13 of 17 studies conducted at the first level of organization in which supervisors direct the work activity of non-supervisory employees while only 2 of 7 studies were correlated at the second level.[37] This second organizational level indicates a movement toward the top of the organization. At this level managers direct the work activity of subordinate managers or supervisors. Since most organizations have relatively few employees at the second level in comparison to the number of first level employees, it is more difficult to conduct a study containing sufficient numbers of subjects at higher organizational levels. According to the review by Weissenberg and Kavanagh, it seems that the two scales of the LBDQ are less likely to be related at the second organizational level.

Weissenberg and Kavanagh also looked at the institutional setting as another condition that might affect the relationship between consideration and initiating structure but only compared studies done in either military or industrial settings. Education as an institutional setting was not included in their comparison due to the lack of studies conducted within this type of organization. Thus, there seems to be a need for more research to be done in settings other than industry or the military before one can determine if the dimensions of the LBDQ are more likely to be intercorrelated when used in some specific types of organizations rather than others.

The concept of consideration was earlier defined and refers to leader behavior that is supportive, personal or expressive in nature. Previous research has indicated that consideration and measures of subordinate satisfaction are positively related.[38] In an industrial setting Fleishman and Harris[39] indicated that low turnover and grievance rates were present among work groups whose leaders scored high on consideration. High consideration has also been positively related to subordinate satisfaction and attitudes in a study involving faculty in a university.[40]

The dimension of initiating structure deals with behavior that is goal or task oriented and directive in nature. The Ohio State studies indicated that leaders scoring high on initiating structure received high ratings by their

superiors.[41] Studies in which leaders were judged to be effective by superiors and ranked high on task orientation had more productive workgroups and spent more time organizing activities than did leaders judged to be less effective.[42] Although high initiating structure is most often judged to be a positive behavior by superiors, it is not always perceived in the same manner by subordinates. In an industrial setting, for example, foremen high in initiating structure also had higher grievance rates and turnover than did low scoring foremen.[43]

The Fleishman and Harris results indicate that in some environments high scores on the LBDQ may not always be related to positive perceptions of the work group. The Fleishman and Harris study also seems to suggest that leader effectiveness can be perceived differently by superiors than by subordinates and that the organizational setting may have an effect on whether high scores on both dimensions can be considered as an indication of successful leadership.

A study by Halpin[44] using educational administrators and aircraft commanders did provide some comparative information on the problem of institutional setting, leader scores on both dimensions, and perception of the adequacy of the leader. Halpin found that the administrators showed more consideration and less initiating structure than did the commanders but that both of these leadership styles were perceived as effective within their respective groups. Thus, some evidence

is provided which suggests that various organizational parameters may demand different leadership styles.

It is evident that in many of the previously mentioned studies, the criteria for the adequacy of the leader's behavior is the evaluation, judgment, or perception of the leader's immediate superior or subordinates. Hemphill[45] departed from this pattern, however, in a study of twenty-two departments at a liberal arts college. Using the concept of reputation for being well administered as a criterion for the quality of departmental leadership, faculty members were instructed to rank the five best and the five worst led departments. Two samples of faculty members had a consistency of agreement of .94 in their ten rankings but generally only the older faculty who had been at the institution for a period of time were able to complete the ranking form.

Although Hemphill's study did employ a system of leader evaluation that did not contain the drawbacks associated with the perception or judgment of a leader's immediate superior or subordinates, there are a number of other weaknesses in using a factor such as reputation as a criterion of administrative excellence. The number of qualified judges, for example, is reduced. Only the older, more established faculty were able to complete the ranking form in Hemphill's study. Another problem is whether reputation is synonomous with quality or effectiveness. Once a good reputation has been attained, the effectiveness of the leader's behavior can be greatly reduced without a comparative loss in his reputation.

It appears that there is a need for investigators to begin to explore the use of more objective criteria as measures of leader effectiveness instead of relying on ratings, evaluations, or judgments as the basis for measurement. The situational approach to leader behavior and the subsequent development of the LBDQ have helped researchers to consolidate findings through the use of similar methodological approaches and usage of identical measuring instruments. If research is to progress beyond this stage, however, it is necessary to define and measure effective leadership in a more objective manner than has previously been the case. Many of the studies mentioned earlier must be regarded as exploratory in nature because of the heavy reliance on subjective evaluations. It is necessary to use additional objective variables besides grievance rates, job turnover, and job satisfaction scores in order to increase our understanding of successful leader behavior. Greater use of objective measurements will also permit more understanding of what Korman[46] referred to as "situational Moderators." At present, we do not have enough data to determine whether factors present in different organizational settings indicate the need for different leadership styles. It is possible that by deemphasizing subjective leader evaluations and increasing other types of objective and quantifiable measures, we will be able to effectively consider such possibilities.

FOOTNOTES--CHAPTER II

[1]C. G. Browne and T. S. Cohen, The Study of Leadership (Danville, Illinois: Interstate Printers and Publishers, 1958), p. 3.

[2]Stogdill, "Personal Factors Associated with Leadership: A Survey of the Literature," 35-71.

[3]Gibb, "The Principles and Traits of Leadership," 264-271.

[4]Fillmore H. Sanford, "Research on Military Leadership," in John C. Flanagan, ed., Psychology in the World Emergency (Pittsburgh: University of Pittsburgh Press, 1952), p. 51.

[5]John K. Hemphill, Situational Factors in Leadership (Columbus, Ohio: Bureau of Business Research, 1949).

[6]Ibid.

[7]Peter Weissenberg and Michael J. Kavanagh, "The Independence of Initiating Structure and Consideration: A Review of the Evidence," Personnel Psychology, XXV (Spring, 1972), 119.

[8]Ralph M. Stogdill and Carroll L. Shartle, Methods in the Study of Administrative Leadership (Columbus, Ohio: Bureau of Business Research, 1955).

[9]Ibid., p. 57.

[10]Donald T. Campbell, Leadership and its Effects Upon the Group (Columbus, Ohio: Bureau of Business Research, 1956); Halpin, "The Leadership Behavior and Combat Performance of Airplane Commanders," 19-22; Daniel Katz and Robert L. Kahn, "Leadership Practices in Relation to Productivity and Morale," in D. Cartwright and A. Zander, Eds., Group Dynamics: Research and Theory (Evanston, Illinois: Row and Peterson, 1953), pp. 612-628; Bass and Dunteman, "Behavior in Groups as a Function of Self, Interaction, and Task Orientation," 419-428; House, Filley, and Kerr, "Relation of Leader Consideration and Initiating Structure to R and D Subordinates' Satisfaction," 19-30.

[11]Ellis L. Scott, Leadership and Perceptions of Organizations (Columbus, Ohio: Bureau of Business Research, 1956).

[12]Ibid.

[13]Ralph M. Stogdill, Leadership and Structures of Personal Interaction (Columbus, Ohio: Bureau of Business Research, 1957).

[14]Ibid.

[15]Ibid.

[16]Campbell, Leadership and its Effects Upon the Group.

[17]Ibid., pp. 69-70.

[18]Ibid., p. 70.

[19]D. Katz, N. Maccoby, and N. C. Morse, Productivity, Supervision, and Morale in an Office Situation (Ann Arbor, Michigan: Institute for Social Research, 1950).

[20]Ralph M. Stogdill, Ellis L. Scott, William E. Jaynes, Leadership and Role Expectations (Columbus, Ohio: Bureau of Business Research, 1956).

[21]Ibid.

[22]Ralph M. Stogdill, Carroll L. Shartle, Ellis L. Scott, Alvin E. Coons, William E. Jaynes, A Predictive Study of Administrative Work Patterns (Columbus, Ohio: Bureau of Business Research, 1956).

[23]Ibid., p. 20.

[24]Ibid., p. 28.

[25]Ibid., pp. 58-59.

[26]John Hemphill, Daniel Griffiths, Norman Frederiksen, Glen Stice, Laurence Iannaccone, William Coffield, and Sydell Carlton, Dimensions of Administrative Performance (Princeton: Teachers College, Columbia University and Educational Testing Service, 1961).

[27]Stogdill and Coons, Leader Behavior: Its Description and Measurement, p. 3.

[28]Ibid., pp. 4-6.

[29]Ibid., p. 48.

[30]E. A. Fleishman and D. R. Peters, "Interpersonal Values, Leadership Attitudes and Managerial Success," Personnel Psychology, XV (Summer, 1962), 127-128.

[31]Halpin, "The Leader Behavior and Leadership Ideology of Educational Administrators and Aircraft Commanders," 18-32.

[32]Halpin, "The Leadership Behavior and Combat Performance of Airplane Commanders," 19-22.

[33]Fleishman and Harris, "Patterns of Leadership Behavior Related to Employee Grievances and Turnover," 43-56.

[34]Aaron Lowin, William Hrapchak, Michael Kavanagh, "Consideration and Initiating Structure: An Experimental Investigation of Leadership Traits," Administrative Science Quarterly, XIV (June, 1969), 238-253.

[35]Melvin Seeman, "A Comparison of General and Specific Leader Behavior Descriptions," in Ralph M. Stogdill and Alvin E. Coons, eds., Leader Behavior: Its Description and Measurement (Columbus, Ohio: Bureau of Business Research, 1957), pp. 92-93.

[36]Weissenberg and Kavanagh, "The Independence of Initiating Structure and Consideration: A Review of the Evidence," 119-130.

[37]Ibid., 125.

[38]Halpin, "The Leadership Behavior and Combat Performance of Airplane Commanders," 19-22; Halpin and Winer, "A Factorial Study of the Leader Behavior Descriptions," 39-51.

[39]Fleishman and Harris, "Patterns of Leadership Behavior Related to Employee Grievances and Turnover," 43-56.

[40]Hemphill, "Leadership Behavior Associated with the Administrative Reputation of College Departments," 385-401.

[41]Halpin and Winer, "A Factorial Study of the Leader Behavior Descriptions," 39-51.

[42]Bass and Dunteman, "Behavior in Groups as a Function of Self, Interaction, and Task Orientation," 419-428; Dunteman and Bass, "Supervisory and Engineering Success Associated With Self, Interaction, and Task Orientation Scores," 13-21; Katz and Kahn, "Leadership Practices in Relation to Productivity and Morale," 612-628.

[43]Fleishman and Harris, "Patterns of Leadership Behavior Related to Employee Grievances and Turnover," 43-56.

[44]Halpin, "The Leader Behavior and Leadership Ideology of Educational Administrators and Aircraft Commanders," 18-32.

[45]Hemphill, "Leadership Behavior Associated with the Administrative Reputation of College Departments," 385-401.

[46]Abraham K. Korman, "'Consideration,' 'Initiating Structure,' and Organization Criteria--A Review," Personnel Psychology, XIX (Autumn, 1966), 349-361.

CHAPTER III

METHODOLOGY

The purpose of this chapter is to describe the various methodological and statistical procedures used in the present study. The first section will operationally define a number of terms and the variables used in the investigation. The following section describes the tools employed to measure the variables and indicates the nature of the data. Subjects included in the sample and the method in which they were contacted are included in the following section. The procedures used in "following-up" with nonrespondents, the criteria for inclusion in the final analysis, and the degree of response are also presented. Next, hypotheses are formally stated and are followed by a brief description of the statistical technique used to test each hypothesis. Also included in the section on statistical analysis is a discussion of significance levels and Type I and Type II errors.

Definition of Terms

A number of terms used extensively throughout the study will at this time be more strictly defined.

1. Leaders--the individual designated by the formal organizational structure as the head of an administrative office or division.

2. Administrative office (division)--organizational unit of which at least 60% of the professional staff occupy administrative positions.

3. Administrative position--a job in which the occupant is not eligible for faculty tenure.

4. Consideration--one dimension of leader behavior measured by the Leader Behavior Descriptive Questionnaire. Refers to the extent an individual is supportive or considerate in his job relationships.

5. Initiating structure--one dimension of leader behavior measured by the LBDQ. Refers to the extent an individual is goal or task oriented in his job relationships.

6. Turnover--the proportion of professional staff members who have left the administrative office or division over a three year period.

7. Funding level--the proportionate increase in the budget of an administrative office or division over a three year period.

8. Subordinate satisfaction--scores on the Job Dimension Scale.

9. First level--organizational level in which supervisors direct the work activity of non-supervisory employees.

10. Second level--level of organization in which managers direct the work activity of subordinate managers or supervisors.

Sources and Nature of the Data

Leader behavior was measured by the Leader Behavior Descriptive Questionnaire, Form XII, made up of two factors, consideration and initiating structure. Subordinates described their leader by responding to the LBDQ items, each of which are scored from one to five.

Turnover of each organizational unit was determined by the use of yearly directories listing the individuals in each

office or division. The number of professional staff members who left the organizational unit over a three year period was calculated as was the total number of professionals who were in the unit during the same period of time. From this information the total number of professionals who were in the unit divided by the number who left represented the rate of turnover.

Departmental funding was calculated with the use of year end financial statements of the institution as well as supplementary information provided by the department head. The dollar increase in the organization's budget was calculated for a three year period and was divided by the initial budget to determine the rate of increase in the office's budget relative to other departments.

Subordinate satisfaction was measured by a ten item index developed by the researcher and termed the Job Dimension Scale. Each item was intended to represent a different dimension and included questions pertaining to salary, job duties and security, support facilities, fringe benefits, and others. The items were based in part on Herzberg's[1] intrinsic and extrinsic job factors and research by Nicholson and Miljus.[2] A copy of the Job Dimension Scale appears in the appendix. After the items were developed, they were given to the staff of the Office of Research Consultation of the College of Education for their analysis regarding content, form, clarity, and the face validity of the index. After revising the

instrument, it was pre-tested with a voluntary sample of administrators who were not included in the present study.

Respondents scored each item with reference to the importance or value of the factor in their ideal situation and the degree of satisfaction received from each factor in the individual's current job. Thus if the geographic location of the individual's job, for example, was not satisfying but also was not valued, the item would count little toward overall satisfaction. A person's salary which might be highly satisfying but not valued would count more while fringe benefits that might be highly valued and highly satisfying would receive a high score. Each item was scored from one to five regarding its value and from one to five regarding its satisfaction. These two scores were then multiplied to determine the particular score for that item. Thus an item which was not valued and not satisfying received a total score of one whereas an item that was highly satisfying and highly valued received a score of twenty-five. The score for all ten items was determined in the same manner and these were then added to calculate the total score for that individual on the Job Dimension Scale.

Sampling

Twenty-seven administrative offices or divisions of a large university were requested to participate in the study. All of the offices had at least five professional subordinates in them and at least 60% of the professional staff were occupying administrative rather than faculty positions. One department

fitting the above description was not included in the study for a number of reasons. Rather than being housed in one or two physically separated areas, the personnel in this department had their offices in more than twenty-five separate locations across the campus. Not only did this geographic dispersion severely limit their contact with the head of the department, but there were at least five levels of administrative hierarchy between the head of the department and the lowest level professionals. Thus, relatively few division members had much contact with the department head. Since the other departments in the study were not as physically widespread or contained as many administrative levels, this department was organizationally unique. For those reasons, this department was not included in the study.

All of the leaders of each office were first sent the LBDQ and a letter which (1) stated that members of their units would be subsequently asked to participate in a leadership study, (2) requested the cooperation of the leaders, (3) assured anonymity for all participants, and (4) provided a phone number at which questions could be answered. Within the next several days an attempt was made to contact every leader by phone for the purpose of urging their cooperation and answering any questions. If the leader was not going to be available for some time, a message was left which indicated he should return the call if he needed any additional information regarding the study.

Two days after the mailing to the leaders, a second mailing was sent to a random sample of members of each department. The mailing included the LBDQ, the Job Dimension Scale, and a cover letter that was similar in nature to the one sent previously to the leaders. Approximately a month later, another mailing went to all nonrespondents in an attempt to gain further cooperation.

In order to be included in the final analysis, at least three subordinates from each office or division had to describe the leader behavior of the head of their office. Although some studies have used fewer descriptions per leader (Stogdill and Goode; Day and Stogdill; Stogdill, Goode, and Day),[3] the degree of stability of the descriptions is very questionable when the number of descriptions are minimal.[4] A sufficient number of responses was obtained from 25 of the 27 offices who were initially invited to participate in the study. The potential number of respondents in the 25 offices was 186 individuals. The total number of usable responses from 25 groups was 118 or 63%. Of this number, 14 were responses from leaders of divisions and 104 were responses by subordinates.

Hypotheses

The hypotheses listed below are presented in the null form in order to be consistent with the statistical testing of the hypotheses in the analysis of the data. The background discussion and the review of the literature are intended to

convey the idea that in some cases a directional outcome may be desired but that differences in either direction are of interest.

The following hypotheses were the focus of the statistical analysis:

1. There is no linear relationship between either leader consideration and/or initiating structure and a set of variables measuring turnover, subordinate satisfaction, and increases in departmental funding.

2. There is no linear relationship between the dimensions of consideration and initiating structure among leaders.

3. There is no linear relationship between the dimensions of consideration and initiating structure among subordinates.

4. There is no difference between the leaders' self-descriptions on the LBDQ and the descriptions provided by their subordinates.

Statistical Analysis

Hypothesis number 1 was tested with the application of a technique called the canonical correlation which enables one to "determine a linear combination of predictors on the one hand, and a linear combination of criterion variables on the other, such that the correlation between these linear combinations in the total sample is as large as possible."[5]

Hypothesis numbers 2 and 3 were both tested by using a Pearson product-moment correlation coefficient. The Pearson r is concerned with the linear relationship between two variables in a sample of N cases.

The fourth hypothesis was tested using an analysis of variance. An analysis of variance (ANOVA) is used when one is interested in an overall effect of groups (leaders vs. subordinates) as well as an interaction effect of groups and measures when more than one measurement has been gathered for each individual.

It should be noted that all of these correlation techniques are also being used as descriptive statistics. When used in this manner, "it is not necessary to make any assumptions about the form of the distribution, the variability of Y scores within X columns or 'arrays' or the true level of measurement represented by the scores. . . ."[7] In this type of analysis we are describing the relationship of the data as if a linear relationship exists. When testing the significance of the hypotheses, however, the statistical tests are all subject to meeting the assumptions underlying each test.

In selecting the level of significance, the .05 and .01 levels are generally considered to be the conventional limits.[8] There are additional considerations, however, that must be made prior to determination of the significance level. At any significance level, two distinct types of error are possible. One is related to the degree the investigator is willing to err in deciding to accept or reject the hypothesis being tested. A type I error occurs "whenever the sample result falls into the rejection region even though the tested hypothesis is true."[9] A type II error, on the other hand, is

made whenever the tested hypothesis is accepted when in fact it is false.

At first, it appears as though alpha should be made very small since this would greatly reduce the probability of making a type I error. The problem, however, is that a decrease in alpha is accompanied by an increase in beta, or a type II error. Since this inverse relationship is always present, the experimentor must consider the relative importance of both types of errors in any particular study.

Alpha should be made extremely small whenever the consequences of making a type I error are to be avoided as much as possible. A wrong decision that would result in a company losing millions of dollars or jeopardizing the safety of the public would be appropriate examples. Although beta cannot be manipulated in a similar manner, the selection of an appropriate sample size, test statistics, and similar procedures can be used to influence beta. As a result, an alpha level of .05 would seem to be appropriate for the present study.

FOOTNOTES--CHAPTER III

[1]Frederick W. Herzberg, Work and the Nature of Man (Cleveland: World Publishing, 1966).

[2]Edward A. Nicholson and Robert C. Miljus, "Job Satisfaction and Turnover among Liberal Arts College Professors," Personnel Journal, LI (November, 1972), 840-845.

[3]Ralph M. Stogdill and Omar S. Goode, "The Leader Behavior and Presidents of Labor Unions," Personnel Psychology, XVII (Spring, 1964), 49-57; David R. Day and Ralph M. Stogdill, "Leader Behavior of Male and Female Supervisors: A Comparative Study," Personnel Psychology, XXV (Summer, 1972), 353-360; Ralph M. Stogdill, Omar S. Goode, and David R. Day, "New Leader Behavior Description Subscales," Journal of Psychology, LIV (April, 1962), 259-269.

[4]Ralph M. Stogdill, Manual for the Leader Behavior Description Questionnaire--Form XII (Columbus, Ohio: Bureau of Business Research, 1963).

[5]Maurice M. Tatsuoka, "Discriminant Analysis and Canonical Correlation," Multivariate Analysis: Techniques for Educational and Psychological Research, (New York: John Wiley and Sons, Inc., 1971), p. 178.

[6]Ibid., p. 183.

[7]William L. Hays, Statistics (New York: Holt, Rinehart and Winston, 1963), p. 510.

[8]J. P. Guilford, Fundamental Statistics in Psychology and Education (New York: McGraw-Hill Book Company, 1965), pp. 205-207.

[9]Hays, Statistics, p. 280.

CHAPTER IV

ANALYSIS OF THE DATA

This chapter deals with the statistical analysis of the study. After a restatement of the formal hypotheses, all the supporting data relating to each of the hypotheses will be presented in tabular form. The type of statistical technique used for each test is indicated, and the final results of the analysis are presented.

In addition to the formal hypotheses, a brief table of the LBDQ means and standard deviations obtained in this study and similar data from other investigations will be presented. Caution must be exercised, however, in making any direct comparison across samples. Since one of the principle purposes of the LBDQ is research oriented, the instrument has undergone repeated revisions and is subject to further revisions.[1] Although the means and standard deviations reported below were all obtained with the same instrument, they were not gathered during the same revision of the questionnaire. Thus, the purpose of presenting the table is not to make a direct comparison across samples but to indicate the degree of variability of the scores from a number of investigations.

The data from the present study is reported for the ungrouped responses of the subordinates as well as the composite

data at the departmental level. The term ungrouped data refers to scores provided by all subordinates that have been averaged irrespective of departmental or divisional lines. The term grouped data indicates that a mean has been calculated for each department. The ungrouped means and standard deviations of the subordinates are included because many of the samples presented in the manual and in Table 1 are based on only one description per leader. Thus, the ungrouped data from the subordinates is in some cases closer in nature to the selected samples than is the data at the departmental level.

As indicated in Table 1, page 52, the sample means and standard deviations for consideration ranged from 34.9 to 42.5 and 4.0 to 7.0 respectively. For initiating structure the means ranged from 35.5 to 38.7 while the standard deviations ranged from 4.9 to 6.2.

Hypothesis 1 was stated as follows:

1. There is no linear relationship between either leader consideration and/or initiating structure and a set of variables measuring turnover, subordinate satisfaction, and increases in departmental funding.

The hypothesis was tested by the canonical correlation which enables one to look at the degree of relationship between two sets of variables. The LBDQ dimensions of consideration and initiating structure are one set of variables and turnover, subordinate satisfaction, and extent of departmental funding are the other set of variables.

TABLE 1.--Means and Standard Deviations on the LBDQ Dimensions of Initiating Structure and Consideration for Selected Samples.

	Number of Cases	Consideration		Initiating Structure	
		Mean	Std. Dev.	Mean	Std. Dev.
College Administrators (Grouped Data) *	25	35.2	4.9	35.7	5.0
College Administrators (Ungrouped) **	104	34.9	7.0	35.5	6.2
Ministers	103	42.5	5.8	38.7	4.9
Community Leaders	57	41.1	4.7	37.2	5.7
Corporation Presidents	55	41.5	4.0	38.5	5.0
Labor Presidents	44	42.3	5.5	38.3	5.6

* The Consideration and Initiating Structure scores for each leader have been determined by averaging all the scores provided by the subordinates of that leader.

** The Consideration and Initiating Structure scores provided by all subordinates have been averaged irrespective of departmental or divisional lines.

Table 2 indicates the raw and standardized coefficients for all five variables in the first canonical correlation. The variables of consideration and initiating structure formed one theoretical variable described by the weights at the top of the table while the three variables of attrition, satisfaction, and funding level formed the second theoretical variable described by the weights at the bottom of the table. The two

theoretical variables were formed by the method of least squares so that the intercorrelations have been maximized. These two theoretical variables, then, have been constructed in such a manner that the obtained canonical correlation is as large as possible. In addition, the two theoretical variables indicate the relative weights to be given to all the variables if an investigator is interested in using these results for prediction.

TABLE 2.--Raw and Standardized Coefficients for the Canonical Correlation.

Theoretical Variables	Coefficients	
	Raw	Standardized
Variable One		
Consideration	0.068754	0.3370
Initiating Structure	0.158703	0.7855
Variable Two		
Attrition	-0.042399	-0.3453
Satisfaction	0.287352	0.7065
Funding	0.027487	0.2540

An examination of the table indicates that initiating structure with a standardized coefficient of 0.7855 was the most dominant factor in the first theoretical variable whereas

satisfaction with a standardized coefficient of 0.7065 was the dominant factor in the second theoretical variable. Consideration, on the other hand, only received a standardized coefficient of 0.3370 in the first theoretical variable while attrition and funding were given standardized coefficients of -0.3453 and 0.2540 respectively in the second theoretical variable.

Using the coefficients from Table 2, the first canonical correlation obtained was 0.8105. The square of this correlation was 0.6570 indicating that the variable based on department characteristics predicted 66% of the variance of the variable based on the LBDQ. Further, the correlation accounted for 32.8478 per cent of the original variation in consideration and initiating structure. It should be noted that cross validation of these results with an independent sample would result in some expected decrease of R^2. This is because any idiosyncracies in the present data were included in building the canonical correlation but would not enter into a study cross validating these results.

The raw and standardized coefficients for the second canonical correlation were not significant. The second canonical resulted in an obtained correlation of 0.3938. The square of this correlation was 0.1551 indicating that the variable based on department characteristics predicted 16 per cent of the variance of the variable based on the LBDQ. In addition,

the correlation accounted for 7.7548 per cent of the original variation in consideration and initiating structure.

A test of significance of the obtained canonical correlations was performed with a chi square test statistic. For the first or primary canonical, the obtained chi square statistic was equal to 26.0070. With six degrees of freedom, the probability of obtaining a chi square this large was less than 0.0003. Thus, the first canonical correlation was statistically significant. For the second canonical, the obtained chi square statistic was 3.5392. At two degrees of freedom, the probability of obtaining a chi square this large was less than 0.1705. The second canonical correlation, then, was not statistically significant.

In addition to the canonical analysis, other statistical data follows that is directly related to the canonical. Table 3 on page 56 contains the means, standard deviation, and variances of the five variables for the twenty-five departments.

Table 4, page 56 represents the obtained correlation matrix of the five variables used in the study. All of the variables are positively correlated with one another except for attrition which is negatively correlated with all other variables. This type of pattern is desirable and logical and indicates that low attrition is associated with high scores on the other variables.

The first two columns of Table 4 indicate that most of the correlations in an absolute form range from .50 to .64

TABLE 3.--Means, Standard Deviations, and Variances of Sample Variables.

	Mean	Std. Dev.	Variance
Consideration	35.20	4.90	24.03
Initiating Structure	35.68	4.95	24.50
Attrition	14.11	8.14	66.32
Satisfaction	14.57	2.46	6.04
Funding	24.22	9.24	85.38

TABLE 4.--Correlation Matrix of Sample Variables.

	Consider-ation	Initiating Structure	Attrition	Satisfac-tion	Funding
Consideration	1.0000				
Initiating Structure	.5087	1.0000			
Attrition	-.1553	-.5285	1.0000		
Satisfaction	.5880	.6408	-.1383	1.0000	
Funding	.5041	.5530	-.5269	.4383	1.0000

except for the correlation of -.16 between attrition and consideration. Thus, it appears that attrition seems to be a

better predictor of initiating structure than it is of consideration whereas satisfaction and funding seem to be equally good predictors for each of the two LBDQ dimensions.

The next set of data to be presented in Table 5 contains in part the raw regression coefficients for predicting consideration and initiating structure separately. The raw regression coefficients under the column labeled consideration indicate the weights given to the department characteristic variables of attrition, satisfaction, and funding level for predicting consideration. These weights are 0.058 for attrition, 0.884 for satisfaction, and 0.191 for funding. The raw regression coefficients under the column labeled initiating structure indicate the weights given to the department characteristic variables for predicting initiating structure. These weights are -0.242 for attrition, 1.085 for satisfaction, and 0.058 for funding.

TABLE 5.--Standardized and Raw Regression Coefficients and Standard Errors for Consideration and Initiating Structure.

	Consideration			Initiating Structure		
	Std. Coeff.	Raw Coeff.	Std. Error	Std. Coeff.	Raw Coeff.	Std. Error
Attrition	.096	0.058	.118	-.397	-0.242	.098
Satisfaction	.443	0.884	.369	.539	1.085	.306
Funding	.360	0.191	.114	.108	0.058	.095

The next set of data deals with the statistics for the regression analysis with the three independent variables of attrition, satisfaction, and funding level used to predict each of the dependent variables (consideration and initiating structure). For consideration the obtained multiple correlation was 0.6538 and the obtained F statistic was 5.2258. The probability of obtaining an F this large by chance is less than 0.0075. Thus, the data indicate that there is a statistically significant association between consideration and the three independent variables. The square of the multiple correlation or R^2 of 0.4274 indicates that approximately 43 per cent of the variance of consideration can be accounted for by the independent variables. For initiating structure the obtained multiple correlation was 0.7840 and the F statistic was 11.1678. The probability of obtaining an F this large by chance is less than 0.0002. The data again indicate that there is a statistically significant relationship between initiating structure and the three independent variables. In this instance, R^2 of 0.6147 indicates that approximately 61 per cent of the variance of initiating structure can be accounted for by the three independent variables.

In addition to the weights given to each of the predictor variables, it is also necessary to know the degree of confidence one can have in considering these coefficients to represent the actual weight of each variable in the population. Table 5 provides this information by indicating the standard

errors of the raw regression coefficients. With this information, the degree of error expected when predicting consideration and initiating structure from the raw regression coefficients can be determined. The standard errors under the column labeled consideration are 0.118 for attrition, 0.369 for satisfaction, and 0.114 for funding. Under the column labeled initiating structure the standard errors are 0.098 for attrition, 0.306 for satisfaction, and 0.095 for funding.

Table 5 also contains the standardized regression coefficients for the variables of consideration and initiating structure. These regression coefficients indicate the weight given to the variables of attrition, satisfaction, and funding level when these variables are put into standard score form. Standard scores enable researchers using different distributions to easily convert the obtained results from this study into the distribution of interest. The standardized regression coefficients under the column labeled consideration in Table 5 indicate a coefficient of 0.096 for attrition, 0.443 for satisfaction, and 0.360 for funding. The standardized regression coefficients under the column labeled initiating structure in Table 5 indicate a coefficient of -.397 for attrition, 0.539 for satisfaction, and 0.108 for funding.

Hypothesis 2 was stated as follows:

2. There is no linear relationship between the dimensions of consideration and initiating structure among leaders.

The testing of this hypothesis determined to what extent leaders who scored themselves high, for example, on consideration also scored themselves high on initiating structure.

A Pearson product-moment correlation coefficient was calculated for the set of scores and resulted in obtaining an $r = .16$. The significance of this correlation was tested with a two-tailed t-test at the .05 level with N-2 degrees of freedom. The critical value for rejection of the null hypothesis was 2.179. Since the obtained t was 0.5613, the null hypothesis was not rejected, the tentative conclusion being that for leaders in the population being investigated there was no linear relationship between consideration and initiating structure.

The means and standard deviations of the consideration and initiating structure scores for the fourteen leaders are reported in Table 6.

TABLE 6.--Means and Standard Deviations of LBDQ Scores from Fourteen Administrative Leaders.

	Consideration	Initiating Structure
Mean	38.86	39.07
Standard Deviation	4.32	3.85

Hypothesis 3 was stated as follows:

3. There is no linear relationship between the dimensions of consideration and initiating structure among subordinates.

The testing of this hypothesis determined to what extent subordinates who scored their leaders low, for example, on consideration also scored the leader low on initiating structure.

A Pearson r was calculated for the set of scores of the 104 subordinates and resulted in an r = .15. The significance of this correlation was tested with a two-tailed t-test at the .05 level with N-2 degrees of freedom. The critical value for rejection of the null hypothesis was 1.980. Since the obtained t was 1.5321, the null hypothesis was not rejected. It should be noted that the t-test in this instance does not meet the requirement of independence and therefore the conclusion to accept the null hypothesis is tentative. Further, this is in contrast to the correlation of .5087 presented in Table 1 of the analysis and obtained when the subordinates were organized according to departments. Since both correlations were obtained from the same data, it appears that the process of grouping the subordinates' scores according to their respective departments suggests a fairly substantial increase in the relationship between consideration and initiating structure.

Hypothesis 4 was stated as follows:

4. There is no mean difference between the leaders' self-descriptions on the LBDQ and the descriptions provided by their subordinates.

Since this hypothesis was concerned only with departments whose leaders and subordinates responded to the LBDQ, the analysis was limited to fourteen departments. The following analysis and conclusions must be considered as tentative since the nonresponding leaders could be systematically different than the respondents which would result in the data being biased. An analysis of variance was the statistical technique chosen to test Hypothesis 4.

Table 7 presents the analysis of variance summary table for the design.

TABLE 7.--Analysis of Variance Summary Table.

Source of Variation	Degrees of Freedom	Sums of Squares	Mean Squares	F
Between Groups	1	91.546	91.546	4.195
Between Departments	13	413.909	31.839	
Between Measures	1	.001	.001	.000
Groups by Departments	13	283.694	21.823	
Groups by Measures	1	.601	.601	.089
Departments by Measures	13	249.269	19.175	
Groups by Departments by Measures	13	87.869	6.760	
Total	55	1126.889		

In order to reject the hypothesis of no difference between the leaders' scores and their subordinates' scores, the obtained F would have to be larger than 4.22 at the .05 level with one and twenty-six degrees of freedom. Since the obtained F was 4.195, the hypothesis was not rejected. In addition, Table 7 indicates that there was no significant interaction between groups and scales of the LBDQ. Because the obtained F is tending toward the critical value of 4.22, it is possible that a Type II error has been committed and that the hypothesis should really be rejected. On the other hand, even if significance were obtained, the differences between the leaders' scores and their subordinates' scores do not appear to be large enough to be meaningful. As indicated in Table 8 the difference between the mean scores for consideration is 2.35 while the difference between the mean score for initiating structure is 2.76. The difference between the standard deviations are 0.03 for consideration and 0.82 for initiating structure.

The means, standard deviations, and the pooled estimates for the two groups are presented in Table 8 on page 64.

TABLE 8.--Means, Standard Deviations, and Pooled Estimates.

	Leaders		Subordinates		Pooled Estimates	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Consideration	38.86	4.49	36.51	4.52	37.68	4.51
Initiating Structure	39.07	3.99	36.31	4.81	37.69	4.42

FOOTNOTES--CHAPTER IV

[1]Ralph M. Stogdill, Manual for the Leader Behavior Description Questionnaire--Form XII (Columbus, Ohio: Bureau of Business Research, 1963), p. 3.

CHAPTER V

CONCLUSIONS, IMPLICATIONS, AND SUGGESTIONS FOR RESEARCH

Conclusions

This discussion deals with conclusions resulting from the statistical tests. However, some comments are first in order regarding the means and standard deviations of LBDQ scores presented in Table 1 of Chapter IV. Again it must be emphasized that the purpose of presenting the table was not to make a direct comparison across samples but to indicate the degree of variability of the LBDQ scores from a number of investigations. If obtained scores from the LBDQ were greatly restricted in variability in comparison to other samples, this could indicate either that the instrument was not sensitive enough to discriminate among subjects or that the subjects in the restricted sample were similar with respect to the variables under investigation.

From Table 1, the means of the LBDQ scores from the present study are generally lower than the means from other samples. Also, when the data is grouped into the twenty-five departments, the standard deviations from the present study are in general lower than the other samples. This does not mean, however, that the LBDQ is not appropriate in a collegiate setting. Because a minimum of three descriptions were

required for each leader in the present study, the sample size for the unit of analysis is greater than most of the other samples presented in Table 1. As sample size increases the variability or sample fluctuation decreases.[1] Thus, the increase in the sample size of the unit of analysis from one to at least three has resulted in an expected decrease in variability.

The second row in Table 1 indicates that when the data from the present study is presented as if there were only one description per leader, the standard deviations are as large or larger than those from studies done in other organizational settings. Thus, when the nature of the data is the same, the LBDQ appears to have the same degree of variability when employed in a higher education setting as it does when used in other types of organizations.

The Pearson product-moment correlation was used to determine the degree of relationship between the dimensions of consideration and initiating structure among leaders and among subordinates. The obtained correlations of .16 and .15, respectively, and the subsequent t-tests, indicated that both the leaders and the subordinates responded such that the dimensions of the LBDQ were not correlated with each other significantly. These findings are consistent with the theoretical framework of the LBDQ and the research by Halpin[2] and suggests that the two dimensions are orthogonal. Thus,

the leaders' responses seem to indicate that the two dimensions of the LBDQ may be focusing on different aspects of their behavior.

These results are also consistent, then, with the review of the literature conducted by Weissenberg and Kavanagh[3] in which they found a significant correlation between consideration and initiating structure in only two of seven studies conducted at the second level of the organizational structure. Thus, the findings from the present study support the position that above the first organizational level, the dimensions of consideration and initiating structure tend to be unrelated.

The above conclusions may have to be tempered, however, when the consideration and initiating structure scores are combined according to their respective groups in the sample. In the present study, for example, the correlation between consideration and initiating structure was .5087 when the LBDQ scores were organized according to departments. Thus, consideration and initiating structure were intercorrelated when the data was grouped but were only slightly correlated (.15) when the data was treated as if the sample size were one. These results suggest that the size of the unit of analysis may be related in some cases to the size of the correlation found between the LBDQ dimensions.

The analysis of variance indicated that there was no difference between the leaders' scores on the LBDQ and the

scores provided by their subordinates. From these results, one can conclude that leaders and subordinates are in agreement regarding the leaders' behavior on consideration and initiating structure. Since all of the leaders did not respond, it is necessary to consider that the nonresponding leaders could be systematically different that the respondents. One factor, however, that indicates such a systematic difference might not exist is that responding leaders did not receive all high or all low scores by their subordinates on the LBDQ. Eight of the responding leaders scored in the top half of all departments on the dimension of consideration, whereas six scored in the bottom half. On the dimension of initiating structure, seven of the leaders scored in the top half and seven scored in the bottom half. Since the responding leaders did not receive all high or low scores on the LBDQ, the probability that the nonrespondents were systematically different is somewhat lessened.

It should be noted that the above comparison was made on the basis of the subordinates' scores rather than on some variable that would deal directly with nonresponding and responding leaders. Because of this indirect comparison, it is possible that nonrespondent leaders are systematically different from respondent leaders.

As part of the canonical correlation analysis, a correlation matrix of the sample variables was presented in Table 4. This table indicated that all of the variables were

positively correlated with one another except for attrition which was negatively correlated with all other variables. Thus, the matrix indicates that high consideration and high initiating structure would be found with: (1) subordinates who are satisfied; (2) a high rate of departmental funding; and (3) a low attrition rate.

These findings with respect to the variables of attrition and subordinate satisfaction are consistent with the research of Fleishman and Harris, House et al., Halpin, Hemphill, and Halpin and Winer[4] among others. Since the variable of funding level has not received previous attention in the literature, future research will be needed to determine whether this relationship will be consistent across samples.

In addition to the correlation matrix, the regression analysis indicated that consideration was related to the three independent variables as was the dimension of initiating structure. Specifically, the three independent variables of attrition, subordinate satisfaction, and funding level accounted for almost 43 per cent of the variance of consideration in the regression analysis. For the variable of initiating structure, 61 per cent of the variance was accounted for by the three independent variables. These results seem to suggest that for this particular organizational setting there is a stronger relationship between

initiating structure and the three variables. The correlation matrix also appears to support this possibility.

The correlations of initiating structure and the three independent variables, for example, were -.53 for attrition, .64 for satisfaction, and .55 for funding level. For consideration the correlations were all somewhat lower. Specifically, the obtained correlations were -.16 for attrition, .59 for satisfaction, and .50 for funding level. While the differences in the correlations for satisfaction and funding level and the two LBDQ dimensions seem to be fairly small, there appears to be a greater negative correlation between attrition and initiating structure than there is between attrition and consideration. Thus, changes in behavior that would be described as considerate on the part of a leader correlated less with attrition than changes in the leader's behavior that could be identified as representative of initiating structure.

The canonical correlation of .81 indicated a very strong relationship between the LBDQ dimensions and the three independent variables. The two theoretical variables were formed in such a way that all intercorrelations were maximized. Thus, the canonical is a result of the linear combination of consideration and initiating structure representing one variable and the linear combination of attrition, satisfaction, and funding level representing the other variable.

Implications

In view of the results of this study, it appears that the variable regarding degree of funding warrants consideration in additional investigations. The correlation matrix, for example, suggested that funding level by itself was moderately related to all of the other variables in the study. And although this study did not determine what per cent of the variation in consideration and initiating structure could be accounted for by funding level that was not accounted for by the other variables, the statistical significance of the regression analysis and the canonical seem to suggest that funding level is not an extraneous dimension.

In this particular study, funding level pertained to relative increases in departmental budgets within the same large organization. Thus, the competition for money was fairly direct among the leaders being studied. Other investigations, however, might focus on leaders of separate organizations in which case funding level as defined in this study might not be an appropriate variable. The variable need not be defined exactly the same, however, in order to reexamine the theoretical framework; i.e., that there is a relationship between high scores on consideration and initiating structure and success in competition for money as a scarce resource.

This study also seems to have possible implications for the training of future educational administrators. At the present time, it is not possible to determine if leaders whose actions demonstrate high consideration and high initiating structure can actually produce or effect low attrition, high subordinate satisfaction, and success in obtaining funds. Such a determination would be a cause and effect relationship which is beyond the bounds of correlational studies. All that can be said is that there is some indication that consideration and initiating structure appear to be related to the other variables in the pattern indicated above. But it would be relatively inexpensive for graduate programs to offer a course or series of courses that would train students to recognize, develop, and incorporate behavior that is reflective of consideration and initiating structure. When these students would be ready to accept leadership positions, as much data as possible regarding the organization's attrition rate, staff morale, and funding success could be gathered. After the former student has been in a position for a substantial period of time, the same data could be obtained. If the leader is then displaying high consideration and high initiating structure and the various organizational outcomes have either improved or remained as a positive organizational dimension, this would seem to suggest that the teaching of consideration and initiating structure is a worthwhile part of a graduate program.

Suggestions for Future Research

The variable of funding should be included in additional studies of leadership behavior. The present investigation has suggested that this variable is a useful criterion measure in educational research using the LBDQ. Like other objective measures such as attrition and subordinate satisfaction it can be adapted to other types of organizations. As previously mentioned, if funding level in itself is not adaptable to a specific setting, the concept can be maintained if the chosen variable represents competition for money.

Other objective criterion measures that could be added to future investigations are such variables as the extent of leader experience and productivity of the work group. Productivity has been used in industrial organizations where it can often be measured simply by counting the number of completed operations, but it has not often been utilized in other types of settings. In recent years, legislatures have looked at the average number of hours taught per faculty member, the number of credit hours taught per faculty member, the ratio of administrators to faculty members, and similar data as measures of productivity in public institutions of higher education. These particular examples need not be used as productivity measures, but there does seem to be a need for researchers involved with

educational organizations and other nonprofit organizations to use some objective data as a measure of productivity.

Longitudinal studies could also be of assistance in research involved with leadership behavior. An analysis of one organization over a substantial period of time might point out events that indicate an improvement in an organization, for example, or the changes in a leader's behavior that precede positive or negative organizational outcomes. Although longitudinal studies involve an extensive time committment and substantial sums of money, an educational organization seems to be an ideal setting for such an effort since the individuals conducting the research need not interrupt their other professional duties and responsibilities.

In the earlier discussion of the literature, a number of studies were cited as having some weaknesses because the measurement instruments were not easily adaptable to other settings or the results were not applicable to a wide range of samples. Any future research should note that this study can also be criticized for the same reasons. It is quite likely that the instruments and the results of this study cannot be generalized to a wide range of samples and therefore suffer from the same weakness that was earlier attributed to other research.

FOOTNOTES--CHAPTER V

[1]Paul A. Games and George R. Klare, Elementary Statistics: Data Analysis for the Behavioral Sciences (New York: McGraw-Hill Book Company, 1967), pp. 241-243.

[2]Halpin, "The Leader Behavior and Leadership Ideology of Educational Administrators and Aircraft Commanders," 18-32.

[3]Weissenberg and Kavanagh, "The Independence of Initiating Structure and Consideration: A Review of the Evidence," 119-130.

[4]Fleishman and Harris, "Patterns of Leadership Behavior Related to Employee Grievances and Turnover," 43-56; House, Filley, and Kerr, "Relation of Leader Consideration and Initiating Structure to R and D Subordinates' Satisfaction," 19-30; Halpin, "The Leadership Behavior and Combat Performance of Airplane Commanders," 19-22; Hemphill, "Leadership Behavior Associated with the Administrative Reputation of College Departments," 385-401; Halpin and Winer, "A Factorial Study of the Leader Behavior Descriptions," 39-51.

SELECTED BIBLIOGRAPHY

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Books

1. Browne, C. G., and Cohen, T. S. The Study of Leadership. Danville, Illinois: Interstate Printers and Publishers, 1958.

2. Campbell, Donald T. Leadership and its Effects Upon the Group. Columbus, Ohio: Bureau of Business Research, Ohio State University, 1956.

3. Games, Paul A., and Klare, George R. Elementary Statistics: Data Analysis for the Behavioral Sciences. New York: McGraw-Hill Book Company, 1967.

4. Guilford, J. P. Fundamental Statistics in Psychology and Education. New York: McGraw-Hill Book Company, 1965.

5. Halpin, Andrew W., and Winer, B. James. "A Factorial Study of the Leader Behavior Descriptions," Leader Behavior: Its Description and Measurement. Edited by Ralph M. Stogdill and Alvin E. Coons. Columbus, Ohio: Bureau of Business Research, Ohio State University, 1957.

6. Hays, William L. Statistics. New York: Holt, Rinehart and Winston, 1963.

7. Hemphill, John K. Situational Factors in Leadership. Columbus, Ohio: Bureau of Business Research, Ohio State University, 1949.

8. _____; Griffiths, Daniel; Fredericksen, Norman; Stice, Glen; Iannaccone, Laurence; Coffield, William; and Carlton, Sydell. Dimensions of Administrative Performance. Princeton: Teachers College, Columbia University and Educational Testing Service, 1961.

9. Herzberg, Frederick W. Work and the Nature of Man. Cleveland: World Publishing, 1966.

10. Katz, D.; Maccoby, N.; and Morse, N. Productivity, Supervision, and Morale in an Office Situation. Ann Arbor, Michigan: Institute for Social Research, University of Michigan, 1950.

11. Katz, Daniel, and Kahn, Robert L. "Leadership Practices in Relation to Productivity and Morale." Group Dynamics: Research and Theory. Edited by D. Cartwright and A. Zander. Evanston, Illinois: Row and Peterson, 1953.

12. Sanford, Fillmore H. "Research on Military Leadership." Psychology in the World Emergency. Edited by John C. Flanagan. Pittsburgh: University of Pittsburgh Press, 1952.

13. Scott, Ellis L. Leadership and Perceptions of Organizations. Columbus, Ohio: Bureau of Business Research, Ohio State University, 1956.

14. Seeman, Melvin. "A Comparison of General and Specific Leader Behavior Descriptions." Leader Behavior: Its Description and Measurement. Edited by Ralph M. Stogdill and Alvin E. Coons. Columbus, Ohio: Bureau of Business Research, Ohio State University, 1957.

15. Stogdill, Ralph M. Leadership and Structure of Personal Interaction. Columbus, Ohio: Bureau of Business Research, Ohio State University, 1957.

16. _____; and Coons, Alvin E. Leader Behavior: Its Description and Measurement. Columbus, Ohio: Bureau of Business Research, Ohio State University, 1957.

17. _____; Scott, Ellis, L.; and Jaynes, William E. Leadership and Role Expectations. Columbus, Ohio: Bureau of Business Research, Ohio State University, 1956.

18. _____; and Shartle, Carroll L. Methods in the Study of Administrative Leadership. Columbus, Ohio: Bureau of Business Research, Ohio State University, 1955.

19. _____;Shartle, Carroll L.; Scott, Ellis L.; Coons, Alvin E.; and Jaynes, William E. A Predictive Study of Administrative Work Patterns. Columbus, Ohio: Bureau of Business Research, Ohio State University, 1956.

20. Tatsuoka, Maurice M. "Discriminant Analysis and Canonical Correlation." Multivariate Analysis: Techniques for Educational and Psychological Research. New York: John Wiley and Sons, Inc., 1971.

Manual

21. Stogdill, Ralph M. Manual for the Leader Behavior Description Questionnaire--Form XII. Columbus, Ohio: Bureau of Business Research, Ohio State University 1963.

Articles

22. Bass, Bernard M., and Dunteman, Edward A. "Behavior in Groups as a Function of Self-Interaction, and Task Orientation." Journal of Abnormal and Social Psychology, Vol. 66 (June, 1963), 419-428.

23. Brianas, James. "Between Employees and Supervisors: Three Cases in Point." Personnel Journal, Vol. 49 (November, 1970), 892-899.

24. Danielson, L. E., and Maier, Norman, R. F. "Supervisory Problems in Decision Making." Personnel Psychology, Vol. 10 (Summer, 1957), 169-180.

25. Day, David R., and Stogdill, Ralph M. "Leader Behavior of Male and Female Supervisors: A Comparative Study." Personnel Psychology, Vol. 25 (Summer, 1972), 353-360.

26. Dunteman, Edward A., and Bass, Bernard M. "Supervisory and Engineering Success Associated with Self, Interaction, and Task Orientation Scores." Personnel Psychology, Vol. 16 (Spring, 1963), 13-21.

27. Fleishman, Edwin A., and Harris, Edwin F. "Patterns of Leadership Behavior Related to Employee Grievances and Turnover." Personnel Psychology, Vol. 15 (Spring, 1962), 43-56.

28. _____, and Peters, David R. ."Interpersonal Values, Leadership Attitudes and Managerial Success." Personnel Psychology, Vol. 15 (Summer, 1962), 127-143.

29. Gibb, C. A. "The Principles and Traits of Leadership." Journal of Abnormal and Social Psychology, Vol. 42 (July, 1947), 264-271.

30. Halpin, Andrew W. "The Leader Behavior and Leadership Ideology of Educational Administrators and Aircraft Commanders." Harvard Educational Review, Vol. 25 (Winter, 1955), 18-32.

31. Halpin, Andrew W. "The Leadership Behavior and Combat Performance of Airplane Commanders." Journal of Abnormal and Social Psychology, Vol. 49 (January, 1954), 19-22.

32. Hemphill, John K. "Leadership Behavior Associated with the Administrative Reputation of College Departments." Journal of Educational Psychology, Vol. 46 (November, 1955), 385-401.

33. House, Robert J.; Filley, Alan C.; and Kerr, Steven. "Relation of Leader Consideration and Initiating Structure to R and D Subordinates' Satisfaction." Administrative Science Quarterly, Vol. 16 (March, 1971), 19-30.

34. Korman, Abraham K. "'Consideration,' 'Initiating Structure,' and Organizational Criteria--A Review." Personnel Psychology, Vol. 19 (Autumn, 1966), 349-361.

35. Lowin, Aaron; Hrapchak, William; and Kavanagh, Michael. "Consideration and Initiating Structure: An Experimental Investigation of Leadership Traits." Administrative Science Quarterly, Vol. 14 (June, 1969), 238-253.

36. Nicholson, Edward A. and Miljus, Robert C. "Job Satisfaction and Turnover among Liberal Arts College Professors." Personnel Journal, Vol. 51 (November, 1972), 840-845.

37. Spector, Aaron J.; Clark, Russell A.; and Glickman, Albert S. "Supervisory Characteristics and Attitudes of Subordinates." Personnel Psychology, Vol. 13 (Autumn, 1960), 301-316.

38. Stogdill, Ralph M. "Personal Factors Associated with Leadership: A Survey of the Literature." Journal of Psychology, Vol. 25 (January, 1948), 35-71.

39. _____, and Goode, Omar S. "The Leader Behavior and Presidents of Labor Unions." Personnel Psychology, Vol. 17 (Spring, 1964), 49-57.

40. _____; Goode, Omar S.; and Day, David R. "New Leader Behavior Description Subscales." Journal of Psychology, Vol. 54 (March, 1962), 259-269.

41. Weissenberg, Peter, and Kavanagh, Michael J. "The Independence of Initiating Structure and Consideration: A Review of the Evidence." Personnel Psychology, Vol. 25 (Spring, 1972), 119-130.

42. Yuchtman, Ephraim, and Seashore, Stanley. "A System Resource Approach to Organizational Effectiveness." American Sociological Review, Vol. 32 (December, 1967), 891-903.

APPENDIX

JOB DIMENSION SCALE

JOB DIMENSION SCALE

Below are listed ten randomly ordered job dimensions. First, in the context of your ideal situation, rate each dimension according to its importance or value. Then, rate each dimension on the extent to which you are satisfied in your current job.

	Degree of Value in Ideal Situation			Degree of Satisfaction in Present Job		
	not valued	moderately valued	highly valued	not satisfying	moderately satisfying	highly satisfying
1. Support facilities; e.g., equipment, secretary, supplies, office space.	A B C D E			A B C D E		
2. Level of pressure or tension you work under that is created by your job.	A B C D E			A B C D E		
3. Level of responsibility, authority; e.g., administer programs, supervise others.	A B C D E			A B C D E		
4. Geographic Location.	A B C D E			A B C D E		
5. Fringe Benefits; e.g., hospitalization, retirement, vacation.	A B C D E			A B C D E		
6. Amount of supervision; i.e., extent your work is reviewed.	A B C D E			A B C D E		

JOB DIMENSION SCALE.--Contd.

	Degree of Value in Ideal Situation			Degree of Satisfaction in Present Job		
	not valued	moderately valued	highly valued	not satisfying	moderately satisfying	highly satisfying
7. Job security.	A B C D E			A B C D E		
8. Job duties; i.e., functions you perform, the job itself.	A B C D E			A B C D E		
9. Professional colleagues with whom you work.	A B C D E			A B C D E		
10. Salary.	A B C D E			A B C D E		