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CONTINGENCY MODEL.

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LEADERSHIP STYLES OF COLLEGE AND UNIVERSITY PRESIDENTS:
AN APPLICATION OF FIEDLER'S CONTINGENCY MODEL
DISSERTATION
Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
School of The Ohio State University

By

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* * * * *

The Ohio State University
1975

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Higher Education Administration
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INTRODUCTION

The events which have occurred in American higher education since the early 1960's have placed almost unprecedented demands upon many upper-level administrators of higher education institutions. Because of student unrest, financial pressures, and social and racial upheavals, the administration of colleges and universities has developed into a crucial issue for those both internal and external to the academic community.

The chief executive officer of colleges and universities has found himself "negotiating compromises" with various constituent groups. In addition, he (or she) must often contend with those events which are beginning to, or have already eroded his influence in the decision making hierarchy of his institution. The emergence of academic collective bargaining, growth in institutional size and complexity, and intervention from legislatures and courts, have all combined to significantly alter the power of the modern college president when compared with his early predecessors.

Because of the forces impinging upon the office of the presidency, the leadership role of the modern college president has undergone rather significant modifications. Instead of directly influencing a relatively broad range of institutional activities from a central
leadership position, the presidency now has been transformed into what could be termed a "headship" form of leadership. As a headman, the president often becomes more of a "symbolic" leader and less of a functional or "task" leader—in the traditional sense described in the leadership literature.2

However, diffusion of the president's power does not necessarily preclude him from assuming a functional leadership role with different groups. In many instances, presidents may assume a formal or informal leadership role with their faculty senates or members of their formal or informal administrative cabinets. The leadership behavior of presidents in relation to their boards of trustees, as a university "subgroup" has been studied by at least one investigator.3

Thus, although the presidency in general may be characterized by a "symbolic" form of leadership, opportunity does exist for presidents to perform a formal or informal leadership role with various constituent university groups. Informally, the president may be permitted to exercise influence with these groups in exchange for status,


esteem, and prestige—as long as he is considered to be a valuable group resource. In other instances, the president may have occasion to function as a "formal" leader because of the authority given to him by the board of trustees.

The rise in popularity of the cabinet form of governance stands in testimony to increases in institutional size and complexity. As the chief executive officer, the president may often assume a leadership role in this context. Whether used in an advisory capacity or for achieving consensus on problems, the cabinet provides a setting for the president to make influence attempts, initiate new programs, articulate issues and tasks, etc.—in short, to exercise leadership.

Leaders, in general, have historically been viewed as "great men" who possess inborn qualities specific to only certain individuals. However, when leaders have been studied across different situations, investigators have been unable to isolate a single enduring personality trait indigenous to those in leadership positions. Instead, research

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over the past three decades has indicated that different situational requirements will significantly influence leadership effectiveness. Furthermore, since leadership is generally considered to be a social process, the situational viewpoint does not suggest that personality traits should be entirely discounted. Rather, personality attributes must be considered in relation to how they interact with different situational elements.

In a manner similar to early leadership research, the leadership styles of college presidents generally have been studied from the perspective of those personal qualities which presidents should possess. By using an empirically validated leadership model, the leadership styles of college presidents can be systematically investigated. In addition, the demands upon the presidency highlight the necessity to study the situations in which different presidential leadership styles may be effective. Of particular significance is the president's role in exercising leadership with the university's chief administrative officers. Furthermore, if the president does function as a leader with his "cabinet" members, a leadership model can provide

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guidelines for assisting presidents to be aware of those situations in which their particular leadership styles may be ineffective and how to increase their effectiveness.

Statement of the Problem

The problem of this study was to determine the conditions under which leadership styles of college presidents were effective with their administrative cabinets and the conditions under which they were ineffective.

The rise of the "shared authority" principle of university governance and increases in institutional size and complexity have significantly altered the president's scope of responsibilities and his sphere of influence. Because of the democratic thrust in higher education decision making, and growth in university missions and objectives, the modern college president is required to delegate responsibilities which were once the sole province of the historical college president.

With some variation, most college presidents now make very few major decisions without consulting officers in their formal or informal administrative cabinets. Presidential "style" in this process generally ranges from one in which the cabinet is considered to be an advisory body to one in which consensus is used to make decisions.

13 F. Rourke and G. Brooks, op. cit.
Undoubtedly, these two styles are often used interchangeably by the same president, depending upon the issue under consideration, time available, or the value placed upon either approach.

When the cabinet, as a group, is faced with a particular task requiring solution, some form of leadership may be necessary to guide discussion, articulate issues, define obstacles, and provide alternative solutions. Often this leadership will informally rotate among different group members, stabilize with one cabinet member or, depending upon the situation, reside entirely with the president.

In other instances, the leadership behavior of the president may be best characterized by a series of "dyadic" relationships with the various cabinet members. Thus, the president may formulate and implement a financial program or decision by interacting directly with the chief financial officer. This type of situation describes a leadership process which does not involve all of the cabinet officers interacting as a group but, rather, where leadership influence is exerted on a one-to-one basis.

Regardless of the form of the leadership process, the president will usually be looked to for formal leadership because of the formal authority which resides in his position. If the presidency is characterized by the assumption of a formal leadership role, the effectiveness of the cabinet members may acquire major significance in terms of group performance and, hence, the achievement of institutional missions and objectives.

Among other factors, the leadership effectiveness of the president will vary according to the interaction of the president's leader-
ship "style" with a situation in which the leadership exchange process takes place. Numerous studies have investigated situational factors associated with different leader behaviors, but their generalizability has been severely limited by a lack of systematic replication. One notable exception to this lack of replication has been the work of Fred E. Fiedler.

With his Contingency Model of Leadership Effectiveness, Fiedler postulates that effective group performance is contingent upon the interaction of leadership style and the degree to which a situation is favorable to a leader's influence attempts. The model itself, or portions of it, have been extensively tested with well over 1000 groups in a variety of work settings and validated in almost 30 different studies. Because it has systematically related leader personality to situational context factors, the model provides a useful method for predicting leadership effectiveness from leadership styles. It also provides a valuable framework for analyzing the relationship between leader style and situational variables.

If it is assumed that a need exists for effective formal leadership with the administrative cabinet, several questions may be indi-

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16 Ibid.
cated. First, how favorable are cabinets, in general, to the exercise of formal presidential leadership? Of specific interest is the extent to which different situational factors determine this favorableness. A related concern involves differences in perception of situational favorableness between presidents and their cabinet members. Second, under what conditions of favorableness are different presidential leadership styles more effective than other styles? Finally, how do years of experience in the presidency affect the leadership effectiveness of a president?

Purpose of the Study

The main purpose of the study was to determine the predictability of presidential leadership effectiveness with cabinets by investigating the relationship between leadership styles and situational favorableness. Operationally, the study sought to determine if task-oriented presidents were more effective in very favorable than in moderately favorable situations; if relationship-oriented presidents were more effective in moderately favorable than in very favorable situations; and, if presidents who were neither primarily task- nor relationship-oriented were effective in either situation.

A second purpose of the study was to investigate the effects of previous experience in the presidency, and years of experience in the current presidency upon leadership effectiveness. Specifically, the study attempted to assess how relevant experience differentially affected the leadership effectiveness of different leadership styles.
A third, related purpose, was to examine the effects of experience and leadership styles as compared by president versus cabinet perceptions of situational favorableness. By using Fiedler's Contingency Model for the study, a concomitant outcome was to ascertain the validity of portions of the model and the feasibility of its use in studying college presidents.

A final, somewhat tangential, purpose was to indicate how a knowledge of leadership styles and situational variables can be useful in selecting presidents, improving or appropriately altering the situational favorableness of cabinets, and in delegating leadership responsibilities to cabinet members.17

Hypotheses

Based upon the research conducted with the Contingency Model, as well as the problem of this study, the following hypotheses were tested:

\[ H_1: \text{In cabinets described as moderately favorable, high LPC presidents will be rated as more effective than will be low LPC presidents.} \]

\[ H_2: \text{In cabinets described as favorable, low LPC presidents will be rated as more effective than will be high LPC presidents.} \]

\[ H_3: \text{In cabinets with intermediate LPC presidents, there will be no significant difference in their} \]

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17 The definitions used in describing the purposes of the study are found in the last section of this chapter, "Definition of Key Terms." The rationale behind the purposes and the hypotheses will be discussed in Chapter Two, the "Review of the Literature."
rated effectiveness in either favorable or moderately favorable situations.

H₄: Both college presidents and their cabinets will describe the situation of the cabinets as either favorable or moderately favorable.

H₅: Neither college presidents nor their cabinets will describe the situation of the cabinets as being very unfavorable.

H₆: In situations rated as favorable, experienced presidents with low LPC scores will be rated higher in effectiveness than experienced high LPC presidents.

H₇: In situations rated as moderately favorable, experienced and inexperienced presidents with high LPC scores will be rated higher in effectiveness than experienced and inexperienced low LPC presidents.

H₈: In cabinets with experienced or inexperienced intermediate LPC presidents, there will be no significant difference in their effectiveness in either favorable or moderately favorable situations.

Significance of the Study

Because of the internal and external pressures bearing upon the presidency and higher education institutions, the leadership role of the chief executive has become crucial. A perceived loss of legitimacy¹⁸ in the president's role from the perspective of the university community and the public requires that attention be given to the effectiveness of presidents in carrying out their delegated responsibilities.

One area of particular importance to the study of the college presidency is the president's leadership role with his administrative cabinet officers. It is in the formal or informal cabinet that decisions often are made (as a group or individually) concerning budgetary matters, academic programs, student life, fund raising, etc. Although many similar decisions are made at other levels within the university, the president and his cabinet officers often have the responsibility for final decisions, initiating new programs, articulation of issues, and institutional planning.

In view of the important role the cabinet officers often assume in affecting their institutions, the leadership behavior of the chief executive may be a determining factor in whether or not the cabinet members effectively perform their tasks and responsibilities. Without some form of centralized coordination provided by the president (often in conjunction with the board of trustees), the activities performed by the cabinet officers could conceivably lack organized and appropriate form. Thus, the selection of the president, for example, assumes major significance, not only to the university in general, but specifically to the operation of the administrative cabinet. Fiedler's model provides an important framework for use in the selection of presidents as formal task leaders.

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20J. V. Baldridge, Power and Conflict in the University (New York: John Wiley and Sons, 1971).
In addition, the model could assist many presidents to measurably increase their effectiveness as leaders with their cabinets. By having knowledge of how their individual leadership styles systematically interact with different situational elements of their cabinets, presidents could improve the over-all performance of their cabinets and themselves. The model also provides guidelines for presidents when assigning chairpersons to various university task forces or when selecting new administrators.

Finally, the study itself may help to show how some presidents are able to increase or maintain their leadership effectiveness in a variety of settings, while others appear to be effective only in certain specific situations.

**Limitations of the Study**

The primary limitation of the study would seem to be its use of the questionnaire approach in collecting data. The lack of flexibility inherent in structured questionnaires prohibits in-depth questioning and the opportunity to provide clarification and feedback. It was not possible to determine if the respondents experienced difficulty in completing any of the questionnaire items. However, this limitation was negated to some extent by the increased generalizability of the results made possible by sampling a relatively large number of presidents.

As previously discussed, the central focus of the study was upon individuals occupying formal positions and exercising (at least hypothetically) formal leadership. No attempt was made to investigate informal leadership processes operating within the administrative cabinet
as a group. The impracticality of such an approach, arising out of limitations of time and monetary resources, restricted the study to perceived, formal interactions.

The relatively static nature of the measures used in the Contingency Model presented a third limitation. As Korman suggests, the model fails to consider the long-range consequences of the situation upon the leader. In the present study, cabinet members and presidents were rating and evaluating a situation at a particular point in time, or as a "conglomeration" of perceptions concerning past experiences. In one respect, however, the present study circumvented the "static" issue by the use of measures of the effects of experience upon situational favorableness. Even this latter approach is, admittedly, limited since it excludes direct observation and more in-depth questioning arising out of the use of questionnaires.

A fourth possible limitation was related to the use of the questionnaire approach for data collection. Specifically, a failure to obtain a statistically reliable response rate would severely limit the generalizability of the results. If the responding institutions do not represent a statistically reliable sample, the resulting response bias would restrict the extent to which conclusions can be made from the results of testing the hypotheses.

Fifth, the focus of the study was in no way indicative of all of the types of leader behaviors or other activities in which the presidents might be involved. As discussed earlier, the president may also function as the formal or informal leader of various other university-related groups. However, the present study is limited to his formal leadership role within the administrative cabinet. This particular leadership role may also, not always involve face-to-face interactions with the cabinet as a group. Furthermore, the president's job extends beyond his leadership behavior. Administrative activities and responsibilities in the day-to-day management of the institution constitute an area of major importance in which specific groups or leadership behavior may not always be involved.

Finally, the study only dealt with three major administrative cabinet officers: vice-presidents for finance, academics, and development. The effect of excluding other cabinet members will remain unknown.

**Definition of Key Terms**

**COLLEGE OR UNIVERSITY**

Public and private four-year American educational institutions of higher learning which offer at least the baccalaureate degree. The terms "college" and "university" will be used interchangeably throughout the study.

**COLLEGE OR UNIVERSITY PRESIDENT**

The chief executive officer of a university who has the responsibility to preside over and manage the internal and external affairs of a university.

**ADMINISTRATIVE CABINET**

The formal or informal body of executive administrative officers (usually including vice-presidents, provosts, and sometimes deans) who hold delegated responsibilities for the internal and/or external management of a university.
GROUP

A set of two or more cabinet officers characterized by func­tional dependence of interdependence and common goals.

INTERACTING GROUP

A group characterized by interdependence of group members and the need for a relatively high degree of coordination to complete given tasks. An example would be the cabinet meeting as a collective whole to develop institutional planning strategies.

COACTING GROUP

A group characterized by common goals which are achieved relatively independent of other group members. Cabinet officers often can achieve cabinet or university goals by the performance of tasks within their own institutional roles. An example would be the finance officer making independent budgetary decisions.

LEADER

The individual in the group who occupies a formally designated, differentiated role, for the purpose of influencing and coordinating the task-related activities of the group. (The study will not specifically consider the "informal" leader.)

LEADERSHIP

An exchange process involving the attempts of an individual group member to influence the mutually accepted or imposed goals of other group members in a given situation. Operationally, leadership will be defined as influence attempts which have measurable outcomes.

LEADERSHIP EFFECTIVENESS

The extent to which the leader is perceived by himself and other group members to have fulfilled expectations of task accomplishment in designated areas of his responsibility.

LEADERSHIP BEHAVIOR

"...the particular acts in which a leader engages in the course of directing and coordinating the work of his group members."22

22 F. E. Fiedler, op. cit., 1967, p. 36.
LEADERSHIP STYLE

The relatively stable and enduring personality pattern of an individual which provides motivation for his leadership behavior across different situations. In contrast to leadership "behavior," leadership "style" represents a more or less constant attribute of an individual's personality structure.

SITUATIONAL FAVORABLENESS

The degree to which contextual variables permit the leader to exercise influence over the tasks and activities of the group.

The primary determinants of situational favorableness, according to Fiedler, are:

LEADER-MEMBER RELATIONS: The quality of interpersonal interactions between the leader and the other group members.

TASK STRUCTURE: The degree to which primary group tasks can be said to be "programmed and specified in a step-by-step fashion." More simply, the clarity or ambiguity of group tasks.

POSITION POWER: The formal or legitimate power which resides in the leadership position. In essence, the extent to which the position itself possesses potential to allow the leader to exert influence over the other group members.

\(^{23}\) F. E. Fiedler, op. cit., 1967.

\(^{24}\) Ibid., p. 41.
There is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success, than to take the lead in the introduction of a new order of things.

--Machiavelli, The Prince

II

REVIEW OF THE LITERATURE

Leadership Research: A Perspective

The study of leadership probably has existed as long as people have questioned how leaders are different from other individuals. Plato enumerated virtues which his "philosopher-rulers" should possess to govern the ideal state. During the early 1500's, Machiavelli posed the question of whether or not it is better for the political leader of the state to be hated or loved--concluding that the former alternative was the more desirable. In the nineteenth century, Weber\(^1\) proposed a three-fold typology of authority possessed by leaders: legal, traditional, and rational.

At the beginning of the present century, leaders were often studied from the perspective of "great men" of history. Accordingly, societal advances were seen as the direct result of the achievements of great men who lived during the period of the advances. An outgrowth of this approach was the notion that leadership "must always be investigated through the study of traits." The essence of this viewpoint was that leaders possess inborn attributes which take precedence over any other factors associated with leader behavior.

Following the work of Cowley and other authors, ensuing leadership research produced a proliferation of studies investigating how psychological factors "make" a person a leader. Results of some of these studies and many others, were subsequently summarized and found to present a confused picture of leader traits across different situa-

2 Thomas Carlyle, op. cit.


4 Ibid.

tions. The over-riding conclusions appeared to be that: (1) although some personality factors can be identified as leadership correlates, none are significantly related in a high frequency of cases and, (2) the lack of stable leadership traits across different situations requires or dictates that traits should be studied in relation to specific situational variables.

Closely related to the study of leader traits was the study of leadership styles. Basic to earlier investigators of this approach, were assumptions regarding the nature of man. Other approaches postulated leadership typologies and, more recently, emphasis has been given to isolating general factors characteristic of leader behavior. The remainder of this chapter will be given to consideration of these different approaches.

One of the classic discourses regarding leaders and their assumptions of the nature of man was that of Taylor. According to

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7 For the purposes of this chapter, the word "style" shall refer to a particular mode of behavior.

his "scientific management" approach, workers are primarily motivated by economic incentives and, industrial output can be increased by improving technological efficiency. One method to achieve this efficiency would be for the leaders or managers to rationally manipulate workers as instruments of technology. The emphasis was on monitoring criteria of performance to satisfy organizational goals over those of the individual.

In the 1920's and early 1930's, the antithesis of Taylor's task-oriented emphasis manifested itself in the form of the more person-oriented "human relations" movement. Among the progenitors of this viewpoint were Elton Mayo⁹ and Mary Parker Follett.¹⁰ Essentially, they held that technological emphasis, by itself, was insufficient to the study of organizational output and processes. Of greater importance was the extent to which interpersonal relations within working units were given consideration. In contrast to Taylor, individual needs were deemed more important than those of the organization.

A synthesis of the scientific management and human relations viewpoints was developed by McGregor¹¹ in his "Theory X - Theory Y" postulation. Theory X assumes that people are inherently lazy, economically motivated, and prefer to be directed in performing their


duties. According to these assumptions, managers who accept Theory X attempt to closely control and supervise their subordinates. Theory Y, on the other hand, is postulated to be accepted by managers who believe that people are not lazy, are basically self-motivated, and possess potential to create and direct themselves. The role or style of the manager, in this instance, is to create an environment relatively free from external control and direction, and to provide for basic human needs.

Among the earliest studies which have classified leader behaviors, are the anthropological investigations of primitive tribes, discussed by Terman.\(^\text{12}\) The basic finding was that many of these tribes tended to recognize one leader in times of war and another during peaceful times. The leaders for peace usually inherited their jobs while the war chiefs were recognized for their skills and bravery in battle.

A rather striking similarity with this behavior reported by Terman, was found in small, decision-making groups studied by Bales and Slater.\(^\text{13}\) They discovered that group members tended to differentially value different needs at different times. Depending upon which value was dominant in the group, leadership status was informally accorded to individuals who met either "task" or "socio-emotional" needs of the group.


In 1939, Lewin and his associates conducted research with young boys and concluded that leaders could be classified in three ways: autocratic, laissez-faire, and democratic. The autocratic leader attempts to direct group activity with little input from the members; the laissez-faire leader exerts little influence in directing group tasks; and the democratic leader allows the group to decide on how tasks are to be accomplished.

In studying how different leadership styles produce different group climates, Lewin experimentally manipulated the style of leadership to see if the behavior of children would be influenced. In general, he found that the laissez-faire leader was the least liked and accomplished less than the other groups. In the autocratically-led groups, the children tended to form into cliques and exhibited little solidarity of group purpose. The most striking findings appeared in groups led by the democratic leader. In these groups, the leader was more popular, more cooperative effort among group members was seen, and the group assumed more responsibility and independence than did the groups led by the other leadership styles.

Following the work of Lewin, research concentrated upon identifying behavior associated with different leaders. One of the most extensive attempts at classifying leader behavior was begun in 1945 at the Bureau of Business Research at The Ohio State University. In order

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to develop an instrument to describe leader behavior, 150 item statements were written to describe nine postulated categories of leader behavior. The result was the initial form of the Leader Behavior Description Questionnaire (LBDQ).

After subdividing the original nine categories, Hemphill and Coons\(^\text{15}\) statistically refined the LBDQ with a variety of groups and obtained three orthogonal factors: (1) maintenance of membership character, (2) objective attainment behavior and, (3) group interaction facilitation behavior. Further administration and revision of the instrument by Halpin and Winer,\(^\text{16}\) yielded five dimensions which were factor analyzed to produce four orthogonal factors:

1. Consideration—behavior indicative of friendship, mutual trust, respect and warmth;
2. Initiating Structure—behavior that organizes and defines relationships or roles and establishes well-defined patterns of organization, channels of communication, and ways of getting jobs done;
3. Production Emphasis—behavior which makes up a manner of motivating the group to greater activity by emphasizing the mission or job to be done, and
4. Sensitivity—sensitivity of the leader to, and his awareness of social interrelationships and pressures inside or outside the group.

Because the first and second factors were found to account for a greater

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proportion of common variance (i.e., they were a part of the other two
factors), the factors of "production emphasis" and "sensitivity" were
eventually dropped.

At about the same time as the Ohio State studies, research was
being conducted at the University of Michigan Survey Research Center
on the effects of foreman behavior upon small group productivity and
member satisfaction. The result of this effort was to produce conceptual
schemes of leader behavior which were closely akin to the Ohio State
dimensions—especially those of "Consideration" and "Initiating Struc-
ture."

For example, Katz, Maccoby, and Morse developed the concepts
of "employee orientation" and "production emphasis." Employee orienta-
tion was defined as behavior emphasizing a personal interest in sub-
ordinates and acceptance of personal needs. Production orientation
stressed production goals and the technical nature of work activities,
including the view that employees were instruments for accomplishing
work.

Other formulations, arising out of research at Michigan, con-
ceptualized the leadership dimensions of "differentiation of supervisory
role," "closeness of supervision," "employee orientation," "group re-
lationships," and "providing direct need satisfaction," "structuring

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17. D. Katz, N. Macoby, and N. C. Morse, Productivity, Super-
vision, and Morale in an Office Situation (Ann Arbor, Michigan: In-
titute for Social Research, 1950).

18. D. Katz and R. L. Kahn, "Human Organization and Worker Motiva-
tion," in L. R. Tripp, ed., Industrial Productivity (Wisconsin: In-
dustrial Relations Research Association, 1951, pp. 146-171).
the path to goal attainment," enabling goal achievement," and "modifying employee goals."\(^{19}\) All of these dimensions seem to closely correspond with the two Ohio State factors of "consideration" and "initiating structure."\(^{20}\)

Although not an actual participant in the Survey Research Center activities, Likert\(^{21}\) built upon some of their findings in postulating five conditions for achieving high organizational productivity: (1) Principle of supportive relations, (2) Group Methods of supervision, (3) High performance goals, (4) Technical knowledge and (5) Coordinating, scheduling, and planning. Again, a basic distinction between "task-oriented" behavior and "person-oriented" behavior is evident among these conditions.

Such a two-factor distinction was utilized by Cartwright and Zander\(^{22}\) at the Research Center for Group Dynamics. Based upon numerous findings, they described leadership functions in terms of:

(1) Group maintenance functions—behavior that keeps interpersonal relations pleasant, provides en-

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couragement, and increases member interdependence, and

(2) Goal achievement functions—behavior that initiates action, keeps members' attention on the goal, develops a procedural plan, provides expert information, etc.

According to Bowers and Seashore, both of these functions refer to constructs somewhat broader than those developed at either Michigan or Ohio State. However, the Ohio State dimensions of consideration and initiating structure appear to be more commonly referred to in the literature as well as used in the development and implementation of various leadership behavior instruments.

Other studies which have used similar postulated independent dimensions of leader behavior include the "nomothetic" and "idiographic" factors of Getzels and Guba; the "instrumental" and "expressive" needs of Parsons; "task effectiveness" and "interaction effectiveness" postulated by Bass; the "task characteristics" and "group character-

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23 D. G. Bowers and S. E. Seashore, op. cit.

24 It should be noted that a study by A. Lowin, W. J. Krapchak, and M. J. Kavanaugh has raised serious doubts about the orthogonality of the consideration and initiating structure dimensions, as measured by the Ohio State scales, ("Consideration and Initiating Structure: An Experimental Investigation of Leadership Traits," Administrative Science Quarterly, 14, No. 2, 1969, pp. 238-253).


istics" of Golombiewski; and the "task-oriented" and "relationship-oriented" styles described by Fiedler.

Although Fiedler's terms are in no way entirely synonymous with these factors, and others previously discussed, certain similarities can be isolated. Essentially, these similarities are based upon the assumption that groups have two basic needs. First, the very fact that a group exists may indicate that it has certain tasks to perform and/or goals to achieve, which could conceivably be influenced by a formal leader. Second, the performance and completion of many of these tasks may required that the group members interact on a personal basis with one another or that the leader individually interacts with the other group members. In this instance, the leader can assume a role in satisfying interpersonal needs and in reducing intragroup stress by exhibiting warmth and respect toward the group members.

A major concern of Fiedler is the manner in which the leadership styles of task orientation and relationship orientation contribute to group performance. He postulates that the effectiveness of a particular leadership style is "contingent" upon the favorableness of a situation to the leader. With the development of his "Contingency Model of Leadership Effectiveness," Fiedler hypothesizes that three variables are important to situational favorableness: (1) leader-member relations, (2) task structure and, (3) formal position power.

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Because Fiedler's model systematically investigates the interaction between leadership styles and the three situational variables, it represents a significant departure from many conventional leadership studies. The model goes beyond observation and categorization of leader behavior by specifying conditions with which a particular leadership style is likely to be effective in accomplishing group tasks. For this reason, the contingency model presents a useful conceptual framework for investigating presidential leadership in an academic setting.

**Development of Fiedler's Model**

As a psychologist, Fiedler was initially interested in measuring aspects of interpersonal relationships. Of particular concern was the development of a method to measure a therapist's prediction of a patient's self-concept in the therapeutic relationship. Using a "Q-Sort" methodology, therapist and patient self-descriptions were correlated to determine any similarity between the two. The major finding of this effort was that predictions of a patient's self-concept were more likely to be similar to that of the therapist when the therapist was judged as being more "competent" than his colleagues. This result was interpreted to mean that this measure of "Assumed Similarity" indicated psychological closeness, acceptance, and permissiveness.

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30 Developed by W. Stephenson and his associates (W. Stephenson, The Study of Behavior: Q-Technique and its Methodology, Chicago: University of Chicago Press, 1953), this method involves a rater sorting variables into a designated number of categories which are usually arranged as a forced normal distribution.

In a second study, substantiation of this interpretation was found when "best-liked" fraternity members were described in terms more similar to raters than were the "least-liked" members. By comparing descriptions of others with self-descriptions, Fiedler concluded that the fraternity members expressed a liking for others if they perceived the others to be similar to themselves.

These results led Fiedler to question how similarity of perceptions would affect small task group performance. After studies with various groups, he developed a measure which provided a score termed the "Assumed Similarity between Opposites" (ASo). The purpose of this measure was to evaluate perceptual differences between most- and least-preferred coworkers.

To obtain the ASo score, individuals were asked to think of all of the persons with whom they had ever worked. Using an identical scale consisting of bi-polar adjectives such as "friendly-unfriendly" and "pleasant-unfriendly," the subjects were instructed to describe their least preferred co-worker (LPC) and their most preferred co-worker (MPC). After summing the two scores, the ASo score was determined to be the quantitative difference between a person's LPC and MPC. A high ASo indicated similar perceptions between the two co-workers; a low score, dissimilar perceptions.

Using the ASo score, Fiedler and his associates began to conduct investigations in an attempt to predict leadership effectiveness. The

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first study involved 14 basketball teams in the central Illinois area. Leaders were determined by sociometric preferences and all team members completed the ASO scales. It was hypothesized that more effective team performance (based upon percent of games won) would be observed in teams that were more psychologically close than in more distant teams. However, the hypothesis was not supported.

The more effective teams had more psychologically distant leaders (i.e., low on ASO) than did the less effective teams. Fiedler concluded that these results suggest that:

The ineffective team seems concerned to a larger degree with good interpersonal relations, the effective team is concerned first with performance.33

Some support for these findings was indicated in a study of 22 student surveying teams. In contrast to the basketball team studies, team performance was based upon ratings of the individual team members. However, results indicated that ASO scores once again correlated negatively with team performance. That is, the leaders of the effective teams perceived larger differences between their MPC and LPC than did the leaders of the less effective teams.

On the basis of these two studies, Fiedler concluded that:

The picture of the effective informal task team as it emerges from our studies thus seems to be a rather tense, psychologically somewhat distant group which fares best under a directive, managing leader.34

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33 As reported in F. E. Fiedler, op. cit., 1967, p. 68.
34 Ibid., p. 71.
However, in order to determine if ASo might be considered a "leader-effectiveness trait," Fiedler conducted a study with a formally appointed leader, in contrast to the sociometric leaders used in the other investigations. For this purpose, he used B-29 bomber crews and hypothesized that ASo scores of aircraft commanders would correlate negatively with performance of the crew members.35

Results indicated that the hypothesis could not be accepted. It seems that all of the crew members were not of equal sociometric importance. Rather, the radar observer and the navigator were found to be particularly important to the aircraft commanders. For this reason, the crews were analyzed by separating them into groups in which the aircraft commander sociometrically endorsed these two officers to a great, mild, and negative extent. This analysis showed that low ASo leaders appeared to be most effective in crews in which they had good relations with the crew. High ASo leaders, on the other hand, seemed to be most effective in crews in which they had only moderately good relations with the crew (i.e., they were accepted by the crews but they rejected the two key crew members).

The primary conclusion from the bomber crew studies was that the effectiveness of groups with strong position power and high task structure will depend upon the leader's relationship with the other group members. An "optimal psychological distance" appears to be re-

quired between the leader and key crew members for effective team performance. Similar conclusions were developed in subsequent studies involving tank crews and anti-aircraft artillery crews.

The one study, perhaps most directly relevant to the present study, was conducted with 32 farm-supply companies by Godfrey, Fiedler, and Hall. A board of directors of each company is responsible for electing a president and subordinate officers who serve at the pleasure of the board. The president (or general manager) of each company is responsible for hiring and firing employees, policy development, and is able to influence promotion or transfer of subordinates. Although the tasks and performance criterion (percent of net income compared to overall sales) are not directly analogous to those faced by a college president, certain similarities do appear to exist from an organizational perspective. Both presidents must coordinate the activities of a group which operates relatively independent of the other group members and the interpersonal relations which develop between the presidents and the group members seem to be important.

In the farm-supply study, it was found that the president was most effective when he maintained a relatively great degree of psycho-

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36 As reported in F. E. Fiedler, op. cit., 1967, p. 79.


logical distance with his subordinates (low ASo). In this regard, the
president must be accepted by either his "keymen" (c.f., assistant
managers) or all of his subordinates. Again, it was concluded that
personal relationships appear to serve a "moderating" effect upon
correlations between leadership style and performance.

The results of the studies previously discussed, and others
conducted between 1951 and 1963, led Fiedler to question why different
ASo leaders were effective in different situations. For example,
he was concerned why high ASo aircraft commanders were effective when
they had moderate relations with their crews while low ASO farm supply
presidents seemed to be most effective when they had relatively good
relations with their subordinates.

The Contingency Model of Leadership Effectiveness

The Contingency Model of Leadership Effectiveness grew out of
Fiedler's prodigious research efforts. The model categorizes groups
according to the three primary situational variables of leader-member
relations, task structure, and position power. A basic assumption of
the model is that different combinations of these variables will de­
termine the favorableness of a situation to a leader (i.e., the extent
to which the situation allows the leader to exert influence over the
other group members).

39 Much of Fiedler's later research was based upon descriptions
of only the Least Preferred Co-Worker Scale (LPC), since it was found
to be a component of ASo (L. J. Cronbach, "Processes Affecting Scores on
'Understanding Others' and 'Assumed Similarity'," Psychological Bulletin,
52, 1955, pp. 177-193.)
Leader-member relations are postulated to be the primary determinant of whether or not the leader can influence the group members. If they are "good" or favorable, the probability of leader influence attempts being successful is increased. Operationally, the quality of leader-member relations is measured by the use of sociometric preferences or the Group Atmosphere Scale (GA), a shortened version of the LPC scale.

Task structure, or the extent to which the group tasks are programmed in a step-by-step fashion, is the second most important situational variable. Very specific tasks make the leader's job easier and, hence, increase the favorableness of the situation. This dimension is operationally measured by four scales originally developed by Shaw. The scales are: (1) decision verifiability, (2) goal clarity, (3) goal-path multiplicity and, (4) solution specificity. In 35 different tasks, interrater agreement using these scales to define task structure ranged from .80 to .88.

The formal position power of the leader reflects the degree to which the leader possesses "reward, coercive, or legitimate" power as described by French and Raven. It is, essentially, the extent to which the leader's formal position permits him to exercise influence

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40 See F. E. Fiedler, op. cit., 1967, p. 269, for an example of a GA scale commonly used.


over group tasks. It is considered to be less important than task structure since highly structured tasks will often increase the leader's position power by themselves. The usual measurement of this dimension involves a thirteen or eighteen item check list to assess leader power potential to sanction subordinates.

Since each of the three variables measures one element of a situation which increases a leader's influence, the model was developed by dichotomizing the three situational variables into eight cells or "octants" of situational favorableness. The relationship of situational favorableness to the situational variables is presented in TABLE 1:

TABLE 1

SPECIFICATIONS OF SITUATIONAL FAVORABleness

<table>
<thead>
<tr>
<th>Variable</th>
<th>Favorable</th>
<th>Moderately Favorable</th>
<th>Unfavorable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leader-Member Relations</td>
<td>Good</td>
<td>Good</td>
<td>Good</td>
</tr>
<tr>
<td>Task Structure</td>
<td>High</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>Position Power</td>
<td>High</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Octant</td>
<td>I</td>
<td>II</td>
<td>III</td>
</tr>
</tbody>
</table>
"relationship-oriented" leadership style, while those scoring low would be "task-oriented" in their leadership style. Using fifteen studies conducted prior to 1964, Fiedler studied the conditions under which the two leadership styles appeared to be most effective in terms of group performance. This effectiveness was, in turn, postulated to be contingent upon the degree of situational favorableness.

As indicated in TABLE 1, situational favorableness can be described as ranging from very favorable (Octant I) to very unfavorable (Octant VIII). Octant I permits the leader to exercise the most influence since he has pleasant relations with the group members, the task facing the group is known and understood by the group, and the leader has substantial power potential residing in his position. On the other hand, an Octant VIII situation allows the leader to exercise almost no influence since he is not well liked by the members, is faced with a highly structured tasks, and has little power to back up his influence attempts.

Situations which present intermediate difficulty to a leader (moderate situational favorableness) are generally characterized by conditions in which the well-liked leader has an unstructured task and low position power (Octant IV), or in which the leader is disliked, has high task structure and either high or low position power (Octants V and VI).

The conditions of leadership effectiveness were determined by plotting the correlation coefficients between leadership style and

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44 F. E. Fiedler, op. cit., pp. 134-141.
group performance on a horizontal axis which corresponded with the eight octants. By connecting the median correlations (with the exception of Octant VI for which no information was available at the time) a "bell-shaped" curve was obtained. Points which fell above the midline of .00 correlation indicated a positive relationship between leader style and performance while points falling below the midline indicated a negative relationship.

The results of this plotting indicated that negative correlations were found for Octants I, II, III (a favorable situation) and for Octants VII and VIII (an unfavorable situation). Positive correlations were obtained in Octants IV and V, a moderately favorable situation. On the basis of these results, Fiedler concluded that high LPC (primarily relationship-oriented) leaders will be most effective in moderately favorable situations and that low LPC (primarily task-oriented) leaders will be most effective in either favorable or very unfavorable situations. Thus, he summarizes that:

...the appropriateness of the leadership style for maximizing group performance is contingent upon the favorableness of the group-task situation.

Validation of this contingency configuration has been obtained in a number of different studies. In 25 different investigations

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45. The magnitude of the correlations for the fifteen studies used in developing the model ranged from .05 in Octant VII to .58 in Octant II.

analyzed by Mitchell et al., 47 35 out of 44 correlations were in the predicted direction. 48 The authors conclude that although the model has good external validity, its predictive validity is somewhat questionable since only two of the 25 studies tested the model in all eight octants. Of these two studies, only one was in the predicted direction.

Since the Mitchell et al. 49 paper, at least two other studies have attempted to test the Contingency Model across all octants. In the first study, Graen, Orris, and Alvares 50 conducted two laboratory experiments with undergraduate students in an attempt to replicate the contingency model. Their results indicated that in no octant were the correlations from both studies in the predicted direction. However, in the first experiment only two correlations were not in the predicted direction (Octants I and III). Nevertheless, they conclude that the two experiments "cast doubt on the plausibility of the contingency model of leadership effectiveness." 51


48 The correlations obtained in laboratory versus field experiments in Octant II were almost entirely at variance with the predicted direction. The authors caution that this observation indicates that care must be used in assuming any generalizability of the model in laboratory experiments.


51 Ibid., p. 201.
In contrast to the Graen, Orris, and Alvares study, an investigation by Chemers and Skrzypek suggests that the model does have predictive validity. Using 32 four-person groups of U.S. Military Academy cadets, they obtained correlations which yielded a correlation of .86 between Fiedler's contingency curve and the obtained correlations of their study. In interpreting these results with those obtained in the Graen, Orris, and Alvares investigation, they point out that:

The present authors can only conclude, along with Fiedler, that the Graen et al. experiments, because of weaknesses in specification and manipulation of experimental variable [sic], do not comprise an adequate test of the contingency model.

Although the model is not without weaknesses, there appears to be some evidence that it does have fairly strong predictive validity. Moreover, when compared with other leadership studies, the contingency model almost "stands alone" because of its predictive qualities involving leadership style and effectiveness. Given these assumptions, several hypotheses pertaining to the model may be explicated.

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52 op. cit.


54 F. E. Fiedler, op. cit., 1967, p. 146.

55 op. cit.


57 op. cit., p. 176.
If the favorableness of the situation in administrative cabinets can be determined and effectiveness criteria developed, it is conceivable that in cabinets described as moderately favorable, relationship-oriented presidents will be rated as more effective than will be task-oriented presidents. It would also follow that in cabinets described as favorable, task-oriented presidents will be rated as more effective than will be relationship-oriented presidents.

Because Fiedler's model only deals with these "pure" types of leadership styles (i.e., task- and relationship-orientation), he has suggested that attention should be given to studying the conditions which are favorable to "intermediate" LPC leaders. In a study by Bass, Fiedler, and Krueger, behavioral correlates and differences in self and most preferred co-worker descriptions were investigated between high, low, and middle LPC individuals. They found that the middle LPCs appeared to be easily distinguishable from the high and low LPCs on all of their measures. In discussing this study in another manuscript, Fiedler proposes that:

At this point there is not enough evidence available to provide a clear interpretation of middle LPC leaders.

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58 F. E. Fiedler, A Review of Research on ASo and LPC Scores as Measures of Leadership Style (Group Effectiveness Research Laboratory, 1964).


scores. The possibility must be kept in mind, however, that a third type of interpersonal style might be measured by medium positions on the LPC scales.

It is possible that the "intermediate" or middle LPC leader may exhibit more flexible leader behavior: task-oriented in one situation and relationship-oriented in another. Such behavior has been termed "role enactment flexibility" by Jacobs and, as a hypothetical concept, has found some empirical support in a study by Moment and Zaleznik. In their study, Moment and Zaleznik found that the individual who performed both task and socio-emotional functions will be endorsed more strongly by group members than a leader with a more rigid orientation, limited to either task or social functions.

Since the LPC scale measures opposing continua of either task- or relationship orientation, the intermediate LPC may be oriented to perform both functions. In this respect, such an individual would possess "degrees" of both orientations, just as some task-oriented individuals may possess a higher degree of task orientation than other individuals on the same continuum. A schematic representation of this concept is diagrammed in Figure 1.

According to the diagram, an individual scoring at point "A" on the task-oriented portion of the LPC scale should be more task-oriented than an individual scoring at point "B." However, the in-

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62 D. Moment and A. Zaleznik, Role Development and Interpersonal Competence (Cambridge: Harvard University, Graduate School of Business Administration, 1963).
Individual scoring at point "C," although less task-oriented than at point "A," will hypothetically not be primarily task-oriented in all situations. Rather, in some situations, this individual may be motivated to exhibit behavior normally expected if he had scored on the lower end of the relationship-oriented portion of the LPC scale—that is, in the zone of role enactment flexibility. Thus, these "intermediate" LPC individuals may not be of an "either-or" leadership orientation of task or relationship orientation, since they represent a "hybrid" of the two more pure styles.

Given the existence of such hybrid leaders as documented in the Moment and Zaleznik study, for example, and given the situations favorable to task- and relationship-oriented leaders in the contingency model, the intermediate LPC leader may be equally effective in either favorable, moderately favorable, or unfavorable situations. If these assumptions are correct, it is hypothetically possible that in cabinets

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63D. Moment and A. Zaleznik, op. cit.
with intermediate LPC presidents, there will be no significant difference in their rated effectiveness in either favorable or moderately favorable situations.

As indicated in the three previous hypotheses, the assumption was made that the situational favorableness of cabinets would be described as being either very favorable or moderately favorable. This hypothesis is primarily based upon the results of the situational ratings of 68 college presidents in a study by Van Gundy and Haynes. It is also possible that cabinet officers, in the same setting, will not differ greatly in their descriptions of situational favorableness. Therefore, it will be hypothesized that both college presidents and their cabinets will describe the situation of the cabinets as being either very favorable or moderately favorable. As the converse to this hypothesis, it will also be predicted that neither college presidents nor their cabinets will describe the situation of the cabinets as being very unfavorable.

**Experience and Situational Favorableness**

In an analysis of 385 leaders and managers in thirteen different organizations, Fiedler found that the correlation between years of managerial experience and organizational performance was only -.12.

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Similar results were obtained in a study of military section chiefs conducted by Csoka and Fiedler. It appears that intuitive inferences about the relationship between years of experience and work performance are not entirely correct. However, Fiedler maintains that the Contingency Model provides a ready explanation as to why the two variables appear to be unrelated.

Because experience on a job provides a leader with more knowledge about the job (i.e., provides a higher degree of task structure), his influence and control should be increased. In other words, experience on a job increases the favorableness of the situation to the leader. However, as previously discussed, favorableness will differentially affect the performance of different LPC leaders. That is, high and low LPC leaders should become effective (or more effective) or ineffective over time in the same position because of changes in situational favorableness. In Fiedler's words:

...as we have seen from the Contingency Model, some leaders perform better when their control and influence is very high or very low [low LPCs] while others perform best when they have only moderate influence and control [high LPCs]. An increase in control and influence, brought about by experience will, therefore, increase

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the performance of some leaders but decrease that of others.68

Assuming basic technical qualifications on the part of the leader, situations that are favorable for experienced leaders will be only moderately favorable for relatively inexperienced leaders. According to the Contingency Model, more experienced, low LPC leaders will be more effective in the relatively favorable situations. However, the same working situation will only be moderately favorable for the less experienced leader and, thus indicate that the high LPC leader will be more effective. The relationship between experience, LPC, and degrees of situational favorableness, is presented in TABLE 2.

TABLE 2

THE EFFECTS OF LEADER EXPERIENCE AND SITUATIONAL FAVORABLENESS UPON GROUP PERFORMANCE

<table>
<thead>
<tr>
<th>Favorableness for Experienced Leaders</th>
<th>Performance of Experienced Leaders</th>
<th>Favorableness for Inexperienced Leaders</th>
<th>Performance of Inexperienced Leaders</th>
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Support for these hypotheses has been found in a number of studies. For example, McNamara studied the performance of high and low LPC elementary and secondary principals. He first correlated LPC scores with performance rankings and found, as expected, no relationship. However, when the principals were divided into groups of high (three or more years) and low (two or fewer years) experience, significant effects were indicated.

The relatively inexperienced high LPC elementary principals were found to be more effective in what Fiedler later analyzed as moderately favorable situations. On the other hand, only the low LPC experienced principals were effective in situations which were very favorable for themselves. Opposite results were found for the secondary principals where Fiedler described the situation as only moderately favorable for the experienced principals and unfavorable for the inexperienced principals. That is, the high LPC experienced secondary principals were more effective in moderately favorable situations and the low LPC inexperienced principals were more effective in the unfavorable situations (See TABLE 2).

In the farm supply company study, previously discussed, most of the managers were accepted by their subordinates and their

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71 Ibid.

position power was relatively high. Fiedler73 described this situation as being very favorable for the experienced managers. In contrast, the situation for the inexperienced managers was rated as being moderately favorable since they found tasks to be less structured, their relationship with subordinates to be poorer, and their position power weaker. After correlating performance ratings with LPC scores for the experienced and inexperienced managers, it was concluded that the predicted relationships did occur. The experienced, low LPC leaders were found to be more effective in the favorable situation while the inexperienced high LPC leaders were more effective in the moderately favorable situation. Similar results were obtained when infantry squad leaders were analyzed.74

Based upon the postulated relationships between experience, situational favorableness and leader LPC, it will be hypothesized that in situations rated as favorable, experienced presidents with low LPC scores will be rated higher in effectiveness than experienced high LPC presidents. If the same postulated relationships are accurate, it should also be true that in situations rated as moderately favorable, experienced and inexperienced presidents with high LPC scores will be rated higher in effectiveness than experienced and inexperienced low LPC presidents.

74 Ibid.
If the hypothetical relationship between the "intermediate LPC" individual and situational favorableness is correct, it is conceivable to hypothesize that the intermediate LPC leader will be similarly affected by experience as are the high and low LPC individuals. Although experience may increase the favorableness of a situation for an intermediate LPC individual, the flexibility of his leadership style should enable him to be more or less equally effective in either favorable or moderately favorable situations. Thus, it will be hypothesized that in cabinets with experienced or inexperienced intermediate LPC presidents, there will be no significant difference in their effectiveness in either favorable or moderately favorable situations.

With respect to the preceding eight hypotheses, it should be noted that the majority of studies using the Contingency Model have involved "interacting" task groups, which are characterized by a high degree of member dependence upon one another for the completion of tasks. However, it may be that administrative cabinets more closely resemble "coacting" groups in which the members perform their jobs relatively independent from one another. Or, it is also possible that cabinets, at times, resemble "counteracting" groups in which solutions of tasks require considerable negotiating on the part of members. In order to justify using the Contingency Model to test the hypotheses, it should be pointed out that evidence exists which suggests that the

75 It is also reasonable to assume that cabinets will vary between and among themselves at different points in time as to which type of group classification they would most resemble.
model may be appropriately applied to all three different group classifications.\textsuperscript{76}

For example, Hunt\textsuperscript{77} studied coacting groups in three organizations where he hypothesized that coacting groups in the organizations would produce the same relationships as would be predicted in interacting task groups. That is, he predicted that there would be a negative correlation between leadership style and group performance scores in groups with high group atmosphere ratings and a positive correlation in groups with low group atmosphere ratings. The two organizations involved were industrial workshops and supermarket grocery departments.

Results of his study indicated that the correlations were significant and in the predicted direction. Hunt interprets his results as suggesting that the contingency model may be a predictor of performance in both interacting and coacting groups. In commenting on Hunt's results, Fiedler\textsuperscript{78} notes that a leader's function of motivating other group members may be similar in interacting and coacting groups which are characterized by high position power and relatively structured tasks. The applicability of these results may be very high if

\textsuperscript{76}For a more detailed comparison of interacting, coacting, and interacting task groups, see F. E. Fiedler, op. cit., 1967, pp. 18-22.


applied to administrative cabinets where the presidents conceivably may have high position power and fairly structured tasks.

In a more recent study, Richards and Cuffe\textsuperscript{79} compared the performance of interacting and counteracting groups using simulated business games. Based upon observer ratings of leadership effectiveness, results indicated that no significant difference existed between the performance of the leaders in the interacting and counteracting groups.

Both the Hunt, and Richards and Cuffe studies appear to indicate that the Contingency Model may be used to predict leader effectiveness in interacting, coacting, and counteracting groups. Thus, it seems that the model may be appropriately applied to administrative cabinets where any three of the group classifications may exist.

Summary

Leadership research has progressed through several distinct phases since mankind first began to ask how leaders were different from other people. The study of "great men" and various traits of leaders gave way to behavioral investigations of the leadership process. Most of the research initiated since the beginning of the present century postulated two primary dimensions of leader behavior: task and person orientations.

In the early 1950's, Fred Fiedler and his associates began to study how a leader's attitudes toward a most- and least-preferred co-

worker affected task performance. Eventually, only the Least Preferred Co-worker Scale (LPC) was used to measure two basic leader styles of task- and relationship-orientation. After conducting studies with many different groups in a variety of work settings, it was postulated that the effectiveness of a leader's style was contingent upon the favorableness of a situation. Three primary variables were thought to define situational favorableness: leader-member relations, task structure, and position power.

This early research led to the development of the Contingency Model of Leadership Effectiveness. Using a variety of validation studies, task-oriented leaders were postulated to be effective in favorable and unfavorable situations while relationship-oriented leaders were postulated to be effective in moderately favorable situations. More recently, Fiedler has studied the effects of experience in a job upon the effectiveness of the different leadership styles. A basic assumption is that experience increases the favorableness of a situation.

Eight hypotheses were developed using the relationships postulated in the Contingency Model. Two of these hypotheses proposed that some leaders would be characterized by "role enactment flexibility," possessing both task- and relationship-oriented behavior. It was proposed that these leaders would be effective across different conditions of situational favorableness (i.e., their effectiveness would not be contingent upon the situation). It was concluded that predictions involving the model should apply to either "interacting" or "coacting" task groups.
METHODOLOGY

The Sample

Presidents of four-year higher education institutions and three of their respective administrative cabinet officers constituted the individuals of the sample. For the purposes of the study, the cabinet officers were defined as those vice-presidents in charge of academic affairs, financial affairs, and development of fund-raising activities. These particular individuals were chosen because of their roles in three major university functions and with the notion that every institution, regardless of size or mission, would have a senior administrative officer in charge of these functions. Specification of role occupants also ensures consistency of a definition of "administrative cabinet" across all colleges.

For the selection of the study participants, a stratified proportional, random probability sample of 200 institutions was drawn using a table of random numbers. The statistical "pool" or population from which the sample was drawn consisted of presidents and cabinet officers of the 1188 four-year higher education institutions.
Excluded from the population were colleges falling into Parker's categories of "Technological, Professional and Related," "Music, Fine, and Applied Arts," and "Theological Schools and Schools for Lay Workers." These categories were eliminated since the study dealt exclusively with the more "traditional" four-year institutions.

In selecting the sample, the 1188 colleges were first grouped into three sub-populations according to enrollment size. The first category, equal to or less than 3000 students, contained 774 colleges; the second, 3001 - 12000 students, contained 278 colleges; the third, equal to or greater than 12001, had 136 institutions. In essence, this procedure represents an attempt to organize the colleges into small, medium, and large categories so that the sampling procedure would yield a representative sample. For instance, although the groupings are more or less arbitrary, it is evident that a larger proportion of the colleges falls into the category of equal to or less than 3000 students. By sampling by categories rather than by the total population, a representative sample from the total population is more likely to result.

The number of colleges in each category (i.e., sub-population) was then divided by the total number of 1188 institutions to obtain the relative proportion of colleges falling into each enrollment group.

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Approximately 65 percent of the colleges fell into the first category; 23 percent into the second; 12 percent into the third.

The sub-population percentages were then multiplied by 200 to determine the number of colleges which should be randomly selected from each enrollment category. After consecutively numbering the colleges within each sub-population respectively, 130 (200 X 65%) institutions were randomly selected from category one, 46 (200 X 23%) from category two and, 24 (200 X 12%) from category three. This sampling procedure resulted in the predetermined sample size of 200 colleges. Geographically, at least one college in 48 states was selected to receive questionnaires. The largest number of colleges selected were located in California and Ohio with ten each. Fifteen states were designated to receive one questionnaire each.

The Research Instruments

Least-Preferred Coworker (LPC) Scale. The 1967 version of Fiedler's LPC scale was used to determine the leadership styles (high, low, or intermediate) of the presidents. The same scale was also used to obtain the LPC scores of the cabinet officers to determine if their scores would be correlated with a president's leadership effectiveness or with differences in perceptions about situational favorableness.

The scale consists of sixteen bi-polar adjectives such as "pleasant-unpleasant" and "friendly-unfriendly" (See APPENDIX A). In using the scale, persons are asked to describe their "Least-Preferred Coworker."
Coworker" by inspecting each of the adjective pairs. The numbers one through eight separate each pair of adjectives, with eight being the most favorable descriptor of each of the adjective pairs. For instance, if a person believes his LPC to be extremely "pleasant," he or she might mark number eight. To determine a person's LPC score, the numbers circled are summed and a total score obtained.3

In contingency model studies, "high" and "low" LPCs have been determined by a variety of methods. These methods include: the median, the mean, the upper and lower thirds of the LPC distribution, and scores falling one standard deviation above and below the mean. While these methods have used attributes (scores) of the population of interest, one other method has utilized normative data to distinguish between high and low LPCs.4

Only two studies have defined methods for determining scores of "intermediate" LPCs. Using a 21 item scale, Evans5 computed variance about item means for subjects and defined low LPCs with ranges from 1.3 to 3.1; medium LPCs from 3.2 to 4.5; high LPCs from 4.6 to 6.7. In

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3In contrast to Fiedler, respondents in the present study were asked to circle numbers rather than place an "X" above a number. In several group administrations of the scale, it was found that many subjects experienced difficulty in locating numbers associated with a given adjective pair.


the other study, by Hansson and Fiedler the 1967 version (16 items) of the LPC scale was used to study similarity and attraction to large organizations. The subjects were divided into groups of high, low, and medium LPCs. However, the procedure described, stated only that the subjects were divided "on the basis of their LPC scores" (p. 261). No mention was made of the actual methodology used to obtain the LPC categories.

The use of normative data to determine different levels of LPC probably represents the most desirable method, as LPC distributions vary slightly from population to population. However, no such data currently exist in sufficient quantity to justify their use with college presidents. For this reason, it was decided that the present study would use the lower, middle, and upper thirds of the LPC distributions of presidents and their cabinet officers. A frequency distribution was developed for this purpose and divided into approximate equal thirds. LPCs were also divided into "highs" and "lows" by dichotomizing the LPC distribution using the median as the cut-off.

**Group Atmosphere Scale.** This scale, a ten-item version of the LPC scale, was used to measure leader-member relations of the administrative cabinets, as perceived by presidents and their cabinet members. The scale is scored in a manner identical to that of the LPC scale: numbers circled (from one to eight) are summed and a total score obtained (See APPENDIX B).

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Based upon Fiedler's methodology, this variable is dichotomized as being either "good" or "moderately poor" by using Posthuma's normative data on the Group Atmosphere (GA) scale. According to Posthuma's data, the mean GA score for field studies is 65; for laboratory experiments, 67. Since the present study can be classified as a field study, good leader-member relations were defined as scores 65 or higher and, moderately poor leader-member relations as scores of 64 or lower.

**Task Structure Scale.** The purpose of this scale was to measure the extent to which presidents and their cabinets perceived the tasks of the presidency to be "structured" or "unstructured." The distinction between structured and unstructured tasks was based upon four of Shaw's task structure dimensions and defined as follows:

1. **Goal Clarity**—the extent to which the general requirements of the president's job are clearly known to him,
2. **Goal-Path Multiplicity**—the extent to which the problems of the presidency can be solved by a variety of procedures,
3. **Decision Verifiability**—the extent to which it would be possible for persons who might evaluate the president's job to know whether it was done correctly or not and,
4. **Solution Specificity**—the extent to which there is generally more than one "correct" solution involved in the typical tasks of the presidency.

The participants in the study were asked to rate the president's job on each of these dimensions. They were instructed to circle

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7 *op. cit.,* p. 12.
8 *op. cit.*
one of the numbers one through eight which followed each of the dimen-
sions presented in question form. For dimensions one through three, the
number one indicates that a particular dimension is highly uncharacter-
istic of a president's job; the number eight, highly characteristic.
For dimension four, solution specificity, the interpretation of the
scale numbers is reversed: number one is highly characteristic; number
eight, highly uncharacteristic (See APPENDIX C). The reversal for
this dimension was necessary to conform with Shaw's original intent of
the dimension. Specifically, "the lower the scale number, the lower the
solution specificity (the more correct solutions there are)."

Although a more complex scale was later developed by Hunt, its
length prohibited its use in the present study. While the Hunt
scale may provide a more sensitive measure, Fiedler points out that
studies with the shortened, eight-point scale version have resulted
in relatively high interrater agreement (.80 and .88).

The task structure scale is scored by summing the numbers
circles. Since task structure is dichotomized for contingency model
studies, the resulting score is interpreted as indicating either high
or low task structure (i.e., structured versus unstructured).

Because normative data do not exist for the variable of task
structure, two different cut-off points were used to determine if cut-

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9 M. E. Shaw, op. cit., as reported in F. E. Fiedler, op. cit.,
1967, p. 289.
10 J. G. Hunt, op. cit.
12 Ibid.
off points make a difference. These cut-off points were the mean and median of the obtained distribution of task structure scores. High task structure was defined as those scores falling above the mean or median of the scores reported; low task structure, those scores falling below the mean or median. Scores falling on the mean or median were defined as being high in task structure.

**Position Power Scale.** This scale was designed to measure perceptions of the extent to which the presidents' formal position power permits them to exert influence and control with their cabinet officers. The thirteen questions used for this purpose were patterned after those developed by Hunt\(^{13}\) with appropriate changes in wording (See APPENDIX D). For example, Hunt's question, "Can the supervisor recommend promotion or demotion of subordinates?" was altered to read for the presidents' questionnaires: "Can you recommend promotion or demotion of cabinet officers?" Hunt's question of whether the supervisor has been given an "official title" was omitted since it can be safely assumed that the response to such a question would operate as a constant across all respondents. That is, it would make little sense to ask if the "president" (an official title) has been given an official title.

An eight-point scale followed each question with numbers ranging from one ("completely") to eight ("not at all"). The study participants were instructed to respond to each question by circling one of the numbers which best characterized their response. In the instrument

\(^{13}\)As reported in F. E. Fiedler, op. cit., 1967, p. 281.
developed by Hunt, the questions were answered by a "yes" or "no" response. However, it was felt that a wider response range might permit the obtaining of a more sensitive measure than an "either-or" type of response.

The expanded scale was also seen as being appropriate in that cut-off points for position power have never really been adequately established. The usual procedure has been to split the scores at the median of the "yes" and "no" responses. However, as Mitchell, Biglan, Oncken, and Fiedler point out, this method overlooks different medians obtained in different studies.

The position power variable was dichotomized using the procedure for the task structure variable. Both mean and median cut-offs of the obtained position power distributions will be used. However, because of the direction of the scale items, high position power will be defined as those scores falling below the mean of median and low position power as those at or above the mean or median.

Effectiveness Rating Scale. In order to test the prediction concerning interactions between leadership styles and situational favorableness, it was necessary to develop a measure of presidential leadership effectiveness. For this purpose, a five question, "Presidential Rating Form" was developed after reviewing the literature and interviewing several college presidents and cabinet officers.

Since it was necessary to use effectiveness criteria which could be appropriately applied across all situations faced by presi-
dents, it was decided to use "global" rather than more specific measures. The use of the global approach also seemed appropriate when it is considered that the "products" of a college are considerably different from those of a business concern, for example. In the business world, a more definable output provides rather specific effectiveness criteria (e.g., profit margin) which can be more readily and accurately measured.

In higher education, the situation is much more complex because of an intricate web of vaguely defined or difficult to measure goals and objectives. Even if specific criteria could be identified, the problem still exists of comparability across all colleges. For instance, changes in student enrollment might be used as a specific measure of effectiveness in colleges. However, such changes might be due more to changes in the economy, local or regional manpower needs, tuition costs, competition with other colleges, the curriculum, or a variety of other factors.

In an attempt to avoid these difficulties posed by the use of specific criteria, four global areas were used: 1) campus planning, 2) budgetary decisions, 3) academic decisions and, 4) fund-raising activities. A fifth item, policy decisions in general, was added to offset any "over-weighting" tendencies that a rater might apply to any of the other four primary areas.

The four primary areas appear to represent four necessary and important dimensions in which all presidents would have an opportunity to exert leadership with their cabinets--either directly or indirectly through delegation. Although all presidents would not always be directly involved in the four areas or function, it would be difficult to imagine
a president who would not be involved in making major decisions, at least indirectly, in all areas.

The cabinet officers used in the study are directly involved in the implementation of these areas within their respective functional areas. Depending upon the value and/or importance placed upon a problem or issue at any given time, it is reasonable to assume that they would be involved either individually or as a group with the problem in attempting to provide a solution or arrive at a decision. Thus, it would appear that they would be in a position to evaluate the presidents' effectiveness to a greater extent than would an external group such as a board of trustees.

In the questionnaires given to the cabinet officers, they were instructed to rate their president on the five questions by circling numbers on a numerical scale which followed each question. The numbers ranged from one ("very effective") to eight ("relatively ineffective"). The presidents were also instructed to complete an identical instrument on themselves (See APPENDIX E).

The scale is scored by summing the circled numbers. Possible scores range from five to 50, with five indicating the highest degree of perceived effectiveness and 40 the highest possible "relatively ineffective" rating.

Background Information

The first part of the questionnaires designed for presidents and their cabinet officers, consisted of nine background information questions. Questions one through eight sought such data as age, sex, race, years in position and previous position. Question nine was de-
signed to obtain perceptions of whether the cabinet, as a group, could be classified as "interacting," "coacting," "counteracting," or some combination\(^1\) (See APPENDIX F). Thus, seven different responses were possible for this question: 1) interacting only, 2) coacting only, 3) counteracting only, 4) interacting and coacting, 5) interacting and counteracting, 6) coacting and counteracting or, 7) interacting, coacting, and counteracting.

This classification of the cabinet structure was included for two primary reasons. First, the majority of the contingency model studies have dealt with interacting groups. If the results of the present study are not entirely in the expected directions, the nature of the cabinet structure may provide some explanation. Also, as discussed in Chapter Two, there is some indication that the model may be appropriately applied to the other two group classifications (vis., coacting and counteracting). Thus, if the predictions are confirmed, it will be possible to have some indication of the type of group involved. Second, collection of this data will permit comparisons between perceptions of presidents and their cabinet officers. In this respect, classification differences may show a relationship with perceptions of group atmosphere, for example.

**Procedures for Collecting Data**

Each of the 200 college presidents in the sample was mailed an envelope containing one yellow and three white questionnaires. The

\(^1\) Definitions of these classifications have been previously presented in Chapter Two.
Presidents were asked to forward the three white questionnaires to three members of their administrative cabinets: the vice-president for finance, the vice-president for academic affairs, and the vice-president for development. (See Appendix G for the letter used.) All questionnaires were identical except for appropriate changes in wording for the questionnaires given to the presidents and cabinet officers.

Approximately one month after the questionnaires had been mailed, a follow-up postcard reminder was sent to the presidents who had not responded. Two weeks later, a second follow-up was conducted in which letters and questionnaires were sent to the non-respondents. After inspecting the results of the second follow-up, it was discovered that nine institutions were represented by returned cabinet questionnaires but that the presidents of the same institutions had not responded. A reminder in the form of a letter was then sent to these presidents.

Coding sheets were developed for processing the raw data after the questionnaire scales had been hand scored along with recording data from the background information portion of the questionnaire. The data from the questionnaires were arranged so that responses of a particular president could be identified with the responses of his cabinet officers. All of the statistical treatments using the data were computed by hand except for intercorrelations and multiple regression analyses which were performed using packaged computer programs.

**Analysis of Data**

The purpose of the statistical analyses were to test the hypotheses concerning interactions between leadership styles and situational
favorableness and, to test the effects of leader experience upon these interactions.

Before these analyses were performed, it was first necessary to determine which data set of descriptions to use in characterizing the different octant conditions. Since both presidents and their cabinet officers have described the three cabinet situational variables of leader-member relations, task structure, and position power, a decision had to be made as to whether this data was to be considered separately or combined. That is, should the octant conditions be described as perceived by presidents alone, cabinet officers alone, or by both groups combined? The same decision also had to be made with respect to president and cabinet officer ratings of presidential effectiveness.

If presidential and cabinet officer situational variable and effectiveness descriptions had been found to be not significantly different, it would have been possible to combine their data on these variables to describe the octant conditions (i.e., situational favorableness) and presidential effectiveness. If the descriptions of the variables had been significantly different, however, it would have been necessary to perform two separate analyses involving interactions of leadership styles and situational favorableness. If significant differences appeared between the groups on octant descriptions but on effectiveness ratings, separate analyses would have been performed using the two effectiveness ratings.

Statistical tests of significance between the mean scores of the three situational variables and effectiveness ratings, as described by both presidents and cabinet officers were computed to see if the per-
ceptions of the two groups should be treated as separate or combined data. For this purpose, a few score formula of Fischer's \(^{16}\) "t" ratio for testing the difference between uncorrelated means involving unequal n's will be used. This formula, as taken from Robson, \(^{17}\) may be described as follows:

\[
\sqrt{\frac{X_1 - X_2 \pm}{\left(\sum X_1^2 - \left(\sum X_1\right)^2/N_1\right) + \left(\sum X_2^2 - \left(\sum X_2\right)^2/N_2\right)} \times \left(\frac{1}{N_1} + \frac{1}{N_2}\right)}} \]

with \((N_1 - 1) + (N_2 - 1)\) degrees of freedom;

where \(X_1\) and \(X_2\) = the means of the two groups

\(x^2 - (\bar{X})/N\) = sums of squares of the two groups

\(N_1\) and \(N_2\) = the number of cases represented for each variable

Mean scores will be computed \(\frac{\sum X}{N}\) on each of the four measures for the two groups and "t" ratios computed using the above formula. Significance will be set at the .05 level of confidence for a two-tailed test.


\(^{17}\) C. Robson, Experiment, Design and Statistics (Bungay, Suffolk: Chaucer Press, 1973).
In order for this test to be appropriately applied, it was necessary to make several assumptions. Among the more important of these were sample size and homogeneity of population variances. Obviously, the effect of the assumptions were unknown until the data were analyzed. Assuming that the sample sizes used in the "t" tests would not present a problem, the homogeneity of variance question would remain. If the variances of any two groups in a "t" test were significantly different, the particular formula used may have been inappropriately applied.

To test for differences in variance between groups on any of the three situational variables or the effectiveness ratings, an "F" ratio was to be computed where:

$$F = \frac{s_1^2}{s_2^2}$$

$s^2$ = the sum of the deviation scores, squared, with $s_1$ being greater in value than $s_2$. If there is a significant difference ($p < .05$), as indicated for the appropriate degrees of freedom and the table values for $F$, the computed value of "t" cannot be interpreted by the conventional use of a "t table" of values. Instead, it would be necessary to use a formula to test for "t" when the variances differ.

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18 Other assumptions would include random sampling and relatively normal population distributions. However, it should be noted that a study by C. A. Boneau ("The Effects of Violations of Assumptions Underlying the 't' Test," Psychological Bulletin, 42, 1960, pp. 49-64) as shown "t" is not strongly affected unless $N$ is very small.
Such a formula has been developed by Cochran and Cox, and may be described as follows:

\[
t = \frac{s_{x1}^2(t_1) + s_{x2}^2(t_2)}{x_{x1}^2 + s_{x2}^2}
\]

where \( t_1 \) is the five percent value of "t" at \( N_1 - 1 \) degrees of freedom, and \( t_2 \) is the five percent value of "t" at \( N_2 - 1 \) degrees of freedom.

If the computed value of "t" were greater than the value obtained by applying the Cochran and Cox formula, then the null hypothesis would be rejected at the .05 level. That is, there would appear to be a difference between the population means and that this difference probably does not occur by chance 95 times out of 200. If the population variances do not significantly differ, as indicated by the F ratio, it would not be necessary to apply the Cochran and Cox formula and "t" could be interpreted in the conventional manner.

If any one of the comparisons was significantly different (at the .05 level of confidence), it would be necessary to conduct two different analyses based upon two different descriptions of the octant conditions and effectiveness ratings. If none of the "t" ratios were statistically significant, the mean scores of both presidents and cabinet officers were to be combined (by averaging) and then treated as combined data.

A second preliminary test of the data concerns the notion that a person's LPC score may affect his or her perception of situational variables. This relationship has been suggested by both McMahon and Ashour. If LPC does influence perceptions of the variables of the model, it is possible that such confounding effects might contribute significantly to error variance in the data analyses. To test for such effects, the Contingency Model variables will be intercorrelated using both presidents' and cabinet members' perceptions of the variables (with the Pearson "r"). A partial correlation coefficient matrix was then computed for the variables with LPC held constant. If the zero-order coefficients were not greatly changed, then it could be concluded that LPC level does not influence perceptions of the situational variables. If LPC does influence these perceptions, this finding would have to be taken into account when interpreting the results. The general formula for first-order partial correlation was:

\[
    r_{12.3} = \frac{r_{12} - r_{13}r_{23}}{(1 - r_{13}^2)(1 - r_{23}^2)}
\]

To test the hypotheses which involved LPC and situational favorableness, Pearson product moment correlation coefficients were computed within the octant conditions described by presidents and

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cabinets for all LPCs combined and then for intermediate LPCs only. The formula used to compute these coefficients will be the raw score formula for "r":  

\[ r = \frac{N\bar{xy} - (\bar{x})(\bar{y})}{\sqrt{[N\bar{x}^2 - (\bar{x})^2][N\bar{y}^2 - (\bar{y})^2]}} \]

where \( X \) = presidential LPC scores
\( Y \) = effectiveness rating scores and,
\( N \) = the number of \( X \) and \( Y \) pairs.

The Pearson "r" was computed for an octant condition whenever \( n \) was equal to or greater than five.

President LPC scores and effectiveness ratings were correlated in the different octants using the Spearman rank-order difference coefficient. It has been pointed out by Shiflett\(^{23}\) that Fiedler's traditional use of Spearman coefficients may be based upon erroneous assumptions. Specifically, Fiedler's choice of Spearman's "p" (rho) over the more commonly used "r" appears to rely upon the assumption that "p" is an appropriate estimate of the true population correlation. The fault of this assumption is that "p" assumes that there are no tied ranks and that relatively large samples exist.

Using data analyzed from previous Contingency Model studies, Shiflett goes on to point out that "p" tends to overestimate "r" when

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\(^{22}\) J. P. Guilford and B. Fruchter, op. cit., p. 85.

N is very small but underestimates "r" when N is relatively large. Nevertheless, he concludes that either statistic appears to result in a relatively stable pattern of relationships. Because Shiflett's suggestion of the relative comparability of "p" and "r" seems to represent a tenable hypothesis, the present study will correlate LPC scores and effectiveness scores, by octants, using Spearman's "p" in addition to Pearson's "r." It may be that the results will reflect differences in the two measures.

As described for the computations using "r," Spearman "p's" were computer, first for all LPCs combined and then for intermediate presidents alone. The formula used to compute these coefficients was the raw score formula for "p":

\[ p = \frac{6\bar{D}^2}{N(N^2 - 1)} \]

Because of computational difficulties, "p" would not be computed if \( n \geq 25 \).

According to the prediction of the hypotheses, both coefficients (Spearman and Pearson) should yield positive coefficients in favorable situations and negative coefficients in moderately favorable situations. However, these predictions will only be applicable to the hypotheses involving only high and low LPCs. Since it is predicted that intermediate LPCs will be characterized by "role enactment flexibility," the obtained direction of coefficients using only intermediate LPCs

\[ ^{24} \]

\[ ^{25} \]
may or may not conform to predictions of the Contingency Model. That is, the probability of obtaining positive or negative coefficients within a given situational favorableness condition should be .5. For a hypothesis involving intermediate LPCs to be confirmed, it was necessary that the coefficients in favorable or moderately favorable situations be either all positive or all negative.

To analyze the hypothesized relationships between LPC and experience in the presidency, McNamara's methodology was first used to test the predictions of the Contingency Model. For this purpose, a Pearson "r" was computed between years of experience in the presidency (current position) and effectiveness ratings for both presidents' self-ratings and those of the cabinet members for the presidents. Assuming that a low and statistically insignificant coefficient would be obtained from this operation, the presidents were then divided into groups of those with four or more years of experience in their present position (experienced), and those with three or fewer years (inexperienced). Years of experience and effectiveness rating were then correlated for the conditions of situational favorableness using Pearson and Spearman coefficients.

According to McNamara's results and an interpretation provided by Fiedler, positive coefficients, indicating low LPC scores correlated with low effectiveness scores should be obtained for the experienced presidents.

\[26\text{V. D. McNamara, op. cit.}\]

\[27\text{F. E. Fiedler, op. cit., 1972, p. 459.}\]

\[28\text{Note that the lower the numerical effectiveness score, the higher or the greater the degree of effectiveness indicated.}\]
presidents. Conversely, negative coefficients, indicating high LPC scores correlated with low effectiveness scores, should be found for the inexperienced presidents. As interpreted by Fiedler positive correlations should be found in favorable situations and negative correlations in moderately favorable situations.

This interpretation is essentially another way of saying that experienced low LPC presidents will be more effective in favorable situations than experienced high LPCs, and that inexperienced high LPCs will be more effective in moderately favorable situations than inexperienced low LPCs. However, the possibility may exist that the situation described by experienced presidents is not favorable but, rather moderately favorable. In a similar manner, inexperienced presidents may actually be in a situation described as favorable instead of the predicted moderately favorable situation.

To test for these possible differences in the number of experienced or inexperienced presidents falling into the situational categories of favorable or moderately favorable, a Chi Square (χ²) test for a 2 X 2 contingency table was performed using two levels of experience and two levels of favorableness.

For the Chi Square test, it was necessary to reject the null hypothesis that there is no significant difference in the number of presidents found in any one cell compared with another. The specific formula used to test for this difference is:

\[ \chi^2 = \sum \frac{(O - E)^2}{E} \]

\[ \chi^2 = \frac{[(0 - E) - .5]^2}{E} \]

where \( 0 = \) observed frequencies

where \( E = \) expected frequencies

If the null hypothesis was rejected, it could be concluded that the relative proportion of presidents found in each cell did not occur due to random variation. Thus, experienced presidents would tend to be found in favorable situations and inexperienced presidents would be found in moderately favorable situations as expected. If the null hypothesis was not rejected (at the five percent level of confidence), then caution would have been necessary to interpret the results in the conventional manner.

To test the hypotheses involving predictions of situational descriptions for presidents and cabinet officers, the same Chi Square methodology was used. However, the contingency table involved two levels of favorableness by two levels of perceptions (presidents' and cabinets'). If a statistically insignificant Chi Square value was obtained, the fourth hypothesis would be confirmed. (The fifth hypothesis, which involves describing situations as unfavorable, would be confirmed if neither presidents nor cabinets describe the cabinet situation as unfavorable). Because different cut-offs of the situational variables have been used in previous research, two of these

\[ \text{In C. Robson, op. cit., p. 86. It should be noted that this particular formula incorporates "Yate's Correction" of subtracting .5 which assumes an expected frequency, in any given cell, of less than ten.} \]
(mean and median) were selected for use in this study to determine if the cut-offs used would make a difference in the results.

Analysis of Variance Tests of the Hypotheses

The preceding tests of the hypotheses represent attempts to validate Fiedler's postulated relationships between LPC, situational favorableness, and leader experience using the conventional methodology of correlation coefficients. One of the more frequent criticisms of the Contingency Model is that a large proportion of obtained coefficients fail to reach acceptable levels of statistical significance.\(^31\)

However, Shiflett\(^32\) suggests that this criticism may be too harsh:

... if Fiedler has used a more powerful statistical technique, such as analysis of variance, many of his numerous research efforts might have yielded more significant findings than his reliance on rank order correlations has permitted.

To test this notion—which has also been proposed by Graen et al.\(^33\)—Shiflett reanalyzed data from studies conducted by Shiflett and Nealey, Hardy, and Chemers and Skrzypek.\(^34\) In every instance, the number of

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\(^{32}\) S. C. Shiflett, op. cit., p. 433.


statistically significant relationships was greater when analysis of variance (ANOVA) was used than when correlation coefficients were computed.

Because replication of a model requires adherence to criteria of statistical reliability in order to accept or reject the null hypothesis, it was necessary to analyze the hypotheses of the present study by the use of ANOVA techniques. Analysis of variance permits testing of the null hypothesis at a given level of statistical significance, and provides the opportunity to test for interaction between variables. In addition, it must be noted that the specific hypotheses of the study represent a natural factorial design which can be readily adapted to factorial ANOVA.

For the present study, it was assumed that there would not be an equal number of cases per cell within each ANOVA computed. For such an ideal situation, the president and cabinet data would have to be assigned to different cells. Because data in the present study was obtained from returned mail questionnaires, this was not possible. Therefore, unweighted means analysis for unequal n's was selected as an appropriate technique.

In contrast to ANOVA which is based upon an equal number of cases per cell (or at least intercell proportionality), unweighted means analysis involves making adjustments for different cell means which are based upon different n's. The procedure used for the present

---

study was that described by Kirk. The basic computations follow those of an ANOVA calculated for equal n's: sum of squares are computed for total, between sets, between rows, between columns, interaction, and within sets. The only difference is that the different cell means are considered separately in relation to their different n's. This procedure gives equal weight to the means of each cell even though more data are contained in some cells than others.

In addition to the six sum of squares computations listed above, unweighted means analysis involves two other steps which adjust the data to give equal weight to the data in each cell. Thus, a total of eight different steps are needed to obtain the four basic formulas used in computing the F ratios: sum of squares for 1) between rows, 2) between columns, 3) interaction and, 4) within cell or residual variance.

These four formulas may be represented as follows:

\[
\begin{align*}
\text{rows} &= SS_A = \bar{A}(\bar{A} - \bar{X}) \\
\text{columns} &= SS_B = \bar{B}(\bar{B} - \bar{X}) \\
\text{interaction} &= SS_{AB} = \bar{AB}(\bar{AB} - \bar{A} - \bar{B} + \bar{X}) \\
\text{residual} &= SS_R = [ABS] - [AB]
\end{align*}
\]

The eight steps needed to compute these formulas may be represented as follows:

\[
(1) \quad [ABS] = \sum_{1}^{N}(ABS)^2
\]

---

If the computer F ratios were found to be statistically significant at the .05 level of confidence or better, after dividing mean squares by
the appropriate degrees of freedom, the predicted differences between the pairs of mean effectiveness scores would be tested. These differences would be tested by the post-hoc method of Scheffe.

The first step of this test involves calculating the standard error of the difference between the means of the two groups tested:

\[
SE = \frac{(\bar{x}_1 - \bar{x}_2)^2}{ms_R \frac{(N_1 + N_2)}{N_1 N_2}}
\]

where \(ms_R\) = residual mean square

The "S" statistic is then calculated as follows:

\[
S = (k - 1) F_{.05} (k - 1, m)
\]

where \(k\) = the number of groups in the ANOVA and,

\(F_{.05} (k - 1, m)\) = the table value of \(F\) at the .05 level for \(k - 1\) and \(m + N - k\) degrees of freedom.

If the value of the "S" statistic exceeds the value of the standard error of the difference between the means calculated for any given

---

37 The degrees of freedom for the ANOVAs was obtained as follows:

<table>
<thead>
<tr>
<th>Source</th>
<th>Degrees of Freedom</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Rows</td>
<td>(p - 1)</td>
</tr>
<tr>
<td>Between Columns</td>
<td>(q - 1)</td>
</tr>
<tr>
<td>Interaction</td>
<td>((p - 1)(q - 1))</td>
</tr>
<tr>
<td>Residual</td>
<td>(N - pq)</td>
</tr>
</tbody>
</table>

pair of means, then it could be concluded that the means appear to be statistically significant in their difference at the 5 percent level.

To test all of the hypotheses (except those involving descriptions of situational favorableness) for differences in effectiveness of high, low, and intermediate LPCs in favorable and moderately favorable situations, the following design was used:

\[
\begin{array}{ccc}
\text{LPC} & \text{High} & \text{Low} & \text{Intermediate} \\
\text{Favorable} & & & \\
\text{Moderately Favorable} & & & \\
\end{array}
\]

Using mean and median situational cut-offs, two ANOVAs were computed using this design for both presidents and cabinet officers (if their perceptions of situational variables were statistically significant in difference). Two ANOVAs were also computed using the same design without intermediate LPCs since separating out the intermediate LPCs permits testing the more conventionally used upper and lower thirds of the LPC distribution to define high and low LPCs.

A total of eight ANOVAs were computed for both presidents and cabinet officers if their situational descriptions differ. Based upon the predictions of the hypotheses, significant effects should be found for LPC and interaction for the high and low LPC presidents. However,

\[39\text{e.g., R. W. Rice and M. M. Chemers, "Personality and Situational Determinants of Leader Behavior," Journal of Applied Psychology, 60, 1975, p. 21.}\]
no significant effects should be found for the intermediate LPCs since these hypotheses predict an insignificant difference.

In addition to the post-hoc analysis of the significant F ratios, ANOVAs containing at least one significant F ratio were investigated to estimate the "strength of association" between the treatment conditions (LPC and favorableness) and the dependent variable (perceived effectiveness). The measure used for this analysis was the intraclass correlation coefficient which was computed directly from data provided by the ANOVAs.

As described by Kirk, the computational formula for the intraclass coefficient was:

\[
p_{XX} = \frac{\sigma^2}{\sigma^2_A + \sigma^2_B + \sigma^2_{AB} + \sigma^2_R}
\]

where

\[
\sigma^2_A = \frac{MS_A - MS_{AB}}{nq}
\]

\[
\sigma^2_B = \frac{MS_B - MS_{AB}}{np}
\]

\[
\sigma^2_{AB} = \frac{MS_{AB} - MS_R}{n}
\]

\[
\sigma^2_R = MS_R
\]
The computational formula, $P \times A$, estimates the variance component for favorableness in the ANOVA. The other variance components were obtained by substituting in the numerator of the formula. Thus, to estimate the strength of association for LPC, the value of $2B$ would replace $2A$. The same procedure was then followed for the interaction variance component. In cases where the component estimates were negative in sign, the components were estimated to be zero.

Three intraclass coefficients were computed for each ANOVA containing a significant $F$: for favorableness, for LPC, and for the interaction of favorableness and LPC. These coefficients were interpreted in a manner similar to that of the coefficient of concordance or the Pearson "$r$" squared. That is, they estimated the proportion of effectiveness accounted for by each of the three variance components. For example, an intraclass coefficient of .50 for LPC would indicate that, in that particular ANOVA, 50 percent of the variance in effectiveness was accounted for by presidential LPC scores.

**Multiple Regression Analysis of the Hypotheses**

While the coefficient of intraclass correlation indicated the proportion of variance in effectiveness accounted for by favorableness, for example, it did not indicate how much of this variance is attributable to the different situational variables when considered alone. The interpretation of the results would be greatly enhanced if it could be known which situational variable or combination of variables best "predicts" the dependent variable of effectiveness.

By the use of multiple regression analysis, such predictions could be made with the multiple correlation coefficient "$R$." Squaring
"R" would then indicate the proportion of variance in effectiveness accounted for by the independent variables. The basic multiple regression formula was:

\[ D = b_1 l_1 + b_2 l_2 + \ldots + b_n l_n + c + r \]

where \( D \) = the dependent variable  
\( l \) = the independent variables  
\( b \) = unnormalized regression coefficients  
\( c \) = a constant  
\( r \) = the residual

However, since it was desirable to determine which independent variables provided the "best" prediction of effectiveness, this formula by itself was not entirely sufficient. Rather, it was necessary to determine the "best" predictors by using the fewest number of independent variables. For example, if group atmosphere and task structure combined, were the best predictors of effectiveness (i.e., account for the most variance in effectiveness), the omission of LPC would be significant.

The specific method used to make such predictions is known as stepwise multiple regression. With this method, a separate regression equation was constructed for each independent variable in sequence. The first step in this process involved selecting the one best predictor. A second variable was added if it provided the best prediction in combination with the first variable. This sequence proceeded until all of the variables, which will make a significant contribution to the prediction equation, were added.

The statistical operations used for this process was performed by computer with a package known as Statistical Package for the Social
Sciences (SPSS). By selecting the appropriate option for the SPSS sub-program of multiple regression, a summary table of the multiple R's was printed out. For the analysis of the data, the $R^2$ values of this table were used to determine which variable and combination of variables accounted for the greatest proportion of variance in effectiveness.

Separate multiple regression summary tables were computed using all LPCs combined, trichotomized levels of LPC (high, low, and intermediate), and dichotomized levels of LPC. If cabinets and presidents significantly differed in their perceptions of the situational variables, it was necessary to compute multiple R's squared for the different LPC levels using both cabinet and president perceptions of the situational variables. Thus, a total of 12 different sets of multiple R's squared are possible, all of which may indicate different combinations of LPC and situational variables as the best predictors.

If the various LPC levels were found to be based upon N's of less than 100, it would be necessary to apply a correction formula to the $R^2$ values. This is because the "least-squares" solution involved in computing the multiple R uses "chance deviations" which inflate the value of R. The formula used to correct for this bias when N is relatively small was:

$$cR^2 = 1 - (1 - R^2) \left( \frac{N - 1}{N - m} \right)$$

---

41 J. P. Guilford and B. Fruchter, op. cit.
42 Ibid., p. 366.
where \( N \) = the number of cases

\( m \) = the number of variables correlated

\( N - m \) = the number of degrees of freedom, one degree being lost for each variable.

The corrected values of the multiple \( R^2 \)'s would then be used to interpret the data.
IV

RESULTS AND ANALYSIS OF DATA

Questionnaire Response Rates. Of the 200 questionnaires mailed to the presidents for their own responses, 81 or 40.5 percent were returned. Due to death, a policy of completing only state or federal questionnaires, or incomplete data, 69 or 34.5 percent were usable for data analysis. Questionnaires sent to three cabinet officers of each of the 200 institutions were returned by 155 or 25.83 percent of the 600 total mailed, of which 152 or 25.33 percent were usable. Development officers returned 44 or 29%, academic officers returned 56 or 36.8%, and 52 or 34.2% were received from business officers.

This difference in the number of questionnaires received from each cabinet position indicates that not all cabinet officers at a given institution responded. Of the 152 cabinet returns for the 69 institutions, 13 or 18.8% were from a single cabinet member, 31 or 49.9% were from two members and, 25 or 36.2% were received from all three cabinet officers used in the mailing. Of the nine institutions for which cabinet but not presidential questionnaires had been received, six responded out of the nine presidents who received a third follow-up mailing.
Generalizability of Results. Because of the small relative percentage of questionnaires returned, the question arises as to the representativeness of the obtained data. That is, to what extent can the results be expected to be generalizable to the total population of 1188 colleges or the 200 sample colleges used in the study? The answer to this question is by no means simple. As with all mail questionnaire or survey research, a certain amount of sample or response bias is probably unavoidable. The exception might be when a return rate for a random probability sample is in excess of, say 95 percent, which would approach the total sample size drawn from the population. However, even this response rate might be questionable if the sample size is relatively small.

One procedure to reduce bias and increase representativeness is the use of stratification in sampling. Such a procedure was used in the present study in that the 200 colleges in the sample were proportionately stratified by enrollment size. However, it is questionable if this procedure significantly eliminated a large proportion of the sample bias since it would be necessary to establish a relationship between enrollment size and perceptions of the experimental variables. Nevertheless, the stratified sampling may have enhanced the representativeness of the size of college involved.

To solve or at least attempt to resolve the problem of generalizability, it was necessary to rely upon established statistical techniques. To do otherwise would introduce the possibility of in-

\[1\] J. P. Guilford and B. Fruchter, op. cit., p. 124.
curring even greater errors of statistical inference. Suppose, for example, that 69 presidential questionnaires had been received from a sample of 100 institutions rather than the 200 used in the study. Could it then be concluded that the data obtained from the 69 percent return is more generalizable than the 34.5 percent return when 200 colleges are used? The answer is no unless the purpose of the investigation is to generalize to the original sample instead of the total population. However, such a generalization assumes that confidence existed that the size of the original sample was of sufficient magnitude to permit generalizations to the population.

To use another example, suppose that two researchers (A and B) mailed questionnaires to the same population containing 1000 colleges and that the receiving institutions were randomly selected using probability statistics. Researcher A mails 400 questionnaires and receives 100 or 25 percent return from his or her original sample. Researcher B, on the other hand, mails 100 questionnaires and receives 60 or 60 percent in return. Based upon these return rates (and excluding problems of sample bias for the moment), it cannot be positively concluded that B's return rate indicates a higher probability of being generalizable to the total population than A's.

Depending upon the standard error of the mean of B's returned sample, his questionnaires may or may not be more generalizable. Also of major importance, in addition to the standard error, is the sample size of the returned questionnaires in relation to the standard error. A failure to consider "absolute" rather than "relative" sample size would violate a basic assumption of the central limit theorem. That is,
the extent to which randomly drawn sample means will approximate a
given population is directly proportional to the sample size.\(^2\) (This
of course assumes that the questionnaires were randomly returned.)
Nevertheless, one goal of most research is to generalize to the total
population and not to a sample, unestablished in appropriate size, as
would be the case if "relative" sample size (i.e., percentage returns)
were used as the criterion.

A goal of the present study was to generalize to the total
population. To do so, it was first necessary to have some confidence
that the original sample size was of sufficient magnitude to provide
for reliable inferences of the population parameters. According to
Arkin and Colton\(^3\) a population of 1000 requires a sample size of 169
to be 95 percent confident within \(\pm\) three percent that 169 randomly
drawn cases will be a reliable estimate of the population. As noted,
the present study has met this initial criterion by using an original
sample of 200 institutions. In the first example, the 69 percent re­
turn with 100 institutions would not have satisfied this criterion.

To some extent, an idea of the representativeness of the ob­
tained results can be seen by comparing the enrollment strata with
the enrollment figures for the responding institutions. For colleges
of stratum number one (under 3000), 45 responses (34.6%) were received
from the 130 mailed questionnaires; in stratum number two (3001 to

\(^2\)R. R. Johnson, *Elementary Statistics* (Belmont, California:

\(^3\)H. Arkin and R. R. Colton, *Tables for Statisticians* (New
12000), 19 (41.3%) were received from 46; in stratum number three (over 12001), 5 (20.8%) were received from 24 mailed questionnaires. The average enrollment of colleges in stratum one was 1279 students; 5050 in stratum two; and 19,333 in stratum three.

When the proportionality of the strata was considered, a rather high degree of proportional conformity was observed. Of the total 200 questionnaires mailed, 65 percent were from stratum one, 23 percent from stratum two, and 12 percent from stratum three. Of the questionnaires received, 65.2 percent were from stratum one, 27.5 percent from stratum two, and 7.3 percent from stratum three. Taken together, the proportional arrangements of the responding colleges, within enrollment strata, represented a total additive deviation from the mailed questionnaires of less than 10 percent [(65.22 - 65 = .22 plus 27.5 - 23 = 4.5 plus 12 - 7.3 = 4.7) = 9.42 percent] total deviation across strata.

The third and perhaps most important criterion to be met for attaining generalizability, concerned the extent to which the data obtained—with the 34.5 percent return for presidents (n = 69) and the 25.3 percent return for cabinet members (n = 152)—approximated population parameters. That is, how much confidence existed that the obtained scores for the experimental variables approximated those of the sample population and hence, the total population?

Because a random probability sample was used, it might be reasonably expected that the obtained mean scores would deviate somewhat more than if all of the 1188 population colleges had been investigated. (One reason for sampling is to be able to make a fairly reliable
estimate of a population without having to record observations from the total population, e.g., public opinion polls). The question then becomes: within what commonly acceptable level of confidence and within what error limits are the obtained results—with a given sample size—an estimate of the population?

To answer this question, the "maximum error of estimate" (E), as described by Johnson, was applied to mean scores of the major experimental variables for both presidents and cabinet officers. The basic formula for estimating maximum error is:

\[ E = \left( z(\alpha/2) \right) \left( \frac{\sigma}{\sqrt{n}} \right) \]

where \( z(\alpha/2) = 1.96 \), the z score value in a normal probability table at the .05 level of confidence with two tails,

\[ \frac{\sigma}{\sqrt{n}} \]

the standard error of the mean.

Using this formula, maximum error estimates for means were computed for presidents and their cabinets for the variables of LPC, years in position, perceived effectiveness of president, group atmosphere, task structure, and position power. The results of these computations are presented in TABLE 3:

As indicated by the table, twelve out of fourteen of the error estimates deviated less than two points from the estimated population means, with a 95 percent confidence. The two error estimates for LPC

\(^4\)op. cit., p. 213.
TABLE 3

MAXIMUM ERROR ESTIMATES OF EXPERIMENTAL VARIABLES FOR PRESIDENTS AND CABINETS

<table>
<thead>
<tr>
<th>Variable</th>
<th>Presidents (n = 69)</th>
<th>Cabinets (n = 152)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>1.71</td>
<td>1.29</td>
</tr>
<tr>
<td>LPC</td>
<td>5.44</td>
<td>3.25</td>
</tr>
<tr>
<td>Years, Position</td>
<td>1.44</td>
<td>.72</td>
</tr>
<tr>
<td>Effectiveness</td>
<td>1.07</td>
<td>1.07</td>
</tr>
<tr>
<td>Group Atmosphere</td>
<td>1.58</td>
<td>1.71</td>
</tr>
<tr>
<td>Task Structure</td>
<td>.71</td>
<td>.51</td>
</tr>
<tr>
<td>Position Power</td>
<td>.54</td>
<td>1.69</td>
</tr>
</tbody>
</table>

which deviated 5.44 and 3.25 points respectively for presidents and cabinet officers, may reflect an inherent weakness of the LPC scale. Specifically, it has been suggested that the LPC scale may not have very high test-retest reliability.\(^5\)

If low reliability does exist, the larger error estimates for LPC would be a reflection of the wide variability in LPC scores in comparison to the other experimental variables. For example, the LPC standard deviation was only 6.72. More to the point, if a person scores "high" in LPC at one point in time and later shifts to a "low" score (as found in some instances investigated by Stinson and Tracy\(^6\)), it would be more difficult to obtain a reliable estimate of this particular population parameter.


\(^6\) Ibid.
It can probably be concluded, in general, that there exists 95 percent confidence that the obtained sample means—based upon the respective standard errors and sample sizes obtained—were fairly reliable estimates of the population means to which the results were generalized. The close correspondence of the enrollment sizes of the returned questionnaires to the original proportionality of the stratified sample also adds strength to this conclusion. This is not to say that some sample bias does not exist since the present study is affected in a manner similar to all questionnaire research which does not obtain nearly a 100 percent return.

The problem of sample or response bias is well summarized by Babbie in discussing the adequacy of different response rates:

... a response rate of at least 50 percent is adequate for analysis and reporting. A response rate of 60 percent is good ... The reader should bear in mind, however, that these are only rough guides, they have no statistical basis, and a demonstrated lack of response bias is far more important than a high response rate.

**Background Information**

From the background data supplied by the presidents, it appears that the average college president in the study is white, male, 54 years of age, and has been in his present position for 7.57 years. Only one of the presidents reported his race as black and three others said they were female. Thirteen or 18.8 percent of the presidents had previously held the academic presidency at another institution which had an average enrollment of 2330.76 students. This previous position was

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held for an average of 1.1 years. Sixteen of the 69 presidents (23.2%) were apparently promoted from within their present institution with the average tenure of all presidents in their present institution being 9.8 years. The size of the average administrative cabinet was six members with a standard deviation of 2.29.

Positions held by the presidents prior to their assumption of their current presidency, indicate the majority came from academic administration as academic deans or vice-presidents (49.1%), followed by faculty ranks (14.5%), business vice-presidents (9.1%), deans other than academic (5.5%), ministers (5.5%), development vice-presidents (3.6%), and 12.7% held a variety of other positions such as superintendents, assistant to the president, naval officer, and director of development.

In general, 87.3 percent of the presidents report to have worked in a college or university—other than as president—immediately prior to assuming their present presidency. This result compares favorably with data reported by Cohen and March who suggest a 90 percent experience rate in higher education administration. They also report other data which compare quite well with the background information obtained for presidents. For example, Cohen and March estimate an average age of 53, an average tenure (in 1970) of 7.3 years, white and male, and that 30 percent of the presidents were promoted from within academic administration.

---

support a high degree of representativeness of the returned questionnaires. As a consequence, the effects of sampling bias appear to have been reduced.

Geographically, questionnaires were received from 27 (56.3%) of the 48 states to which questionnaires were mailed. Of the 131 questionnaires sent to the responding 27 states (or 65.5 percent of the total 200 mailed), the 69 responding presidents represented 52.7 percent of this total. Broken down by geographical distribution, 18.8 percent of the Eastern states received questionnaires, 20.8 percent of the South, 31.3 percent of the Midwest, and 29.2 percent of the West. Of the questionnaires received, 14.8 percent were from the East, 22.2 percent from the South, 44.4 percent from the Midwest, and 18.5 percent from the West. It appears that, geographically, the returned questionnaires are fairly proportional to those mailed.

The final portion of the background information section on the questionnaire, asked presidents and cabinet officers to classify the administrative cabinets as either interacting, coacting, counteracting, or some combination of these. Seven different response categories were available to each respondent: 1) interacting only, 2) coacting only, 3) counteracting only, 4) interacting and coacting, 5) interacting and counteracting, 6) coacting and counteracting, and 7) interacting, coacting, and counteracting.

A total of 35 (50.7%) of the presidents described their cabinet as interacting only; 21 (30.4%) as coacting only; and 13 (18.8%) as interacting and coacting. None of the president described their cabinet as counteracting only or as any of the other combinations.
The cabinet officers were somewhat more diverse in their responses to this item. Fifty-six (37.3%) described the cabinet as interacting only; 51 (33.8%) as coacting only; 2 (1.3%) as counteracting only; 35 (23.3%) as interacting and coacting; 1 (.7%) as interacting and counteracting; 2 (1.3%) as coacting and counteracting; and 3 (2%) as interacting, coacting, and counteracting.

These results, comparing president and cabinet member perceptions of the group classification of their administrative cabinets, are summarized in TABLE 4:

<table>
<thead>
<tr>
<th>Classification</th>
<th>Presidents (n=69)</th>
<th>Cabinets (n=150)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Interacting</td>
<td>50.7</td>
<td>37.3</td>
</tr>
<tr>
<td>2. Coacting</td>
<td>30.4</td>
<td>33.8</td>
</tr>
<tr>
<td>3. Counteracting</td>
<td>1.3</td>
<td>1.3</td>
</tr>
<tr>
<td>4. 1 and 2</td>
<td>18.8</td>
<td>23.3</td>
</tr>
<tr>
<td>5. 1 and 3</td>
<td>7.7</td>
<td>.7</td>
</tr>
<tr>
<td>6. 2 and 3</td>
<td>1.3</td>
<td>1.3</td>
</tr>
<tr>
<td>7. 1, 2, and 3</td>
<td>2.0</td>
<td>2.0</td>
</tr>
</tbody>
</table>

From inspecting the table, it can be observed that all of the presidents and nearly 95 percent of the cabinet members see their cabinets as being either interacting only, coacting only, or interacting and coacting. Both groups tend to agree on the relative rankings of these three classifications, although a greater relative proportion of presidents see their cabinets as interacting than do cabinet members. It is conceivable that presidents, as formal "leaders" of their cabinets,
envision a "team" approach to be their general working style (or the socially desirable style). Cabinet members, on the other hand, might be less likely to see themselves as part of a team and more as a relatively autonomous professional working in a specialty area.

Results of the background information collected from the cabinet members indicate that the average cabinet member is 46 years of age, white and male, and has been in his or her present position for five years. Eleven (7.2%) of the cabinet members are female and none reported their race to be black. Fifteen or 9.8 percent had previously held their current position at another academic institution, which had an average enrollment of 5083.3 students.

Of the cabinet members who had not previously held their present position in another institution, 39 (28.9%) were college faculty members; 22 (16.3%) in business other than education; 21 or 15.6 percent were in university "middle management" (e.g., Director of Alumni Affairs, Director of Public Relations); 13 (9.6%) were academic or student deans; 12 (8.9%) were university comptrollers; 11 (8.1%) in public school administration; 8 (5.9%) were university vice-presidents; 6 (4.4%) were assistants to the president; 2 (1.5%) were ministers; and one cabinet member (.7%) was a former college president.

In general, 99 (73.3%) of the cabinet members who had not previously held their current position, had formerly worked in higher education in an administrative or faculty position. Of all 149 cabinet officers reporting information in this category, 114 or 84.4% had previously been employed in a college or university in a professional capacity.
**Effectiveness Rating Form**

The presidents were asked to rate their own effectiveness as a leader of their administrative cabinets. Three of their cabinet officers were, in turn, asked to rate the president of their cabinet. As discussed in Chapter III, four of the five items dealt with the specific areas of campus planning, budgetary decisions, academic decisions, and fund-raising activities. The fifth item, policy decisions in general, was designed and added to possibly offset any "over-weighting" tendencies which might be used in rating the four other items. Each item was rated on an eight point scale with one representing "Very Effective" and eight, "Relatively Ineffective."

Possible score ranges were from five to 40.

The average presidential self-rating was 15.30 (SD = 4.55) while cabinet members rated presidents with a slightly lower 14.71 (SD = 6.73). To determine if these differences were statistically significant, Fischer's "t" ratio test was computed between the mean scores of the two ratings. The resulting "t" value of .66 was not statistically significant for 218 degrees of freedom. Thus, it appears that presidents' perceptions of their own effectiveness tend to agree, on the average, with perceptions of cabinet members.

To determine if the effectiveness scale possessed internal consistency, it was necessary to observe if one item correlated with another, but not to a very great extent. That is, a "global" measure of effectiveness would require that one item is related or associated with another at a statistically significant level of confidence, but not to the degree that one item accounts for a majority of the variance...
in another. Thus, intercorrelations of the scale items should be relatively low but statistically significant so that inter-item discrimination is reliable.

To test this reasoning, intercorrelation matrices for the five scale items were constructed for both presidents and cabinet officers. To decrease the operation of a "halo effect" between variables, all of the item scores were transformed to "z" scores in order to standardize the scores across raters. The means and standard deviations (SDs) of these transformations for presidents and cabinet officers are presented in TABLE 5:

<table>
<thead>
<tr>
<th>Item</th>
<th>Presidents (n=69)</th>
<th>Cabinets (n=152)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Planning</td>
<td>.15</td>
<td>.79</td>
</tr>
<tr>
<td>Budgeting</td>
<td>-.21</td>
<td>.80</td>
</tr>
<tr>
<td>Academics</td>
<td>.27</td>
<td>.86</td>
</tr>
<tr>
<td>Fund Raising</td>
<td>.27</td>
<td>1.04</td>
</tr>
<tr>
<td>Policy Decisions</td>
<td>-.48</td>
<td>.59</td>
</tr>
</tbody>
</table>

According to the table, presidents rated themselves higher in effectiveness in the areas of budgeting and policy decisions in general. As evidenced by the SDs, both presidents and cabinet officers were relatively homogeneous with respect to their effectiveness ratings of planning, budgeting, academic decisions, and fund-raising—the four specific criteria of effectiveness. A slightly greater variability of
ratings between presidents and cabinet officers is evident from the 
SDs for policy decisions (.59 for presidents versus .70 for cabinets). 
In general, the SDs by themselves appear to indicate that the measures 
of effectiveness possess some internal consistency.

Using Pearson's "r," each of the five scale items was then 
tercorrelated, separately for both presidents and cabinet officers. 
The results of these intercorrelations (using "z" score transforma-
tions of effectiveness) are presented in TABLE 6:

<table>
<thead>
<tr>
<th>TABLE 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITEM INTERCORRELATIONS OF PRESIDENT AND CABINET</td>
</tr>
<tr>
<td>EFFECTIVENESS SCALE RATINGS</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Presidents (n=69)</th>
<th>Cabinets (n=152)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLAN</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>BUDG</td>
<td>-.30&lt;sup&gt;b&lt;/sup&gt; 1.00</td>
<td>-.28&lt;sup&gt;c&lt;/sup&gt; 1.00</td>
</tr>
<tr>
<td>ACAD</td>
<td>-.07 -.32&lt;sup&gt;b&lt;/sup&gt; 1.00</td>
<td>-.16&lt;sup&gt;a&lt;/sup&gt; -.31&lt;sup&gt;c&lt;/sup&gt; 1.00</td>
</tr>
<tr>
<td>FUND</td>
<td>-.40&lt;sup&gt;c&lt;/sup&gt; -.13 -.53&lt;sup&gt;c&lt;/sup&gt; 1.00</td>
<td>-.36&lt;sup&gt;c&lt;/sup&gt; -.17&lt;sup&gt;a&lt;/sup&gt; -.42&lt;sup&gt;c&lt;/sup&gt; 1.00</td>
</tr>
<tr>
<td>POLD</td>
<td>-.13 -.28&lt;sup&gt;a&lt;/sup&gt; -.003 -.27 1.00</td>
<td>-.09 -.36&lt;sup&gt;c&lt;/sup&gt; .02 -.40&lt;sup&gt;c&lt;/sup&gt; 1.00</td>
</tr>
</tbody>
</table>

NOTE: PLAN = Planning, BUDG = Budgeting, ACAD = Academic decisions, FUND = Fund-Raising, POLD = Policy Decisions.

<sup>a</sup><sub>p</sub><.05
<sup>b</sup><sub>p</sub><.01
<sup>c</sup><sub>p</sub><.001

As indicated by the table, five out of ten intercorrelations for 
presidents and eight out of ten intercorrelations for cabinets achieved
acceptable statistical significance. In addition, with the exception of the planning X academic correlation and budgeting X fund-raising correlation, statistical significance was achieved for identical item correlations for both presidents and cabinets.

Since only one of the correlations (cf. ACAD X FUND for presidents) in either group accounts for more than 25 percent of the variance for a specific correlation, it appears that the raters were able to reliably discriminate among the scale items. The achievement of statistical significance indicates that the raters were consistent within items. That is, ratings on one item seem to influence ratings on another, which would be desirable for a "global" measure. However, it must also be noted that because of the greater number of significant correlations for cabinet members, the cabinet ratings were probably more internally consistent than those for presidents.

To determine if inclusion of the item on "policy decisions in general" was able to suppress a tendency to over-emphasize the other scale items, inter-item partial correlation coefficients were computed for presidents and cabinets. All correlations were computed by controlling for ratings on policy decisions in general, using the partial correlation formula described in Chapter III, "Analysis of the Data." If the inter-item correlations do not substantially change when policy decision ratings are held constant, inclusion of this item would appear to have not influenced the inter-item correlations. Results of the partial correlation coefficients for presidents and cabinets are given in TABLE 7:
TABLE 7
ZERO-ORDER AND PARTIAL COEFFICIENTS OF EFFECTIVENESS SCALE ITEMS WITH POLICY DECISIONS HELD CONSTANT

| Items Correlated | Presidents (n=69) | | Cabinets (n=152) |
|------------------|------------------|------------------|
|                  | Zero-Order | Partial | Zero-Order | Partial |
| PLAN x BUDG      | -.30<sup>b</sup> | -.35<sup>b</sup> | -.28<sup>c</sup> | -.32<sup>c</sup> |
| PLAN x ACAD      | -.07       | -.07     | -.16<sup>a</sup> | -.16<sup>a</sup> |
| PLAN x FUND      | -.40<sup>c</sup> | -.46<sup>c</sup> | -.36<sup>c</sup> | -.43<sup>c</sup> |
| BUDG x ACAD      | -.32<sup>b</sup> | -.33<sup>b</sup> | -.31<sup>c</sup> | -.32<sup>c</sup> |
| BUDG x FUND      | -.13       | -.21     | -.17        | -.30<sup>c</sup> |
| ACAD x FUND      | -.53<sup>c</sup> | -.55<sup>c</sup> | -.42<sup>c</sup> | -.45<sup>c</sup> |

<sup>a</sup><sub>p<.05</sub>
<sup>b</sup><sub>p<.01</sub>
<sup>c</sup><sub>p<.001</sub>

It appears, from TABLE 7, that the only inter-item correlation on which policy decision ratings had an effect was that of the correlation between budgeting and fund-raising. Although withholding policy decision ratings seems to have slightly elevated the correlations for the other items (none of which were greater than seven interval points), they were not of the magnitude of the budgeting and fund-raising correlation. For presidents, this coefficient went from -.13 to -.21 and for cabinets from -.17 to -.30. This elevation effect for presidents was not statistically significant for budgeting X fund-raising although it was for cabinets.

Apparently, inclusion of the item on policy decisions did not
appreciably affect correlations between the other items. However, the tendency to over-emphasize the other items may have been attenuated by the conversion of the items to "z" scores. Nevertheless, ratings of policy decisions in general were discriminated and seen as a separate item, being more or less equal in discrimination as the other items. This finding would indicate that policy decisions are viewed as an equal contributor to the global measure of effectiveness.

**Least Preferred Co-Worker Scale (LPC)**

Both presidents and cabinets were asked to complete Fiedler's LPC scale. The maximum possible score range of the scale is 16 to 128. For purposes of testing the hypotheses, only the presidents' LPC scores were used since they are the formal leaders of the cabinets. However, differences in LPC scores between presidents and cabinets could conceivably account for some differences in the results.

For example, it has been suggested\(^9\) that a person's LPC score may account for a large proportion of the variance in their perception of situational favorableness. If such a relationship exists, it would be important to know if this effect involved presidents only, cabinets only, or both groups. Following a presentation of the results for the three situational variables, this relationship will be investigated.

The mean LPC score for presidents was 64.84 (SD = 23.08) and 60.57 (SD = 20.42) for cabinets. Application of Fischer's "t" ratio

\(^9\)J. T. McMahon, op. cit., p. 703.
test indicated that the difference between these two means was not statistically significant ($t = 1.85, df = 215$). This finding is consonant with Fiedler's\textsuperscript{10} suggestion that LPC scores are normally distributed in the general population. Presidential LPC scores ranged from 16 to 110 with a median of 66 and were bi-modal in distribution at 75 and 83.

\textbf{Situational Variables}

Respondents were asked to complete three scales to be used in describing three situational variables of the administrative cabinets. The three scales used were: the Administrative Cabinet Group Atmosphere Scale, Presidential Task Structure Scale and, the Presidential Position Power Scale. Both presidents and cabinets were asked to complete these scales.

\textit{Group Atmosphere.} Possible scores for group atmosphere range from eight to 80. The average presidential rating was 67.55 ($SD = 6.72$) and the average cabinet rating was 61.15 ($SD = 10.73$). From this data alone, it appears that the cabinet descriptions are somewhat more dispersed as evident from a comparison of the two SDs.

A "t" test confirmed the statistical significance of the difference between the two mean scores ($t = 4.71, df = 219, p < .01$). To test for the homogeneity of the variances in the two groups, an F ratio was computed and found significant at the .05 level ($F = 2.02, df = 151,68$). Because the variances do not appear to be similar, the Cochran

\textsuperscript{10}F. E. Fiedler, op. cit., 1967.
and Cox test was computed to determine if the "t" ratio value could be interpreted in the conventional manner. Results of this test yielded a smaller "t" value which indicates that a null hypothesis of no difference in perceptions of group atmosphere can be reasonably rejected with 99 percent confidence (Cochran and Cox "t" = 2.63, df = 219, p .01). It appears that presidents, on the average, perceive the atmosphere of their cabinets to be better than do cabinet members.

**Task Structure.** Possible scores for task structure range from four to 32. Presidents described the mean task structure of their cabinets to be 22.17 (SD = 3.03), and cabinets described the task structure with a mean rating of 21.00 (SD = 3.21). A "t" ratio computed between these mean scores indicated that the difference between them was statistically significant at the .05 level of confidence (t = 2.58, df = 219). The F ratio test for homogeneity of the variances was not statistically significant (F = 1.14, df = 151,68). Thus it was not necessary to apply the Cochran and Cox test. It appears that presidents describe their jobs with the cabinet to be somewhat more highly structured than do the cabinet officers when they describe the presidents' jobs.

**Position Power.** Possible score ranges for the variable of position power are 13 to 104 with lower scores being indicative of higher de-

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11 op. cit.
12 While it may be surprising that statistical significance was achieved with such a relatively small difference between the means, it must be remembered that the task structure scale contained only four items. Thus, there conceivably is less room for error variance.
degrees of perceived position power. The mean position power score for presidents was 30.19 (SD = 7.28) and 32.59 (SD = 10.34) for cabinet members. Computation of a "t" ratio between these mean scores revealed that the difference was probably not statistically significant (t = 1.79, df = 218). Based upon this result, it can be reasonably concluded that presidents do not perceive themselves to have more position power than when compared with the cabinets' perceptions of the presidents' position power.

A summary of the descriptive statistics pertaining to the major experimental variables of the study are presented in TABLE 8. Three additions have been made to the data already reported: values for ranges, kurtosis, and skewness of the distributions. Information on these variables should further enhance a description of the sampled groups of presidents and cabinet officers.

Because most of the statistics in this table have been previously discussed, the statistics for kurtosis and skewness probably deserve special attention. For both of these statistics, a value of zero can be assumed to indicate a symmetrical normal distribution.

It appears, that for presidents, the variable distributions for LPC and GA are only slightly leptokurtic (peaked) in shape, while the distribution for PP is slightly platykurtic (flat), being quite close in shape to a normal distribution. The distributions for YRS, EFF, and TS, on the other hand, seems to deviate slightly more in peakedness. However, this deviation does not appear to be so extreme as to affect the interpretation of results from parametric statistics.
### TABLE 8
SUMMARY OF DESCRIPTIVE STATISTICS FOR PRESIDENTS AND CABINET OFFICERS

<table>
<thead>
<tr>
<th>Statistic</th>
<th>YRS</th>
<th>EFF</th>
<th>LPC</th>
<th>GA</th>
<th>TS</th>
<th>PP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presidents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>7.57</td>
<td>15.30</td>
<td>64.84</td>
<td>67.55</td>
<td>22.17</td>
<td>30.19</td>
</tr>
<tr>
<td>SD</td>
<td>6.12</td>
<td>4.55</td>
<td>23.08</td>
<td>6.72</td>
<td>3.03</td>
<td>7.28</td>
</tr>
<tr>
<td>Range</td>
<td>27.00</td>
<td>30.00</td>
<td>94.00</td>
<td>35.00</td>
<td>16.00</td>
<td>33.00</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>2.17</td>
<td>3.55</td>
<td>.72</td>
<td>.96</td>
<td>1.71</td>
<td>-.06</td>
</tr>
<tr>
<td>Skewness</td>
<td>1.57</td>
<td>1.01</td>
<td>-.63</td>
<td>-.51</td>
<td>1.04</td>
<td>.43</td>
</tr>
<tr>
<td>Cabinets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>5.02</td>
<td>14.71</td>
<td>60.57</td>
<td>61.15</td>
<td>21.00</td>
<td>32.59</td>
</tr>
<tr>
<td>SD</td>
<td>4.53</td>
<td>6.73</td>
<td>20.42</td>
<td>10.73</td>
<td>3.21</td>
<td>10.34</td>
</tr>
<tr>
<td>Range</td>
<td>21.00</td>
<td>35.00</td>
<td>98.00</td>
<td>52.00</td>
<td>17.00</td>
<td>57.00</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>2.63</td>
<td>.98</td>
<td>.69</td>
<td>.52</td>
<td>-.16</td>
<td>1.51</td>
</tr>
<tr>
<td>Skewness</td>
<td>1.68</td>
<td>1.09</td>
<td>-.11</td>
<td>-.89</td>
<td>-.32</td>
<td>.91</td>
</tr>
</tbody>
</table>

**NOTE**: YRS = Years in present position, EFF = Effectiveness of president, LPC = Least Preferred Co-worker scale, GA = Group Atmosphere, TS = Task Structure, PP = Position Power.

With the exception of years in position, the variable distributions for presidents appear to slightly favor high score values. That is, the slight negative skewness for these distributions indicate that they are slightly asymmetrical. (For this analysis, distributions for EFF and PP can be considered to be slightly negatively skewed since a lower score indicates a higher degree of the variable being rated.)
However, none of these distributions appear to be extremely skewed. Positive skewness for YRS indicates that slightly more presidents exceed the mean tenure than those who fall below it.

Kurtosis of the cabinet variable distributions was roughly similar to that of the presidents. With the exception of task structure, all of the cabinet distributions show a slightly leptokurtic tendency. Direction of skewness for the cabinet distributions was identical to that found for presidents. Thus, the variable distributions for cabinets were also slightly asymmetrical with higher scores falling above the means.

The ranges for presidents and cabinets were roughly similar for the variables of YRS, EFF, LPC, and TS. However, there exists a 17 point difference for GA and a 24 point difference for PP. As might be expected, these differences were also reflected in the standard deviations for these two variables, indicating that cabinet perceptions for GA and PP were somewhat more dispersed than those of the presidents.

**Inter-Relatedness of Contingency Model Variables**

As previously mentioned, it has been suggested that a particular LPC score may affect perception of situational variables. For example, both McMahon and Ashour\(^\text{13}\) propose that a large proportion of the variance in Group Atmosphere may be accounted for by LPC scores.

To determine if LPC and other Contingency Model Variables do inter-relate, intercorrelation matrices for presidents and cabinet

\(^{13}\)J. T. McMahon, op. cit., p. 703; A. S. Ashour, op. cit., p. 346.
officers were constructed using the variables of LPC, Group Atmosphere, Task Structure, Position Power, and Effectiveness. Results of these intercorrelations are presented in TABLE 9:

**TABLE 9**

INTERCORRELATIONS OF PRESIDENT AND CABINET PERCEPTIONS OF CONTINGENCY MODEL VARIABLES

<table>
<thead>
<tr>
<th>Variable</th>
<th>Presidents (n=69)</th>
<th>Cabinets (n=152)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LPC</td>
<td>GA</td>
</tr>
<tr>
<td>LPC</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>GA</td>
<td>.09</td>
<td>1.00</td>
</tr>
<tr>
<td>TS</td>
<td>-.17</td>
<td>-.04</td>
</tr>
<tr>
<td>PP</td>
<td>.12</td>
<td>-.18</td>
</tr>
<tr>
<td>EFF</td>
<td>.20</td>
<td>-.07</td>
</tr>
</tbody>
</table>


\[ a_p < .001 \]

According to the intercorrelations presented in this table, cabinet perceptions of one variable were more likely to influence perceptions of another variable to a greater extent than was the case with presidents. The only significant correlation for presidents was that between task structure and perceptions of their own effectiveness. Apparently, the more structured presidents see their job, the higher they rate themselves in effectiveness.

The situation was quite different with cabinet members where all of the situational variables intercorrelate at a statistically significant level. Most prominent was the correlation between group atmos-
phere and effectiveness where 29 percent ($-.54^2$) of the variance in effectiveness was accounted for by cabinet perceptions of group atmosphere. Intuitively, this finding seems logical if the cabinet members are more likely to view the president as effective if they perceive themselves to be part of a group with good interpersonal relations.

The lack of a significant correlation on these variables using president perceptions is more difficult to explain. It may be that because they view themselves as the "leader" of the cabinet, they see themselves as more responsible for their own effectiveness which would thus be unrelated to how they view the general atmosphere of the group.

Nevertheless, in no instance, for either presidents or cabinet members, was there a significant correlation between LPC and any of the three situational variables or the dependent variable of effectiveness. The correlations were also relatively small with the largest ($-.17$ for task structure perceived by presidents) accounting for only three percent of the variance in task structure.

To further test the effect of LPC upon perceptions of the other variables, partial correlation coefficients were computed with LPC held constant. Results of these computations are presented in TABLE 10. If LPC does not influence the other variables, there should be little change in magnitude between the zero-order and partial correlation coefficients.

As might be expected from the low intercorrelations between LPC and the situational variables found in TABLE 9, partialing out LPC had no appreciable effect upon the intercorrelations of the variables. The greatest change was for presidents with the correlation
TABLE 10
ZERO-ORDER AND PARTIAL COEFFICIENTS OF CONTINGENCY MODEL VARIABLES WITH LPC HELD CONSTANT

| Items Correlated | Presidents (n=69) | | | Cabinets (n=152) |
|-----------------|------------------|------------------|------------------|
|                 | Zero-Order | Partial | Zero-Order | Partial |
| GA x TS         | -.04 | -.03  | .36^b | .36^b |
| GA x PP         | -.18 | -.19  | -.33^b | -.33^b |
| TS x PP         | -.08 | -.06  | -.32^b | -.32^b |
| EFF x GA        | -.07 | -.10  | -.54^b | -.54^b |
| EFF x TS        | -.38^b | -.36^a | -.45^b | -.46^b |
| EFF x PP        | .19  | .17   | .38^b | .37^b |

^a p<.01

^b p<.001

between effectiveness and group atmosphere which increased three points. However, neither coefficient was statistically significant. Apparently, the attitude a person has toward his LPC does not influence his perception of situational variables.

Situational Favorableness

In order to test the hypotheses of the study, it was necessary to determine cut-off points for dichotomizing the three situational variables. Because presidents and cabinets were found to significantly differ in their mean evaluations of two of the three situational variables, cut-off points were established separately for both groups on all three variables.
Ideally, the cut-off points should be based upon normative data. The only variable for which such data exists is that of group atmosphere with a cut-off point of 65. Thus, for both presidents and cabinets, good leader-member relations were defined as scores of 65 or greater and poor leader-member relations as scores of 64 or below. The dichotomization of the other variables was accomplished by the use of two methods: the mean of a variable for a group and the median split of a variable for a group. Using this latter procedure, it was possible to determine if situational cut-off levels make a difference in predicting effectiveness from different leadership styles.

Results of this procedure indicate that, for presidents, high task structure would be defined as scores ≥ 22 for mean cut-offs and ≥ 18 for median cut-offs; high position power would be defined as scores ≤ 30 for mean cut-offs and ≤ 59 for median cut-offs. Cabinet descriptions of high task structure would be defined as scores ≥ 21 for mean cut-offs and ≥ 18 for median cut-offs; for high position power, ≤ 33 for mean cut-offs and ≤ 59 for median cut-offs. (In all cases, the median was selected by listing all of the scores in a distribution and choosing the one score above which and below which 50 percent of the scores fell.) It was evident that each octant or description of situational favorableness would be described in four different ways using the mean and median cut-offs of both presidents and cabinet officers.

\[14\] Situational favorableness descriptions of cabinet members were based upon the mean number of cabinet officers responding for each cabinet.
For purposes of hypothesis analysis, the presidential LPC scores were trichotomized to define the score ranges for intermediate LPCs. In testing the hypotheses with correlation coefficients, computations were performed using all three levels combined and with intermediate LPCs separately. For the analysis of variance tests, the "high" and "low" dichotomy used to test the hypotheses with correlational analysis was not used, since this dichotomy was based upon positive and negative coefficients. Instead, for analysis of variance, it was necessary to define the "high" and "low" LPC levels. This was accomplished by using the median split method of dichotomizing LPC scores which was 66 for the analysis of variance tests. For both the correlational tests and the analysis of variance tests, intermediate LPCs were defined as those scores ranging from 57 to 77.

The dependent variable of perceived presidential effectiveness was analyzed from the perspective of both presidents and cabinets. While their mean ratings on this variable were not significantly different, it was felt that separate analyses for the situational variables required separate analyses for effectiveness.

In summary, the hypotheses were tested using different combinations of LPC level and situational favorableness. The four different combinations of LPC and situational favorableness used to test the hypotheses were: 1) high, low, and intermediate LPCs with mean situational cut-offs, 2) high, low, and intermediate LPCs with median situational cut-offs, 3) intermediate LPCs with mean situational cut-offs, and 4) intermediate LPCs with median situational cut-offs.
Testing of the Hypotheses

As discussed in Chapter III, two methods were used to test the hypotheses involving predictions of effectiveness for different levels of LPC. The first method tested the methodology of the original model by correlating LPC scores with effectiveness ratings in the different octant conditions. As a result of investigative studies by Shiflett, both Pearson "$r$" and Spearman "$p$" coefficients have been computed. To conform with the original model, positive coefficients should be found in favorable and unfavorable situations and negative coefficients should be found in moderately favorable situations. The second method required that the relationships between LPC and effectiveness be tested for possible interaction effects. For this method, factorial analyses of variance have been employed. Significant interaction effects should be found for LPC X Favorableness interactions in general, LPC effects for high and low LPCs, and a lack of a significant effect for Favorableness when the intermediate LPCs are tested.

Because tests of six of the eight hypotheses are based upon perceptions of presidents and cabinets that were presented separately, results of the other two hypotheses (which involve the combined perceptions of presidents and cabinets) will be presented first. These two hypotheses (numbers four and five in sequence as presented in Chapter II) involve president and cabinet descriptions of situational favorableness. As a result, the other six hypotheses were built upon these descriptions. Thus, it would seem logical to present them out

15 op. cit.
of sequence.

The fourth hypothesis predicted that both presidents and cabinets would describe the cabinet as being favorable or moderately favorable. The fifth hypothesis predicted that presidents and cabinets would not describe the cabinet as unfavorable. Results indicate that, using mean cut-offs, 92.4 percent of the presidents and 73 percent of the cabinets described the cabinet as either favorable or moderately favorable. Only 7.6 percent of the presidents but 27 percent of the cabinets described the cabinets as unfavorable.

More specifically, 53 percent of the presidents described the cabinets as favorable; 39.4 percent as moderately favorable; and 7.6 percent as unfavorable. In contrast, 27 percent of the cabinets described the cabinets as favorable; 46 percent as moderately favorable; and 27 percent as unfavorable. Application of a Chi Square test of independence indicated that these differences are statistically significant with a 99 percent confidence that they do not occur by chance ($\chi^2 = 12.97, df = 2, p < .01$). It can be concluded that hypothesis four is confirmed using mean cut-offs (even though the unfavorable situation was described) but that hypothesis five is not confirmed. However, hypothesis five receives more support with president rather than cabinet perceptions.

When median situational cut-offs are used to describe the octants, neither presidents nor cabinets described the cabinets as unfavorable. Of the presidents, 59.1 percent described the cabinets as favorable and 40.9 percent described them as moderately favorable. For cabinet members, 30.6 percent described the cabinets as favorable
and 69.4 percent described them as moderately favorable. A computed
Chi Square indicated that these differences were also statistically
significant ($S^2 = 10.43$, df = 1, p < .01). This significance indicated
a difference not due to chance between favorableness conditions and/or
between presidents and cabinets. The exact location is not important
since neither group described the cabinets as being unfavorable. Thus,
when median cut-offs were used, hypotheses four and five were clearly
confirmed for both presidents and cabinets.

Results of testing the other six hypotheses will be presented
separately, first for presidential perceptions of situational favor-
ableness and effectiveness and then for the perceptions of the cabinet
members.

Presidential Perceptions Using Correlational Analyses. The first
hypothesis of the study predicted that high LPC presidents will be
more effective in moderately favorable situations than low LPC presi-
dents. Presidential perceptions using mean situational cut-offs and
all LPCs combined resulted in Pearson and Spearman coefficients in the
predicted direction for Octant IV, a moderately favorable situation.
Coefficients in Octants V and VI were not in the predicted direction.
When the median cut-offs were used, only Octant V is described for
moderately favorable situations and neither coefficient is in the pre-
dicted direction.

The second hypothesis predicted that low LPC presidents will
be more effective in favorable situations than will be high LPC presi-
dents. Using mean cut-offs, Pearson and Spearman coefficients were in
the predicted direction for Octants I and II but not for Octant III. Using median cut-offs for the situation, coefficients were in the predicted direction in Octant I and in Octant III for the Spearman coefficient only. No Octant II descriptions were made by the presidents using median cut-offs.

The third hypothesis predicted that intermediate LPC presidents would be equally as likely to be effective in favorable or moderately favorable situations. Because the original Contingency Model did not predict for intermediate LPCs, coefficients should be either all positive or all negative. Results for mean situational cut-offs for intermediate LPC presidents indicated that negative coefficients are found in Octant II and Octant V for Spearman, positive in Octant V for Pearson, and positive for both coefficients in Octant VI. For median situational cut-offs, negative coefficients were found in the two octants described (I and V).

A summary of these results for presidential perceptions is presented in TABLE 11.

Of the total 18 coefficients in TABLE 11 for which predictions were made, nine or 50 percent were in the predicted direction. Of the 10 coefficients in favorable situations (Octants I, II, and III), seven or 70 percent were in the predicted direction. Only two (25%) of the eight coefficients in the moderately favorable situations (Octants IV, V, and VI) were in the predicted direction. It appears that for presidential perceptions of situational favorableness, the Contingency Model predicts considerably better for favorable than moderately favorable situations. In addition, the use of mean or
TABLE 11
COEFFICIENTS FOR MEAN AND MEDIAN PRESIDENTIAL CUT-OFFS OF OCTANT CONDITIONS

<table>
<thead>
<tr>
<th>Situational Cut-Off</th>
<th>All LPCs Combined</th>
<th>Intermediate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I</td>
<td>II</td>
</tr>
<tr>
<td>Mean</td>
<td>r</td>
<td>p</td>
</tr>
<tr>
<td></td>
<td>.10</td>
<td>.17</td>
</tr>
<tr>
<td></td>
<td>.26</td>
<td>-.08</td>
</tr>
<tr>
<td></td>
<td>-.33</td>
<td>.33</td>
</tr>
<tr>
<td></td>
<td>.60a</td>
<td>.60b</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

|                      | r    | p    | n    | r    | p    | n    | r   | p   | n    |
| Median              | .09  | .17  | 35   | .31  | .25  | 4    |     |     |      |
|                     | .34  | .42a | 25   | -.37 | -.41 | .8   |     |     |      |
|                     |      |      |      |      |      |      |     |     |      |

NOTE: Circled coefficients indicate the coefficient was in the predicted direction, except for the Intermediate LPCs where no predictions were made. (r = Pearson, p = Spearman, n = number of cases.)

\[ a_p < .05 \]
\[ b_p < .01 \]

median cut-offs does not appear to make a difference since 50 percent of the coefficients with both cut-offs were in the predicted direction. However, it must be noted that none of the circled coefficients are statistically significant.

For the intermediate LPCs, hypothesis three appears to have received some support in Octants I, II, and V for both cut-offs since five out of these six coefficients were of the same sign (negative). However, positive coefficients were found for the mean cut-offs with the Pearson coefficient in Octant V and both coefficients in Octant VI. Only the Pearson coefficient in Octant II reached statistical significance.
In general, it appears that hypothesis one received confirmation only in Octant IV, hypothesis two was confirmed for Octants I and II but not III, and hypothesis three was marginally confirmed.

Hypotheses six, seven, and eight involve predictions of effectiveness for experienced and inexperienced presidents in different octant conditions. The first step involved in analyzing these hypotheses, according to McNamara's methodology, required that presidential years of experience in their present positions be correlated with president and cabinet ratings of presidential effectiveness. Using Pearson's "r," president ratings of effectiveness correlated with years of experience \(-.003\ (n = 69, \text{n.s.})\) and cabinet ratings correlated \(.03\ (n = 152, \text{n.s.})\). It is evident that number of years in the current presidency has little relationship to either presidential or cabinet perceptions of effectiveness.

The presidents were then divided into groups of those with four or more years of experience in their present position (experienced) and into those with three or fewer years (inexperienced). According to Fiedler, positive coefficients should be found for experienced presidents and negative coefficients for inexperienced presidents (taking into account the direction of the effectiveness scale used in the study). Furthermore, experienced presidents should be found in favorable situations while inexperienced presidents should be in moderately favorable situations.

\begin{itemize}
\item \textsuperscript{16} op. cit.
\item \textsuperscript{17} op. cit., 1972, p. 459.
\end{itemize}
To test this latter notion, experienced and inexperienced presidents were grouped according to perceived situational cut-offs (mean and median) to determine the favorableness conditions they described. Results of these groupings are presented in TABLE 12:

**TABLE 12**

<table>
<thead>
<tr>
<th></th>
<th>Mean Cut-Offs</th>
<th>Median Cut-Offs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experienced</td>
<td>31</td>
<td>19</td>
</tr>
<tr>
<td>Inexperienced</td>
<td>5</td>
<td>7</td>
</tr>
</tbody>
</table>

As indicated, with mean cut-offs 31 (58.5%) of the 53 experienced presidents described their situations as favorable, 19 (35.8%) as moderately favorable, and 3 (5.7%) as unfavorable. Of the 14 inexperienced presidents, 5 (35.7%) described their situation as favorable, 7 (50%) as moderately favorable, and 2 (14.3%) as unfavorable.

Using median cut-offs, 34 (64.2%) of 53 experienced presidents described their situation as favorable, 17 (32.1%) as moderately favorable, and 2 (3.8%) as unfavorable. Of the inexperienced presidents, 5 (35.7%) described their situation as favorable, 8 (57.14%) as moderately favorable, and 2 (14.8%) as unfavorable.

To determine the statistical significance of these groupings, Chi Square analysis was applied to the data for the mean and median cut-offs of situational favorableness. Results indicated that the
groupings of experienced and inexperienced presidents reported in TABLE 12, were not statistically significant, although marginal significance was achieved for the median cut-offs (Mean Cut-Offs: $\chi^2 = 1.67, df = 2, p < .20$; Median Cut-Offs: $\chi^2 = 3.41, df = 2, p < .10$).

Taken together, these results seem to indicate that experienced and inexperienced presidents do not statistically differ in their perceptions. However, a 2 X 2 contingency table test for Chi Square does not reveal the location of the significant differences, or the insignificant differences. It only says that significance or nonsignificance exists.

By inspecting the groupings of the data, a greater number of experienced presidents empirically seemed to describe their situation as favorable (for both mean and median cut-offs) as predicted by Fiedler.\(^{18}\) Similarly, more inexperienced presidents appeared to describe their situation as moderately favorable than the other favorableness conditions as predicted. However, this difference appears to be much less for the inexperienced presidents than for the experienced presidents, with both cut-offs.

To determine if the predictions hold for experienced but not inexperienced presidents, a "1 X N" Chi Square goodness of fit test\(^{19}\) was performed for both groups of presidents for mean and median cut-offs. Results of these tests indicated that significantly more experienced presidents

\(^{18}\) op. cit., 1972, p. 111.

\(^{19}\) C. Robson, op. cit., p. 102. It should be noted that none of the inexperienced presidents had previously held the academic presidency. Had this been the case, this contradictory finding for inexperienced presidents could have possibly been explained, based upon prior experience in the presidency.
presidents described their situation as favorable than the other two conditions, for both mean and median cut-offs ($X^2 = 22.34$, $df = 2$, $p < .001$ and $X^2 = 29.02$, $df = 2$, $p < .001$, respectively). Thus, it appears that Fiedler's prediction holds for experienced but not for inexperienced presidents where a smaller number of cases were found in the conditions contrary to prediction. However, since only 14 of the presidents were defined as inexperienced, caution must be used with this interpretation. In addition, had a lower cut-off point been used to define inexperienced presidents, predicted results may have been obtained since this would have increased the number of presidents defined as inexperienced.

In general, these results indicate that Fiedler's interpretation of McNamara's methodology can be used to test hypotheses six, seven, and eight if the above caveats are considered. Furthermore, the situations not predicted by Fiedler can also be tested. Specifically, Fiedler proposes that situations will not be favorable for inexperienced presidents. Since such a situation exists in the present study, this relationship could be tested. Following Contingency Model predictions, positive coefficients should be found in favorable situations and negative coefficients in moderately favorable situations for the hypotheses involving the effects of experience.

Hypothesis six predicted that in favorable situations, experienced, low LPC presidents would be rated more effective than experienced high LPC presidents. In favorable situations, using mean situational cut-offs, the hypothesis was not confirmed for experienced presidents with the Pearson coefficient. However, the coefficients
for inexperienced presidents were in the predicted direction for both coefficients. When median situational cut-offs were used, all three computed coefficients were in the predicted direction for both experienced and inexperienced presidents.

The seventh hypothesis predicted that in moderately favorable situations, high LPC experienced and inexperienced presidents would be rated more effective than experienced and inexperienced low LPC presidents. Using both mean and median cut-offs, none of the coefficients were in the predicted direction.

Hypothesis eight predicted that there would be no difference in effectiveness for experienced and inexperienced intermediate LPC presidents in either favorable or moderately favorable situations. That is, positive and negative coefficients would be equally likely to occur in either situation. In favorable situations, using mean cut-offs, a negative coefficient (Pearson) and a positive coefficient (Spearman) were found for experienced presidents. In the moderately favorable situation, both coefficients were positive. Because of the small number of inexperienced, intermediate LPC presidents (n = 6), no coefficients were computed for this group. When median cut-offs were used, negative coefficients were obtained for experienced presidents in the favorable situation. For experienced presidents in the moderately favorable situation, positive coefficients were obtained.

A summary of the obtained coefficients used in testing hypotheses six, seven, and eight is presented in TABLE 13. As noted, no coefficients were computed for the inexperienced, intermediate LPC presidents. The coefficients are presented for all LPC presidents.
combined and for intermediate LPCs alone using both mean and median situational cut-offs.

TABLE 13
COEFFICIENTS FOR MEAN AND MEDIAN PRESIDENTIAL CUT-OFFS
OF FAVORABLENESS CONDITIONS FOR EXPERIENCED
AND INEXPERIENCED PRESIDENTS

<table>
<thead>
<tr>
<th>Situational Cut-Off</th>
<th>All LPCs Combined</th>
<th>Intermediate LPCs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Favorable</td>
</tr>
<tr>
<td>Mean</td>
<td>r -.12</td>
<td>.44</td>
</tr>
<tr>
<td></td>
<td>p --</td>
<td>.10</td>
</tr>
<tr>
<td></td>
<td>n 31</td>
<td>5</td>
</tr>
<tr>
<td>Median</td>
<td>r .08</td>
<td>.44</td>
</tr>
<tr>
<td></td>
<td>p --</td>
<td>.10</td>
</tr>
<tr>
<td></td>
<td>n 32</td>
<td>5</td>
</tr>
</tbody>
</table>

NOTE: Circled coefficients indicate the coefficient was in the predicted direction except for intermediate LPCs where no directional predictions were made. (\( r = \) Pearson, \( p = \) Spearman)

Of the 14 coefficients for which predictions were made, five or 35.7 percent were in the direction predicted by the Contingency Model, although only one (\( r = .08 \)) was in the direction predicted by the hypotheses. Of the six coefficients in favorable situations, five (83.3%) were in the predicted direction. Of the eight coefficients in moderately favorable situations, none were in the predicted direction.
In summary, it appears that hypotheses six, seven, and eight were not confirmed for presidential perceptions using correlational analysis with mean and median situational cut-offs. Hypothesis six was partially confirmed due to the positive coefficient \( r = .08 \) for experienced presidents using median situational cut-offs. However, because of the coefficient's small size and lack of statistical significance, the hypothesis cannot be considered to have been supported. Hypothesis seven lacks support since none of the coefficients were in the predicted direction. Finally, hypothesis eight failed to be confirmed because different sign values for the computed coefficients—approximately half being negative and half positive—were found.

Presidential Perceptions Using Analysis of Variance. Using presidential perceptions of situational favorableness and effectiveness ratings, unweighted means analysis for unequal n factorial designs of ANOVA were also used to test the hypotheses. As done with the correlational analyses, analysis of variance tests were computed using different LPC and situational cut-offs. However, instead of testing intermediate LPCs separately, they were included in the natural factorial design provided by the analysis of variance technique. In addition, the hypotheses for high and low LPCs were tested by dichotomizing the LPC distribution into high LPCs (at the median of 66 or higher) and low LPCs (65 or below). This procedure permitted testing of the hypotheses using intermediate LPCs and the more conventional breakdown of high and low LPC.

As a result of this methodology, four ANOVA's (using president perceptions) were computed: 1) mean situational cut-offs with
high, low, and intermediate LPC levels, 2) mean situational cut-offs with high and low LPC levels, 3) median situational cut-offs with the three LPC levels, and 4) median situational cut-offs with the two LPC levels of high and low only. Based upon these cut-offs, four more ANOVA's were calculated for experienced presidents. (Recall that only 14 presidents were classified as inexperienced, thus excluding them from the ANOVA analysis.) Thus, a total of eight ANOVA's were computed using presidential perceptions.

Before reporting the results of the different ANOVA's, the cell means for presidential perceptions of effectiveness will be given in order that the data can be used in interpreting the ANOVA's. These data are presented in TABLE 14.

Results of the ANOVA's for the eight different blocks presented in TABLE 14 indicated if a statistically significant difference existed between the different means for each block and if interaction effects were present. An analysis of variance table was presented for each block and the results were related to the appropriate hypothesis of the study. It should be noted that when unweighted means analysis is used, a total sum of squares is not used since row, column and error variance do not add up to the total sum of squares.

The first ANOVA was computed for mean situational cut-offs across three levels of LPC (Block I). Results of this test are presented in TABLE 15. Although low LPC presidents rated themselves as

---

### Table 14

Mean Effectiveness Scores of Presidential Ratings with Different Situational and LPC Cut-Offs

<table>
<thead>
<tr>
<th>Situational Cut-Offs</th>
<th>All Presidents</th>
<th>Experienced Presidents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>I.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>15.21</td>
<td>13.33</td>
</tr>
<tr>
<td></td>
<td>(n=14)</td>
<td>(n=12)</td>
</tr>
<tr>
<td>MF</td>
<td>16.80</td>
<td>14.67</td>
</tr>
<tr>
<td></td>
<td>(n=5)</td>
<td>(n=9)</td>
</tr>
<tr>
<td>II.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>14.89</td>
<td>13.88</td>
</tr>
<tr>
<td></td>
<td>(n=19)</td>
<td>(n=16)</td>
</tr>
<tr>
<td>MF</td>
<td>15.92</td>
<td>15.43</td>
</tr>
<tr>
<td></td>
<td>(n=12)</td>
<td>(n=14)</td>
</tr>
<tr>
<td>III.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>15.00</td>
<td>13.86</td>
</tr>
<tr>
<td></td>
<td>(n=12)</td>
<td>(n=14)</td>
</tr>
<tr>
<td>MF</td>
<td>19.57</td>
<td>14.00</td>
</tr>
<tr>
<td></td>
<td>(n=7)</td>
<td>(n=7)</td>
</tr>
<tr>
<td>IV.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>14.71</td>
<td>13.89</td>
</tr>
<tr>
<td></td>
<td>(n=17)</td>
<td>(n=18)</td>
</tr>
<tr>
<td>MF</td>
<td>17.43</td>
<td>13.64</td>
</tr>
<tr>
<td></td>
<td>(n=14)</td>
<td>(n=11)</td>
</tr>
</tbody>
</table>

**Note:** F = Favorable situation, MF = Moderately Favorable Situation.

### Table 15

Sources of Variance and F Ratios for Mean Situational Cut-Offs and High, Low, and Intermediate LPC Presidents

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Favorableness (F)</td>
<td>1</td>
<td>22.51</td>
<td>26.51</td>
<td>1.63</td>
</tr>
<tr>
<td>LPC (L)</td>
<td>2</td>
<td>37.62</td>
<td>18.81</td>
<td>1.16</td>
</tr>
<tr>
<td>F x L</td>
<td>2</td>
<td>.27</td>
<td>.14</td>
<td>.01</td>
</tr>
<tr>
<td>Residual</td>
<td>55</td>
<td>894.75</td>
<td>16.27</td>
<td></td>
</tr>
</tbody>
</table>
being more effective than did the high LPC presidents in both favorable and moderately favorable situations (as indicated in Block I of TABLE 14), none of the F ratios were statistically significant. Thus, hypotheses one and two were not confirmed. However, hypothesis three appears to be confirmed since no significant differences existed between intermediate LPCs in either favorable or moderately favorable situations.

The second ANOVA was computed for mean situational cut-offs across two levels of LPC (Block II). Results of this test are presented in TABLE 16:

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Favorableness (F)</td>
<td>1</td>
<td>24.73</td>
<td>24.73</td>
<td>1.53</td>
</tr>
<tr>
<td>LPC (L)</td>
<td>1</td>
<td>8.44</td>
<td>8.44</td>
<td>.52</td>
</tr>
<tr>
<td>F X L</td>
<td>1</td>
<td>.74</td>
<td>.74</td>
<td>.05</td>
</tr>
<tr>
<td>Residual</td>
<td>57</td>
<td>923.89</td>
<td>16.21</td>
<td></td>
</tr>
</tbody>
</table>

In Block II of TABLE 14, low LPC presidents rated themselves to be higher in effectiveness than did the high LPCs in both situational conditions. Because the F ratios in TABLE 16 were not statistically significant, hypotheses one and two were not confirmed using these cut-offs and LPC levels.

For Block III of TABLE 14, an ANOVA was computed using median situational cut-offs across three LPC levels. Results of this test are presented in TABLE 17. The nonsignificant F ratios in TABLE 17
TABLE 17
SOURCES OF VARIANCE AND F RATIOS FOR MEDIAN SITUATIONAL CUT-OFFS AND HIGH, LOW AND INTERMEDIATE LPC PRESIDENTS

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Favorableness (F)</td>
<td>1</td>
<td>62.93</td>
<td>62.93</td>
<td>3.06</td>
</tr>
<tr>
<td>LPC (L)</td>
<td>2</td>
<td>112.95</td>
<td>56.48</td>
<td>2.74</td>
</tr>
<tr>
<td>F x L</td>
<td>2</td>
<td>47.50</td>
<td>23.75</td>
<td>1.15</td>
</tr>
<tr>
<td>Residual</td>
<td>54</td>
<td>1111.97</td>
<td>20.59</td>
<td></td>
</tr>
</tbody>
</table>

indicate the attainment of results identical to those of TABLE 15. Low LPC presidents in both situations rated themselves as more effective than high LPCs. Thus, hypotheses one and two were not confirmed. Because of the insignificant F for favorableness, hypothesis three appears to receive support.

The ANOVA for Block IV of TABLE 14 used median situational cut-offs and two LPC levels. Results of this test are presented in TABLE 18:

TABLE 18
SOURCES OF VARIANCE AND F RATIOS FOR MEDIAN SITUATIONAL CUT-OFFS AND HIGH AND LOW LPC PRESIDENTS

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Favorableness (F)</td>
<td>1</td>
<td>21.95</td>
<td>21.95</td>
<td>1.03</td>
</tr>
<tr>
<td>LPC (L)</td>
<td>1</td>
<td>76.68</td>
<td>76.68</td>
<td>3.61</td>
</tr>
<tr>
<td>F x L</td>
<td>1</td>
<td>31.77</td>
<td>31.77</td>
<td>1.49</td>
</tr>
<tr>
<td>Residual</td>
<td>56</td>
<td>1190.38</td>
<td>21.26</td>
<td></td>
</tr>
</tbody>
</table>

Again, none of the F ratios in TABLE 18 were statistically significant and low LPC presidents rated themselves as more effective in both
favorableness conditions. Therefore, neither hypothesis one nor two were confirmed using the median cut-offs found in Block IV of TABLE 14.

To test hypotheses six, seven, and eight using analysis of variance techniques for presidential perceptions, separate ANOVA's were computed for blocks V, VI, VII, and VIII in TABLE 14. As previously mentioned, only portions of these hypotheses involving experience were tested.

The ANOVA for Block V was computed using mean situational cut-offs with three LPC levels. Results of this computation are presented in TABLE 19:

### TABLE 19
***SOURCES OF VARIANCE AND F RATIOS FOR MEAN SITUATIONAL CUT-OFFS AND HIGH, LOW, AND INTERMEDIATE LPC EXPERIENCED PRESIDENTS***

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Favorableness (F)</td>
<td>1</td>
<td>41.16</td>
<td>41.16</td>
<td>2.45</td>
</tr>
<tr>
<td>LPC (L)</td>
<td>2</td>
<td>38.59</td>
<td>19.30</td>
<td>1.16</td>
</tr>
<tr>
<td>F x L</td>
<td>2</td>
<td>2.17</td>
<td>1.09</td>
<td>.07</td>
</tr>
<tr>
<td>Residual</td>
<td>44</td>
<td>730.06</td>
<td>16.59</td>
<td></td>
</tr>
</tbody>
</table>

None of the F ratios in TABLE 19 were found to be statistically significant. As indicated in Block V of TABLE 14, low LPC presidents rated themselves as more effective than high LPCs in both situations. However, since the F ratios did not achieve significance, hypotheses six and seven were not confirmed. The lack of a significant effect for Favorableness indicates that the hypothesis for intermediate LPCs (number eight) appears to have been confirmed.

For Block VI of TABLE 14, an ANOVA was computed using mean situational cut-offs and two levels of LPC. Results of this ANOVA
are presented in TABLE 20:

### TABLE 20

**SOURCES OF VARIANCE AND F RATIOS FOR MEAN SITUATIONAL CUT-OFFS AND HIGH AND LOW LPC EXPERIENCED PRESIDENTS**

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Favorableness (F)</td>
<td>1</td>
<td>54.63</td>
<td>54.63</td>
<td>3.27</td>
</tr>
<tr>
<td>LPC (L)</td>
<td>1</td>
<td>11.35</td>
<td>11.35</td>
<td>.68</td>
</tr>
<tr>
<td>F x L</td>
<td>1</td>
<td>1.01</td>
<td>1.01</td>
<td>.06</td>
</tr>
<tr>
<td>Residual</td>
<td>46</td>
<td>768.21</td>
<td>16.70</td>
<td></td>
</tr>
</tbody>
</table>

Again, low LPCs rated themselves more effective than high LPCs in both situations. However, because none of the F ratios in TABLE 20 were statistically significant, hypotheses six and seven were not confirmed.

The ANOVA for Block VII of TABLE 14 was computed using median situational cut-offs across three LPC levels. Results of this ANOVA are found in TABLE 21:

### TABLE 21

**SOURCES OF VARIANCE AND F RATIOS FOR MEDIAN SITUATIONAL CUT-OFFS AND HIGH, LOW, AND INTERMEDIATE LPC EXPERIENCED PRESIDENTS**

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Favorableness (F)</td>
<td>1</td>
<td>22.55</td>
<td>22.55</td>
<td>1.34</td>
</tr>
<tr>
<td>LPC (L)</td>
<td>2</td>
<td>43.25</td>
<td>21.63</td>
<td>1.28</td>
</tr>
<tr>
<td>F x L</td>
<td>2</td>
<td>4.32</td>
<td>2.16</td>
<td>.13</td>
</tr>
<tr>
<td>Residual</td>
<td>45</td>
<td>758.65</td>
<td>16.66</td>
<td></td>
</tr>
</tbody>
</table>

While low LPCs again rated themselves more effective in both situations than the high LPCs, none of the F ratios were statistically
significant. Thus, hypotheses six and seven were not confirmed but hypothesis eight did receive confirmation.

In Block VIII of TABLE 14, the last ANOVA for presidents was computed using median situational cut-offs and two levels of LPC. Results of this test are given in TABLE 22:

### TABLE 22

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Favorableness (F)</td>
<td>1</td>
<td>28.59</td>
<td>28.59</td>
<td>1.72</td>
</tr>
<tr>
<td>LPC (L)</td>
<td>1</td>
<td>17.74</td>
<td>17.74</td>
<td>1.06</td>
</tr>
<tr>
<td>F x L</td>
<td>1</td>
<td>6.78</td>
<td>6.78</td>
<td>.41</td>
</tr>
<tr>
<td>Residual</td>
<td>47</td>
<td>782.94</td>
<td>16.66</td>
<td></td>
</tr>
</tbody>
</table>

Following the pattern of the other ANOVA's for presidents, none of the F ratios in TABLE 22 were statistically significant and, as indicated in TABLE 14, low LPCs rated themselves as more effective than high LPCs in both situations. Using Block VIII cut-off points, hypotheses six and seven again failed to be confirmed.

Cabinet Perceptions Using Correlational Analysis. Hypotheses one, two, three, six, seven, and eight were tested in a manner identical to that used for presidential perceptions. First, Pearson and Spearman coefficients were computed across the different octant conditions described by cabinets. These computations were organized to test the first three hypotheses and used mean and median situational cut-offs with all LPCs combined and intermediate LPCs separately. Next, Pearson
and Spearman coefficients were computed for the situations described by cabinets for experienced and inexperienced presidents using both mean and median situational cut-offs. These latter operations were used to test hypotheses six, seven, and eight. Finally, the hypotheses were tested with the eight ANOVA designs utilized for presidential perceptions.

Because a number of cabinet members described the cabinet situation as unfavorable—contrary to hypotheses four and five—effectiveness ratings involving this situation were also analyzed. In these instances, it was assumed that Contingency Model predictions would apply. That is, low LPC presidents would be more effective than high LPC presidents in the unfavorable situation. Furthermore, when presidents are classified according to experience, the experienced low LPC presidents would be more effective than experienced high LPC presidents, but inexperienced high LPC presidents would be more effective than inexperienced low LPC presidents in unfavorable situations.

The first hypothesis predicted higher effectiveness ratings for high LPC presidents than for low LPC presidents in moderately favorable situations. Cabinet perceptions using mean situational cut-offs for all LPCs combined indicated that the hypothesis was confirmed in Octant V for both coefficients. When median situational cut-offs were used, the hypothesis was again confirmed for both coefficients in Octant V.

The second hypothesis predicted higher ratings of presidential effectiveness for low LPCs than for high LPCs in favorable situations. Using mean situational cut-offs for all LPCs combined, the hypothesis received confirmation only for the Spearman coefficient in Octant I,
while the Pearson coefficient in Octant I and both coefficients in Octant III were not in the predicted direction. When median situational cut-offs were used, the hypothesis did not receive confirmation in the only octant described (Octant I) for either coefficient.

The third hypothesis predicted that intermediate LPC presidents would be equally likely to be rated effective in favorable or moderately favorable situations. Results for mean situational cut-offs indicated that negative Pearson and Spearman coefficients were found in Octants I and V and positive coefficients were found in Octant VIII. Using median cut-offs, negative coefficients were found in the two octants described (I and V). It appears that the hypothesis was confirmed for the octants predicted but not for the unfavorable situation of Octant VIII which had coefficients with signs opposite of those obtained for the other situations.

A summary of these results for cabinet member perceptions of situational favorableness and effectiveness is presented in TABLE 23. Of the total 16 coefficients for which predictions were made, six or 37.5 percent were in the predicted direction. Of the six coefficients in favorable situations, one (16.7%) was in the predicted direction. Of the six coefficients in moderately favorable situations, four (66.7%) were in the predicted direction. For the four coefficients found in unfavorable situations, only one (25%) was in the direction predicted by the Contingency Model. Of the intermediate LPCs, 8 or 80 percent of the ten coefficients were negative and none of these were statistically significant. Hypothesis three appears to have been confirmed for favorable and moderately favorable situations but not for the un-
TABLE 23
COEFFICIENTS FOR MEAN AND MEDIAN CABINET MEMBER CUT-OFFS OF OCTANT CONDITIONS

<table>
<thead>
<tr>
<th>Situational Cut-Off</th>
<th>All LPCs Combined</th>
<th>Intermediate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I</td>
<td>III</td>
</tr>
<tr>
<td>Mean</td>
<td>r</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>p</td>
<td>.06</td>
</tr>
<tr>
<td></td>
<td>n</td>
<td>10</td>
</tr>
<tr>
<td>Median</td>
<td>r</td>
<td>-.40</td>
</tr>
<tr>
<td></td>
<td>p</td>
<td>-.33</td>
</tr>
<tr>
<td></td>
<td>n</td>
<td>19</td>
</tr>
</tbody>
</table>

NOTE: Circled coefficients indicate the coefficient was in the predicted direction except for intermediate LPCs where no directional predictions were made. (r = Pearson, p = Spearman).

favorable situation for which no study hypotheses were formulated.

In contrast to presidential perceptions of favorableness, it appears that the Contingency Model predicts better in moderately favorable than favorable situations, but almost equally well for mean or median cut-offs (three versus two coefficients in the predicted directions respectively). However, none of the circled coefficients achieved statistical significance.

Hypotheses six, seven, and eight involved predictions of effectiveness for experienced and inexperienced presidents in different conditions of situational favorableness. Because it has already been noted that cabinet member ratings of presidential effectiveness correlated only .03 with presidential years of experience, it was
appropriate that coefficients testing the hypotheses for experience be presented using cabinet perceptions.

Hypothesis six predicted that in favorable situations, experienced low LPC presidents would be rated more effective than experienced high LPC presidents. Using mean situational cut-offs, the hypothesis was not confirmed for either coefficient. The same result was obtained when median situational cut-offs were used.

Hypothesis seven predicted that in moderately favorable situations, high LPC experienced and inexperienced presidents would be rated as more effective than experienced and inexperienced low LPC presidents. With mean cut-offs the hypothesis was confirmed for experienced presidents with the Pearson coefficient and for inexperienced presidents with both coefficients. Using median cut-offs, the hypothesis was also confirmed in an identical manner as when mean cut-offs were used.

Hypothesis eight predicted that there would be no significant difference in effectiveness for experienced or inexperienced presidents in either favorable or moderately favorable situations. Using mean cut-offs, two (33.3%) out of six coefficients in all three of the favorableness conditions were negative for experienced presidents. Both of these coefficients were Spearman coefficients. No favorableness conditions were described for inexperienced intermediate LPC presidents. Using median cut-offs, all four coefficients were negative for experienced presidents in the favorable and moderately favorable situations described. It appears that hypothesis eight was confirmed using median cut-offs but not mean cut-offs.
A summary of the obtained coefficients used in testing hypotheses six, seven, and eight with cabinet perceptions is presented in TABLE 24:

**TABLE 24**

COEFFICIENTS FOR MEAN AND MEDIAN CABINET CUT-OFFS OF FAVORABLENESS CONDITIONS FOR EXPERIENCED AND INEXPERIENCED PRESIDENTS

<table>
<thead>
<tr>
<th>Situational Cut-Off</th>
<th>All LPCs Combined</th>
<th>Intermediate LPCs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Favorable</td>
<td>Mod.</td>
</tr>
<tr>
<td>r</td>
<td>-.40</td>
<td>-.39</td>
</tr>
<tr>
<td>p</td>
<td>-.29</td>
<td>.07</td>
</tr>
<tr>
<td>n</td>
<td>14</td>
<td>23</td>
</tr>
<tr>
<td>Median</td>
<td>r -.42</td>
<td>-.35a</td>
</tr>
<tr>
<td>p</td>
<td>-.30</td>
<td>--</td>
</tr>
<tr>
<td>n</td>
<td>15</td>
<td>31</td>
</tr>
</tbody>
</table>

*NOTE:* Circled coefficients indicate the coefficient was in the predicted direction except for intermediate LPCs where no directional predictions were made. (r = Pearson, p = Spearman).

a_p < .05

TABLE 24 indicates that six (40%) out of fifteen coefficients for all LPCs combined (for which predictions were made) were in the predicted direction. Of the four coefficients in favorable situations, using both mean and median cut-offs, none were in the predicted direction. In the moderately favorable condition, all of the coefficients were in the predicted direction for inexperienced presidents while two out of three (66.7%) were in the predicted direction for experienced presidents. In the unfavorable situation, none of the coefficients
were in the direction predicted by the Contingency Model. For the intermediate LPC presidents, six (60%) of the ten computed coefficients were negative. Of all the coefficients, only the coefficient for experienced presidents in the moderately favorable situation with median cut-offs attained statistical significance.

From the data in TABLE 24, it appears that hypothesis six was not confirmed but that hypothesis seven was confirmed for inexperienced presidents and marginally confirmed for experienced presidents. Hypothesis eight was not confirmed using mean cut-offs but was confirmed when median cut-offs were used.

Cabinet Perceptions Using Analysis of Variance. The same analysis of variance methodology and design used to test the hypotheses with president perceptions was used with cabinet member perceptions. Unweighted means analysis for unequal cell n's was also used. The major difference in the analysis for cabinets was that cabinet perceptions of unfavorable situations were included where such situations were described.

As done for the analysis of president perceptions, the cell means for cabinet ratings of presidential effectiveness were reported according to the different LPC and situational categories used. These data are given in TABLE 25.

As the case with president perceptions, results of the ANOVA's for the eight different blocks represented in TABLE 25 indicated if a statistically significant difference existed between the different means for each block and if interaction effects were present as pre-
### TABLE 25

**MEAN EFFECTIVENESS SCORES OF CABINET RATINGS WITH DIFFERENT SITUATIONAL AND LPC CUT-OFFS**

<table>
<thead>
<tr>
<th>Situational Cut-Off</th>
<th>All Presidents</th>
<th>Experienced Presidents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>Mean</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>9.80</td>
<td>17.00</td>
</tr>
<tr>
<td>(n=5)</td>
<td>(n=4)</td>
<td>(n=7)</td>
</tr>
<tr>
<td>MF</td>
<td>13.30</td>
<td>12.20</td>
</tr>
<tr>
<td>(n=10)</td>
<td>(n=10)</td>
<td>(n=9)</td>
</tr>
<tr>
<td>UF</td>
<td>16.00</td>
<td>16.60</td>
</tr>
<tr>
<td>(n=5)</td>
<td>(n=5)</td>
<td>(n=7)</td>
</tr>
<tr>
<td>II.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>10.78</td>
<td>14.00</td>
</tr>
<tr>
<td>(n=9)</td>
<td>(n=7)</td>
<td></td>
</tr>
<tr>
<td>MF</td>
<td>14.47</td>
<td>13.71</td>
</tr>
<tr>
<td>(n=15)</td>
<td>(n=14)</td>
<td></td>
</tr>
<tr>
<td>UF</td>
<td>16.23</td>
<td>19.70</td>
</tr>
<tr>
<td>(n=7)</td>
<td>(n=10)</td>
<td></td>
</tr>
<tr>
<td>Median</td>
<td></td>
<td></td>
</tr>
<tr>
<td>III.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>11.00</td>
<td>17.00</td>
</tr>
<tr>
<td>(n=6)</td>
<td>(n=4)</td>
<td>(n=9)</td>
</tr>
<tr>
<td>MF</td>
<td>14.39</td>
<td>14.77</td>
</tr>
<tr>
<td>(n=13)</td>
<td>(n=13)</td>
<td>(n=12)</td>
</tr>
<tr>
<td>IV.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>11.00</td>
<td>13.78</td>
</tr>
<tr>
<td>(n=10)</td>
<td>(n=9)</td>
<td></td>
</tr>
<tr>
<td>MF</td>
<td>15.25</td>
<td>16.67</td>
</tr>
<tr>
<td>(n=20)</td>
<td>(n=18)</td>
<td></td>
</tr>
</tbody>
</table>

NOTE: F = Favorable situation, MF = Moderately Favorable situation, UF = UnFavorable situation.

Again, an analysis of variance table was presented for each block and related to the appropriate hypothesis.
The first ANOVA, for Block I, was computed for mean situational cut-offs across three levels of LPC. Results of this test are presented in TABLE 26:

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Favorableness (F)</td>
<td>2</td>
<td>273.12</td>
<td>136.56</td>
<td>10.21b</td>
</tr>
<tr>
<td>LPC (L)</td>
<td>2</td>
<td>113.02</td>
<td>56.51</td>
<td>4.22b</td>
</tr>
<tr>
<td>F x L</td>
<td>4</td>
<td>250.29</td>
<td>62.57</td>
<td>4.68b</td>
</tr>
<tr>
<td>Residual</td>
<td>53</td>
<td>709.00</td>
<td>13.35</td>
<td></td>
</tr>
</tbody>
</table>

a_p < .05
b_p < .01

As revealed in the table, significant effects were found for Favorableness and LPC in addition to a significant interaction effect. Referring to Block I of TABLE 25, it is evident that high LPC presidents were rated as more effective than low LPC presidents in favorable but not in moderately favorable situations. Also, intermediate LPCs were rated more highly in favorable than in moderately favorable situations.

Application of Sheffe's post-hoc test to compare these differences indicated that the high LPCs were rated significantly more effective in favorable situations than were the low LPCs (p < .05). This finding was contrary to hypothesis number two. No significant differences were found to exist in the moderately favorable situation between high and low LPCs when the post-hoc test was used. Intermediate
LPCs in the favorable situation were rated as significantly more effective than those in the moderately favorable situation, a finding contrary to hypothesis three. No significant difference existed between high and low LPCs in the unfavorable situation, a finding contrary to predictions of the Contingency Model. In general, it seemed that none of the first three hypotheses received support, based upon the ANOVA for Block I.

The second ANOVA, for Block II, was computed for mean situational cut-offs across two levels of LPC. Results of this test are given in TABLE 27:

<table>
<thead>
<tr>
<th>Table 27</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SOURCES OF VARIANCE AND F RATIOS FOR MEAN SITUATIONAL CUT-OFFS AND HIGH AND LOW LPC PRESIDENTS</strong></td>
</tr>
<tr>
<td><strong>Source</strong></td>
</tr>
<tr>
<td>Favorableness (F)</td>
</tr>
<tr>
<td>LPC (L)</td>
</tr>
<tr>
<td>F x L</td>
</tr>
<tr>
<td>Residual</td>
</tr>
</tbody>
</table>

<sup>a</sup><em>p<.01</em>

In contrast to the results obtained for the ANOVA in TABLE 26, only one significant F is found in TABLE 27: a significant effect for Favorableness. Because testing the first two hypotheses required achievement of at least a significant effect for LPC, these hypotheses must be assumed to lack support using this ANOVA. Although a Scheffe test for the Favorableness effect indicated that high LPCs in favorable situations are rated higher than high LPCs in moderately favorable
situations, neither hypothesis received support from this finding since no comparison was made with low LPCs.

For Block III of TABLE 25, an ANOVA was computed using median situational cut-offs across three LPC levels. Results of these computations are presented in TABLE 28:

**TABLE 28**

**SOURCES OF VARIANCE AND F RATIOS FOR MEDIAN SITUATIONAL CUT-OFFS AND HIGH, LOW, AND INTERMEDIATE LPC PRESIDENTS**

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Favorableness (F)</td>
<td>1</td>
<td>103.02</td>
<td>103.02</td>
<td>4.59a</td>
</tr>
<tr>
<td>LPC (L)</td>
<td>2</td>
<td>84.67</td>
<td>42.34</td>
<td>1.69</td>
</tr>
<tr>
<td>F x L</td>
<td>2</td>
<td>195.06</td>
<td>97.53</td>
<td>4.35a</td>
</tr>
<tr>
<td>Residual</td>
<td>51</td>
<td>1143.95</td>
<td>22.43</td>
<td></td>
</tr>
</tbody>
</table>

*p<.05

As indicated in TABLE 28, a significant effect for Favorableness was found and a significant interaction effect was found for Favorableness and LPC. Because a significant effect for LPC was not found, hypotheses one and two were not confirmed. Furthermore, the significant effect for Favorableness indicated that hypothesis three may not be confirmed. Results of a Scheffe test for intermediate LPCs across favorableness conditions confirmed this suspicion (S = 13.7, df = 1,51). None of the other favorableness mean comparisons for high and low LPCs achieved significance. While the first three hypotheses were not confirmed, the significant interaction effect indicated that the effectiveness of intermediate LPCs, while contrary to hypothesis three, is the result of the joint interaction of LPC
and favorableness.

The ANOVA for Block IV of TABLE 25 used median situational cut-offs and two LPC levels. Results of this test are given in TABLE 29:

**TABLE 29**

<table>
<thead>
<tr>
<th>Sources of Variance and F Ratios for Median Situational Cut-Offs and High and Low LPC Presidents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source</td>
</tr>
<tr>
<td>------------</td>
</tr>
<tr>
<td>Favorableness (F)</td>
</tr>
<tr>
<td>LPC (L)</td>
</tr>
<tr>
<td>F x L</td>
</tr>
<tr>
<td>Residual</td>
</tr>
</tbody>
</table>

*ap < .05

As indicated in TABLE 29, a significant effect was found for Favorableness but not for LPC or interaction. Lack of a significant effect for LPC again resulted in a loss of support for hypotheses one and two. Application of Scheffe's test to the favorableness conditions indicated that high LPCs in the favorable situation were rated significantly more effective than high or low LPCs in the moderately favorable situation. Obviously, this finding was contrary to hypotheses one and two.

To test hypotheses six, seven, and eight using analysis of variance techniques for cabinet perceptions, separate ANOVA's were also computed for Blocks V, VI, VII, and VIII in TABLE 25. Again, incomplete data prevented testing of these hypotheses for inexperienced presidents.
The ANOVA for Block V was computed using mean situational cut-offs across three LPC levels. Results of this ANOVA are presented in TABLE 30:

TABLE 30

SOURCE S OF VARIANCE AND F RATIOS FOR MEAN SITUATIONAL CUT-OFFS AND HIGH, LOW, AND INTERMEDIATE LPC EXPERIENCED PRESIDENTS

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Favorableness (F)</td>
<td>2</td>
<td>320.35</td>
<td>160.18</td>
<td>10.35&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>LPC (L)</td>
<td>2</td>
<td>93.64</td>
<td>46.82</td>
<td>3.03&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>F x L</td>
<td>4</td>
<td>281.78</td>
<td>70.45</td>
<td>4.55&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Residual</td>
<td>40</td>
<td>616.67</td>
<td>15.47</td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup><sub>p < .05</sub>

<sup>b</sup><sub>p < .01</sub>

As indicated in the table, significant effects were found for Favorableness, LPC, and interaction. These results were identical to those obtained in TABLE 26, using the same cut-offs and LPC levels except that experience was not differentiated. Consequently, it appeared that hypotheses six and seven were confirmed. However, as inspection of Block V in TABLE 25 might indicate, mean effectiveness scores for intermediate LPCs across favorableness conditions were statistically significant according to Scheffe tests between all three combinations of mean comparisons. Thus, hypothesis eight was not confirmed because of the significant effect for Favorableness. The significant interaction effect indicated that the effectiveness of high and low LPCs was apparently the result of the joint interaction of LPC and Favorableness.
For Block VI of TABLE 25, an ANOVA was computed using mean situational cut-offs and two levels of LPC. Results of this ANOVA are presented in TABLE 31:

**TABLE 31**

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Favorableness (F)</td>
<td>2</td>
<td>353.15</td>
<td>176.58</td>
<td>8.81</td>
</tr>
<tr>
<td>LPC (L)</td>
<td>1</td>
<td>57.54</td>
<td>57.54</td>
<td>2.87</td>
</tr>
<tr>
<td>F x L</td>
<td>2</td>
<td>89.91</td>
<td>44.96</td>
<td>2.24</td>
</tr>
<tr>
<td>Residual</td>
<td>43</td>
<td>862.36</td>
<td>20.05</td>
<td></td>
</tr>
</tbody>
</table>

As indicated in the above table, only the F for Favorableness was statistically significant. This result was identical to that obtained for the ANOVA presented in TABLE 27. Therefore, hypotheses six and seven were not confirmed for lack of a significant LPC effect. Application of the Scheffe test for Favorableness indicated that high LPCs in favorable situations were rated as more effective than high LPCs in moderately favorable situations—the same finding from the ANOVA of TABLE 27.

For Block VII of TABLE 25, an ANOVA was calculated using median situational cut-offs across three LPC levels. Results of this ANOVA are presented in TABLE 32.

As indicated in the table, significant effects appeared to exist for Favorableness and interaction—a result identical to that found in TABLE 28 where experience was not considered. Due to the lack
TABLE 32
SOURCES OF VARIANCE AND F RATIOS FOR MEDIAN SITUATIONAL CUT-OFFS AND HIGH, LOW, AND INTERMEDIATE LPC EXPERIENCED PRESIDENTS

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Favorableness (F)</td>
<td>1</td>
<td>110.67</td>
<td>110.67</td>
<td>5.61a</td>
</tr>
<tr>
<td>LPC (L)</td>
<td>2</td>
<td>55.23</td>
<td>27.62</td>
<td>1.40b</td>
</tr>
<tr>
<td>F x L</td>
<td>2</td>
<td>266.12</td>
<td>134.06</td>
<td>6.79</td>
</tr>
<tr>
<td>Residual</td>
<td>42</td>
<td>829.24</td>
<td>19.74</td>
<td></td>
</tr>
</tbody>
</table>

\[\text{ap} < .05\]
\[\text{bp} < .01\]

of a significant effect for LPC, hypotheses six and seven were not supported. Hypothesis eight was not confirmed because of the significant effect for Favorableness, a result supported by a Scheffe test comparing the means between intermediate LPCs in favorable and moderately favorable situations. Apparently, the perceived effectiveness of intermediate LPCs is the result of an interaction between their LPC scores and situational favorableness.

The last ANOVA, for Block VIII of TABLE 25, used median situational cut-offs and two LPC levels. Results of this test are given in TABLE 33.

The only significant F ratio found in TABLE 33 was that for Favorableness. No significant effects were found for LPC or interaction. Again, these results were identical to those obtained for the counterpart of Block VIII, Block IV. Specifically, Scheffe's test for the Favorableness conditions indicated that high LPCs in the
TABLE 33
SOURCES OF VARIANCE AND F RATIOS FOR MEDIAN
SITUATIONAL CUT-OFFS AND HIGH AND LOW
LPC EXPERIENCED PRESIDENTS

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Favorableness (F)</td>
<td>1</td>
<td>117.38</td>
<td>117.38</td>
<td>4.59a</td>
</tr>
<tr>
<td>LPC (L)</td>
<td>1</td>
<td>43.47</td>
<td>43.47</td>
<td>1.70</td>
</tr>
<tr>
<td>F x L</td>
<td>1</td>
<td>22.91</td>
<td>22.91</td>
<td>.90</td>
</tr>
<tr>
<td>Residual</td>
<td>44</td>
<td>1126.17</td>
<td>25.59</td>
<td></td>
</tr>
</tbody>
</table>

a_p < .05

favorable situation were rated as more effective than high or low LPCs in the moderately favorable situation. Given this finding, plus the lack of a significant effect for LPC, hypotheses six and seven do not receive support based upon this ANOVA.

Reviewing the F ratios computed for the cabinet ANOVA's, it was evident that seven (58.3%) out of the total 12 significant F ratios were those pertaining to favorableness. Only two (16.7%) of the 12 F ratios obtained significance for LPC and both of these were found for mean situational cut-offs across all three LPC levels. Of the remaining three (25%) significant F ratios for interaction, two (16.7%) were found with the significant F ratios for LPC and the other one (8.3%) accompanied the significant F for Favorableness.

While it was apparent that the majority of the significant F ratios indicated an effect for Favorableness, it cannot be necessarily concluded that a majority of the variance in cabinet perceived effectiveness was accounted for by perceptions of favorableness. Nor can
any similar conclusions be made with respect to LPC and interaction. The significant F ratios and Scheffe tests indicated that a significant relationship existed and where it existed, but they provided no information on the strength of the relationships between the treatment conditions and the independent variables.21

To estimate this "strength of association" between the dependent variable (effectiveness) and the treatment conditions, a measure known as the intraclass correlation coefficient was computed for significant effects and interaction. These coefficients were computed for all of the blocks in TABLE 25 since at least one significant F ratio was found in each block. The obtained coefficients indicate the proportion of variance in effectiveness accounted for by estimates of the different variance components (vis., favorableness, LPC, and interaction). Results of these computations are presented in TABLE 34.

As indicated in TABLE 34, the greatest proportion of variance in effectiveness, across all eight ANOVA's, appeared to occur due to the Favorableness effect. Only one of the Favorableness variance components was estimated to be zero: median cut-offs for high, low, and intermediate LPCs (Blocks III and VII). The other seven Favorableness effects accounted for proportions of variance ranging from one to 38 percent. Next in order were the six interaction effects accounting for from two to 49 percent of the variance. Last in order were the four LPC effects which accounted for variance ranging from

### TABLE 34
INTRACLASS CORRELATION COEFFICIENTS FOR ANOVA'S WITH CABINET PERCEPTIONS OF SITUATIONAL CUT-OFFS AND DIFFERENT LEVELS OF PRESIDENT LPC

<table>
<thead>
<tr>
<th>Block No.</th>
<th>All LPCs Combined</th>
<th>Experienced Presidents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Variance Component</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fav. LPC Inter.</td>
<td>Variance Component</td>
</tr>
<tr>
<td>I</td>
<td>.13 0 .25</td>
<td>V</td>
</tr>
<tr>
<td>II</td>
<td>.22 .07 .02</td>
<td>VI</td>
</tr>
<tr>
<td>III</td>
<td>.01 0 .35</td>
<td>VII</td>
</tr>
<tr>
<td>IV</td>
<td>.38 .12 0</td>
<td>VIII</td>
</tr>
</tbody>
</table>

**NOTE:** I and II = Mean cut-offs, Hi, Lo, and Intermediate LPC; II and VI = Mean cut-offs, Hi and Lo LPC; III and VII = Median cut-offs, Hi, Lo, and Intermediate LPC; IV and VIII = Median cut-offs, Hi and Lo LPC.

three to 22 percent.

When the coefficients were analyzed according to situational cut-offs, it was evident that a greater number of coefficients were obtained for mean cut-offs with ten (Blocks I, II, V, VI) than median cut-offs with seven coefficients (Blocks III, IV, VII, VIII). However, the coefficients with the greatest magnitude—accounting for the largest proportion of variance—occurred with the median cut-offs (.38 and .30 for Favorableness and .35 and .49 for interaction).

When the variance components for all LPC presidents were compared with those of experienced presidents, it appeared that the relative sizes of the variance components did not differ much. The greatest difference seemed to occur when median cut-offs were used. In this instance, the coefficient for interaction of the experienced
presidents was larger than that of all LPC presidents combined (.49 versus .35) and the coefficients for Favorableness and LPC were greater for all LPCs than those for experienced presidents (.38 and .12 versus .30 and .06 respectively).

In summary, TABLE 34 indicated that effectiveness of presidents (as perceived by cabinets) was determined more by perceptions of situational favorableness than either LPC or interaction as might be predicted. Furthermore, it seemed that mean cut-offs accounted for more variance, across treatment conditions, than did median cut-offs, although the median cut-offs produced larger coefficients. Finally, separating experienced presidents from all presidents combined did not appear to make much of a difference in the number of coefficients accounting for variance or in the size of these coefficients.

**Multiple Regression Analysis of Data**

Stepwise multiple regression analysis was used to determine which Contingency Model variable or combination of these variables was the best predictor of presidential effectiveness, the criterion variable. Four predictors were used as predictors for this procedure: president LPC scores, Group Atmosphere, Task STructure, and Position Power. The three situational variables were used as described by both presidents and cabinets as was the criterion, effectiveness. However, only presidential LPC scores were used with the president and cabinet perceptions of the other variables. In addition, multiple $R^2$ coefficients were computed for the four variables using: 1) all LPCs combined, 2) high, low, and intermediate LPCs (trichotomized into thirds)
and, 3) high and low LPCs (dichotomized LPCs).

For purposes of clarity and simplicity of presentation, only the corrected values of multiple R squared ($cR^2$) were given. Results of these computations for presidential perceptions are presented in TABLE 35:

**TABLE 35**

SQUARES OF MULTIPLE CORRELATION COEFFICIENTS FOR PRESIDENTIAL LPC SCORES AND PERCEPTIONS OF SITUATIONAL VARIABLES

<table>
<thead>
<tr>
<th></th>
<th>All LPCs (n=68)</th>
<th>High LPCs (n=33)</th>
<th>Low LPCs (n=34)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TS</td>
<td>.10&lt;sup&gt;a&lt;/sup&gt;</td>
<td>TS .06</td>
<td>TS .09</td>
</tr>
<tr>
<td>PP</td>
<td>.13&lt;sup&gt;a&lt;/sup&gt;</td>
<td>PP .13</td>
<td>PP .10</td>
</tr>
<tr>
<td>LPC</td>
<td>.14&lt;sup&gt;b&lt;/sup&gt;</td>
<td>GA .17&lt;sup&gt;a&lt;/sup&gt;</td>
<td>LPC .12</td>
</tr>
<tr>
<td>GA</td>
<td>.15&lt;sup&gt;b&lt;/sup&gt;</td>
<td>LPC .17&lt;sup&gt;a&lt;/sup&gt;</td>
<td>GA .12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Upper 3rd (n=22)</th>
<th>Lower 3rd (n=22)</th>
<th>Middle 3rd (n=23)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TS</td>
<td>.02</td>
<td>TS .04</td>
<td>PP .24&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>PP</td>
<td>.04</td>
<td>PP .13</td>
<td>TS .31&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>GA</td>
<td>.07</td>
<td>LPC .15</td>
<td>GA .34&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>LPC</td>
<td>.08</td>
<td>GA .15</td>
<td>LPC .36&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

**NOTE:** GA = Group Atmosphere, TS = Task Structure, PP = Position Power, LPC = Least Preferred Co-Worker.

<sup>a</sup> $p < .05$

<sup>b</sup> $p < .01$
As indicated in TABLE 35, only 15 percent of the variance in effectiveness was accounted for by the addition of all four variables, for all LPCs combined. This proportion did not appear to change much when the LPC distribution was trichotomized, except for the middle third or intermediate LPCs. In this latter instance, the combination of variables accounted for 36 percent of the variance. Dividing the LPC distribution into halves did not seem to change the proportion of variance much differently than when just the upper and lower thirds were used (.17 and .12 versus .08 and .15 respectively).

With the exception of the intermediate LPCs, the single best predictor of effectiveness across the different LPC cut-offs, appeared to be task structure, accounting for variance ranging from two to ten percent. The combination of task structure with position power appeared to be the second best predictor, followed by the addition of either LPC or group atmosphere. The best single and combined predictor for any one LPC group was that of position power for the intermediate LPCs.

Across the different LPC groups, the greatest increase in proportion of variance accounted for by adding variables occurred with the intermediate LPCs. In this instance, position power accounted for 24 percent of the variance by itself and increased 12 percentage points, to 36 percent, when the other variables were added. The smallest increase occurred with the dichotomized low LPCs (from nine to 12 percent). The best over-all combination of predictors was found with the intermediate LPCs which increased from 24 percent for position power to 36 percent for the combination of variables.
Results using identical LPC cut-offs for cabinet perceptions of situational variables and president LPCs, are presented in TABLE 36:

### TABLE 36

**SQUARES OF MULTIPLE CORRELATION COEFFICIENTS FOR PRESIDENTIAL LPC SCORES AND CABINET PERCEPTIONS OF SITUATIONAL VARIABLES**

<table>
<thead>
<tr>
<th>All LPCs (n=68)</th>
<th>High LPCs (n=33)</th>
<th>Low LPCs (n=34)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GA .33^b</td>
<td>GA .46^b</td>
<td>GA .28^b</td>
</tr>
<tr>
<td>TS .39^b</td>
<td>TS .49^b</td>
<td>TS .37^b</td>
</tr>
<tr>
<td>PP .43^b</td>
<td>PP .51^b</td>
<td>PP .39^b</td>
</tr>
<tr>
<td>LPC .46^b</td>
<td>LPC .53^b</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Upper 3rd (n=22)</th>
<th>Lower 3rd (n=22)</th>
<th>Middle 3rd (n=23)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GA .20</td>
<td>TS .17</td>
<td>GA .53^b</td>
</tr>
<tr>
<td>PP .28^a</td>
<td>PP .24^a</td>
<td>PP .65^b</td>
</tr>
<tr>
<td>TS .34^a</td>
<td>LPC .27^a</td>
<td>TS .66^b</td>
</tr>
<tr>
<td>LPC .36^a</td>
<td>GA .29^a</td>
<td>LPC .66^b</td>
</tr>
</tbody>
</table>

**NOTE:** GA = Group Atmosphere, TS = Task Structure, PP = Position Power, LPC = Least Preferred Co-Worker.

^a\text{p} < .05

^b\text{p} < .01

For all LPCs combined, 46 percent of the variance in effectiveness was accounted for by all variables combined. For the dichotomized high LPCs, this percentage was increased to 53 while variables described by dichotomized low LPCs accounted for a somewhat lower 39...
percent. It is interesting to note that LPC for the low LPCs apparently did not make a significant contribution to the prediction of effectiveness since it was not included in the regression equation. For all of the other LPC groups, LPC also did not appear to make a great difference since it was the last variable to be added in all cases except for the lower third LPCs.

Trichotomizing the LPC distribution seemed to decrease the total percent of variance accounted for by high and low LPCs when compared to the dichotomized LPCs (.53 to .36 and .39 to .29). However, trichotomization seemed to increase the proportion of variance accounted for when intermediate LPCs were used (.53 and .39 for dichotomized high and low LPCs versus a total of .66 for the trichotomized intermediate LPCs). The same result was observed for intermediate LPCs when presidential perceptions were used, and also held for high LPCs but not low LPCs where there was a decrease in percentage (See TABLE 35).

Across the different LPC cut-offs, group atmosphere appeared to be the single best predictor of effectiveness, with the exception of trichotomized low LPCs where task structure was the best predictor. The second best predictor seemed to be both group atmosphere and task structure and the combination of group atmosphere and position power, followed by the addition of either position power or task structure. The least contribution was made by LPC in every case except for the lower third LPCs where group atmosphere was found. For all LPCs and the dichotomized LPCs, the ordering of the variables in terms of contribution was in the order predicted by the Contingency Model (viz., group atmosphere, task structure, and position power).
The greatest increase in proportion of variance accounted for by adding variables occurred with the upper third LPCs (.20 to .36) while the smallest increase occurred with the dichotomized high LPCs. As found when presidential perceptions were analyzed, the best combination of predictors appeared to be those associated with the intermediate LPCs where 66 percent of the variance was accounted for. The smallest contribution of variance accounted for was found with the lower third LPC group. In general, it appeared that cabinet perceptions of situational variables and presidential effectiveness accounted for more variance in presidential effectiveness than do presidential perceptions of both situational variables and their own effectiveness.
SUMMARY, DISCUSSION, AND CONCLUSIONS

Summary

Purpose, Methodology, and Hypotheses

The purpose of the study was to determine the conditions under which the leadership styles of college presidents are effective with their administrative cabinets and the conditions under which they are ineffective. The interaction of leadership styles with conditions of effectiveness was investigated using Fiedler's Contingency Model of Leadership Effectiveness. In the model, three variables are used to measure the extent to which a situation is favorable to the exercise of leadership: leader-member relations (as measured by a Group Atmosphere Scale), task structure, and formal position power. Three different leadership styles were measured using Fiedler's Least Preferred Co-Worker Scale: relationship-oriented (high LPCs), task-oriented (low LPCs), and a combination of these two styles defined as being "flexible" or intermediate in LPC.

1F. E. Fiedler, op. cit., 1967.
2Ibid.
In the Contingency Model, the three situational variables are ordered as described above and then dichotomized to describe eight conditions or "octants" of situational favorableness. These octants are, in turn, divided into three favorableness conditions: favorable, moderately favorable, and unfavorable. According to the model, relationship-oriented leaders will be most effective in moderately favorable situations while task-oriented leaders will be most effective in the favorable and unfavorable situations. No predictions are made in the model for intermediate LPCs. All of the situational variables were measured using both president and cabinet member perceptions.

Presidential effectiveness, the dependent variable of the study, was measured using cabinet member and president perceptions on a scale developed for this purpose. Each president was rated on five different items: campus planning, budgetary decisions, academic decisions, fund-raising activities, and policy decisions in general.

A second area of study concerned perceptions of cabinet situational favorableness as defined by the Contingency Model. Both president and cabinet perceptions were used in this analysis.

The study also investigated conditions of effectiveness for experienced and inexperienced high, low, and intermediate LPC presidents. According to Fiedler,\(^3\) the effectiveness of high and low LPC leaders should vary according to situational favorableness and the number of years of experience in the leadership position.

\(^3\)F. E. Fiedler, op. cit., 1972.
Based upon the Contingency Model, the following eight hypotheses were tested:

1. In cabinets described as moderately favorable, high LPC presidents would be rated as more effective than would low LPC presidents.

2. In cabinets described as favorable, low LPC presidents would be rated as more effective than would high LPC presidents.

3. In cabinets with intermediate LPC presidents, there would be no significant difference in their rated effectiveness in either favorable or moderately favorable situations.

4. Both college presidents and their cabinet officers would describe the situation of the cabinets as being either favorable or moderately favorable.

5. Neither college presidents nor their cabinets would describe the situation of the cabinets as being very unfavorable.

6. In situations rated as favorable, experienced presidents with low LPC scores would be rated higher in effectiveness than experienced high LPC presidents.

7. In situations rated as moderately favorable, experienced and inexperienced presidents with high LPC scores would be rated higher in effectiveness than experienced and inexperienced low LPC presidents.
8. In cabinets with experienced or inexperienced intermediate LPC presidents, there would be no significant difference in their effectiveness in either favorable or moderately favorable situations.

Hypotheses one, two, three, six, seven, and eight were tested using two different methodological approaches. The first involved the conventional Contingency Model methodology of correlating LPC scores with effectiveness ratings within the different octant conditions described by presidents and cabinets. Positive coefficients were predicted to occur in the favorable situations and negative coefficients in the moderately favorable situations. The second methodology used analysis of variance techniques to test the differences in mean effectiveness scores for the three different leadership styles across different situations. In addition, both of these methodologies were used to test the effect of different LPC and situational variable cut-off points. The final analysis of hypotheses one, two, three, and six, seven, and eight, used multiple regression analysis to determine which combination of situational variables was the best predictor of presidential effectiveness. Hypotheses four and five were tested with Chi Square analysis.

Results

Based upon both presidential and cabinet member perceptions, different LPC and situational cut-offs, and different statistical methodologies, the results of testing the hypotheses can be summarized
as follows:

1. In general, relatively little support was found for the hypothesis that high LPCs will be rated as more effective than low LPCs in moderately favorable situations. Some support was found with the correlational analyses for presidents in Octant IV (moderately favorable) and for cabinets in Octant V (moderately favorable). However, none of these coefficients achieved statistical significance (see TABLES 11 and 23). The choice of mean and median situational cut-offs resulted in more moderately favorable than favorable octants being described with mean cut-offs. In addition, more coefficients were in the predicted direction when presidential perceptions were tested than with cabinet perceptions.

With the analysis of variance methodology, neither president nor cabinet perceptions resulted in confirmation of the hypothesis. None of the ANOVA's using presidential perceptions were statistically significant. In fact, the mean effectiveness scores in TABLE 14 indicate that low LPC presidents are more effective than the predicted high

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4 These different methods of analyzing data do not, of course, apply to hypotheses four and five where no predictions of effectiveness are involved.
LPCs. However, these differences were not found to be statistically significant.

Furthermore, the significant F ratios for cabinet perceptions indicate findings contrary to the hypothesis. The low LPCs were rated as significantly more effective than were the high LPCs when mean cut-offs were used for three LPC levels (see TABLE 25). The high LPCs were rated as more effective with all of the median cut-offs for cabinet perceptions, but these differences were not statistically significant. Finally, a significant interaction effect was found for both situational cut-offs across three LPC levels (see TABLE 25).

2. The hypothesis that low LPC presidents would be rated higher in effectiveness than high LPCs in favorable situations, fared little better than the first hypothesis. Using correlational analysis, the hypothesis was confirmed in two of the three favorable situation octants (I and II) with president perceptions, but only partially confirmed (Octant I with the Spearman coefficient) with cabinet perceptions (see TABLES 11 and 23). Again, none of the coefficients were statistically significant. In general, more coefficients were in the predicted direction for both mean and median cut-offs with presidential perceptions than with cabinet percep-
tions. As with the first hypothesis, the use of mean situational cut-offs resulted in more octants being described than with median situational cut-offs.

Use of the analysis of variance methodology yielded a similar pattern of results found for the first hypothesis. However, the situational cut-offs did not discriminate the rated effectiveness of high or low LPCs for either president or cabinet perceptions (see TABLES 11 and 23). In all cases, high LPCs in favorable situations were rated as being more effective than low LPCs in the same situation, contrary to the hypothesis. These differences were statistically significant for three LPC levels but not for two levels with mean cut-offs. The same significant interaction effect for mean cut-offs across three LPC levels was also evident, since testing of the first three hypotheses was based upon the same ANOVA design, with differences in LPC and situational cut-offs.

3. Using correlational analysis, the hypothesis that predicted equal effectiveness for intermediate LPCs across situations was supported with cabinet perceptions but not with president perceptions where only 70 percent of the coefficients were identical in sign (see TABLES 11 and 23). Of the coefficients found using cabinet perceptions, two coefficients were found in the unfavorable situation described (Octant VIII) which were
not of the same sign of the coefficients found in the favorable and moderately favorable situations. However, since the hypothesis did not predict for unfavorable situations, the hypothesis can be considered to be confirmed.

Use of the analysis of variance methodology required that a significant Favorableness effect for intermediate LPCs not be found. However, a significant effect for Favorableness was found in the ANOVA's using cabinet perceptions. In all cases, the intermediate LPCs were rated as more effective in favorable situations than in the other two favorableness conditions. For the cabinet perceptions, these differences were statistically significant.

In the situation where a significant LPC effect was found (Block 1 of TABLE 25), the intermediate LPCs were rated as being "intermediate" in effectiveness when compared to the high and low LPCs. That is, they were rated by cabinets as more effective than low LPCs in the favorable situation but not as effective as the high LPCs in the same situation. An identical result was obtained using presidential perceptions (although the differences were not statistically significant), thus supporting the hypothesis. A statistically significant interaction effect involving the intermediate
LPCs was also found for mean and median cut-offs across three LPC levels for the cabinet perceptions (see TABLE 28).

4. The fourth hypothesis was partially confirmed for presidents and cabinets when mean situational cut-offs were used, although some of both groups did describe the cabinet as unfavorable. Thus, while hypothesis four is confirmed with mean cut-offs, hypothesis five is not since the unfavorable situation is described. However, when median cut-offs were used, neither president nor cabinets described the cabinet as unfavorable, although they did describe it as favorable or moderately favorable as predicted. Using median cut-offs, both hypotheses four and five are confirmed. Apparently, the particular cut-offs used makes a difference in descriptions of situational favorableness.

5. Using correlational analysis, the hypothesis that predicted higher effectiveness ratings for low LPC experienced presidents in favorable situations (hypothesis six) was not confirmed for either president or cabinet perceptions. Only one, very low coefficient was found in the predicted direction (r = .08 for presidents using median cut-offs). It appears that high LPC experienced presidents received higher effectiveness ratings than low LPC experienced presidents in this situation.
With the analysis of variance methodology, none of the ANOVA's computed for presidents achieved statistical significance, although they did with cabinet perceptions. A significant LPC effect was obtained for cabinet mean cut-offs across three LPC levels. However, the results indicated that the experienced high LPCs were rated as significantly more effective than the experienced low LPCs—contrary to the hypothesis. The interaction effect found in this same situation (Block V in TABLE 25) indicates the presence of the joint action of LPC and situation contributing to this result. In the situations described by cabinets which did not produce an effect for LPC, all of the experienced high LPCs were rated as more effective than the experienced low LPCs. For presidential perceptions where no statistical significance was achieved, all of the experienced low LPCs were rated as more effective than the experienced high LPCs—concurring, at least artificially (due to lack of significance) with the hypothesis.

6. The seventh hypothesis was not confirmed for presidential perceptions using correlational analysis. The low LPC experienced and inexperienced presidents rated themselves as more effective in moderately favorable situations than did the experienced and inexperienced high LPC presidents in the same situation.
(see TABLE 13). This finding is contrary to the hypothesis. However, the hypothesis was confirmed with all coefficients except one for cabinet perceptions (see TABLE 24). Only one of these coefficients achieved statistical significance.

With the analysis of variance methodology, the low LPC experienced presidents were rated as more effective than the experienced high LPC presidents for both president and cabinet perceptions. The only exception was the situation involving median cabinet cut-offs with two LPC levels (Block VIII of TABLE 25). However, this difference was not significant since an LPC effect was not found. The only LPC effect for cabinet perceptions was that involving mean cut-offs across three LPC levels (Block V of TABLE 25). However, this difference was in a direction contrary to that predicted (i.e., low LPCs were rated more effective).

7. With the correlational analysis, some support was found for the hypothesis that intermediate LPC experienced presidents would be equally effective in favorable and moderately favorable situations. This support was evident when median cabinet situational cut-offs were used and all of the coefficients were negative (see TABLE 24). No inexperienced intermediate LPC presidents were found in this situation.
Using analysis of variance, the hypothesis was not confirmed for cabinet perceptions since a significant Favorableness effect was found with all of the different situational and LPC cut-offs. However, the lack of a Favorableness effect for presidential perceptions provides at least marginal support for the hypothesis. Experienced intermediate LPC presidents did not significantly differ in their self-ratings of effectiveness in either favorable or moderately favorable situations.

8. Based upon the significant F ratios computed for cabinet perceptions, the greatest proportion of variance in effectiveness appears to be due to the Favorableness effect with a range of from one to 38 percent (see TABLE 34). The only exceptions found were when median situational cut-offs were used across three LPC levels. In this latter situation, the interaction effect accounted for the greatest proportion of the variance.

With respect to the Favorableness effect, it would appear that cabinet officers attend to considerations of situational favorableness when rating the effectiveness of the presidents. Using the intercorrelation data presented in TABLE 9, group atmosphere seems to be the predominant variable inherent in the Favorableness effect since it correlates -.54 with effectiveness (n = 152, p < .001). Thus, cabinet officers tend to rate
the presidents as effective when they (i.e., the cabinet officers) perceive the group atmosphere (leader-member relations) of the cabinet to be relatively "good."

It is also significant to note that interaction effects account for from two to 49 percent of the variance in effectiveness. This finding would have been highly consonant with the predictions of the hypotheses and the Contingency Model if the mean effectiveness scores of the high and low LPCs had fallen into the predicted situations. Instead, it appears that the higher effectiveness of the high LPCs in favorable situations and low LPCs in moderately favorable situations, for example, was the result of the joint interaction of LPC and Favorableness.

The least amount of variance in effectiveness appears to be accounted for by the LPC effect. With percentages ranging from three to 12 percent, cabinet perceptions of presidential effectiveness were not greatly affected by presidential LPC scores as would be expected.

In general, mean situational cut-offs accounted for more variance in effectiveness across the three variance components than did median cut-offs. However, a greater proportion of the variance was accounted for when the median cut-offs were used, especially for the
interaction effects. In addition, dividing the presidents according to experience did not seem to make a great difference in the proportion of variance accounted for in effectiveness.

9. Using presidential perceptions of the situational variables, the best single predictor of their own effectiveness was task structure. For cabinet officers, however, the best predictor was group atmosphere. This latter finding (derived from multiple regression analysis) reinforces the results obtained for estimates of the variance components (c.f., Favorableness) discussed above (see TABLES 35 and 36). In addition, the ordering of the situational variables was consistent with that suggested by the Contingency Model.

When all of the situational variables were combined with LPC scores of the presidents, more variance in effectiveness was accounted for by cabinet than president perceptions. For cabinet officers, presidential LPC scores made the least contribution to the prediction of effectiveness across the different LPC cut-offs. However, for president perceptions, LPC and group atmosphere were equally divided in their relative contributions as being the "least best" predictors of effectiveness. For both presidential and cabinet descriptions of the situational variables, those descriptions associated with the intermediate LPC presidents accounted for more
variance in effectiveness than any of the other LPC cut-offs.

In summary, from the tests of the hypotheses and the other examinations, the following specific findings pertain:

1. Contrary to hypothesis one, high LPC presidents were not found to be significantly more effective than low LPCs in moderately favorable situations.

2. Contrary to hypothesis two, low LPC presidents were not found to be significantly more effective than high LPCs in favorable situations. With three LPC levels, high LPCs were significantly more effective.

3. Contrary to hypothesis three, intermediate LPC presidents were significantly more effective in favorable than moderately favorable situations. Thus, the hypothesized "role enactment flexibility" of the intermediate LPCs was not supported.

4. In general, hypotheses four and five were supported. The majority (83%) of presidents and cabinet members described the cabinet situation as favorable or moderately favorable. However, presidents described the cabinet situation in significantly more favorable terms than did the cabinet members.

5. Contrary to hypothesis six, experienced low LPC presidents were not found to be significantly more effective than experienced high LPCs in favorable situations. Instead, the experienced high LPCs were found to be significantly more effective.

6. Contrary to hypothesis seven, experienced and inexperienced high LPC presidents were not found to be significantly more effective
than experienced and inexperienced low LPCs in moderately favorable situations.

7. Hypothesis eight received marginal support. Using presidential perceptions of the situational variables, experienced intermediate LPCs were not statistically different in their effectiveness in either favorable or moderately favorable situations. However, the same presidents were statistically different when cabinet perceptions were used.

8. In rating the effectiveness of their presidents, cabinet members attended to considerations of situational favorableness—accounting for almost one-third of the variance in presidential effectiveness.

9. Using presidential perceptions of the situational variables, the best single predictor of their own effectiveness was task structure. For cabinet officers, the best single predictor of cabinet perceptions of presidential effectiveness was group atmosphere.

Discussion

High and Low LPCs

The results seem to indicate that, in general, the conditions under which different presidential leadership styles are effective run counter to the predictions made by the Contingency Model. In most instances, high LPCs were rated as being more effective in favorable situations and low LPCs were rated as being more effective in moderately favorable situations. This observation is more pronounced with cabinet perceptions where the contrary findings achieved statistical signif-
icance. Results using presidential perceptions were generally as predicted by the model, although neither the correlational nor the ANOVA analyses yielded statistically significant results. Furthermore, these findings seem to apply whether or not the presidents are categorized according to their experience in the presidency.

One way to explain these particular results might be to consider the different perceptions used to describe the situational variables. When presidents rate themselves on effectiveness and describe their situations, the findings tend to conform to other findings based upon the Contingency Model. That is, the results are in the predicted direction but statistical significance is not obtained. Thus, although these results conform, they cannot be interpreted as indicating support for the study hypotheses involving high and low LPCs. However, the use of cabinet perceptions did not even yield results in the predicted direction, let alone the attainment of statistical significance for these results.

It may be that these differences were due to the fact that the presidents' perceptions of the situational variables were not as highly associated with their perceptions of their own effectiveness as was the case with cabinet perceptions. As an examination of TABLE 9 indicates, all of the cabinet perceptions of situational variables and presidential effectiveness were intercorrelated at a statistically significant level (p<.001). In contrast, only the variable pair of task structure and effectiveness was significantly correlated using

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\(^5\)e.g., M. M Chemers and G. J. Skrzypek, op. cit., 1972.
Because the presidents were able to discriminate between variables to a greater extent than cabinets, their more "objective" descriptions may have produced results which conformed more to the Contingency Model predictions. The tendency of the cabinets to associate the situation with effectiveness may have, on the other hand, statistically confounded the predictions. That is, their perceptions of effectiveness may have been related more to perceptions of situational favorableness rather than the presidents' actual effectiveness.

Some support for this notion is suggested in a recent study by Heneman who found that self-ratings contained less halo error than superior ratings. (While he dealt with superior rather than subordinate ratings, both types involve an external assessment compared with self-ratings.) Using different performance dimensions, intercorrelations for self-ratings were less than those for superior ratings in 31 of 36 comparisons. This finding appears to parallel that obtained in the present study using situational variables and effectiveness ratings.

If Heneman's findings are at all generalizable, it is conceivable that the results of the study found to be contrary to the hypotheses using cabinet perceptions (e.g., high LPCs more effective in favorable situa-

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6 It has been suggested that the more "objective" are the criteria of effectiveness, the greater the probability the obtained results will conform with Contingency Model predictions. See e.g., D. J. F. Duffy et al., "A Field Extension of Fiedler's Contingency Model," Paper presented at the meeting of the Midwestern Psychological Association, 1970.

tions), may be explained because of cabinet member halo error.

Another, more general explanation, may be related to the validity of the effectiveness rating scale. In contrast to most Contingency Model studies, an "objective" measure of effectiveness--such as number of units of some product--was not used in the present study. It may be that more quantifiable measures would have produced more results in the predicted direction. However, even this method would present the problem of ascertaining the influence a president has on such quantifiable measures. It would be very difficult, for example, to measure a president's influence upon a change in student enrollment.

The fact that a college is not a business further complicates the problem because of the "control" inherent in a president's position which can be used to influence various outcomes. For example, a college president has fewer opportunities to control prices of educational services offered to students than does a corporation president. In contrast to a free market situation, students cannot be charged the total costs involved in running an institution. In business, pricing policies and strategies are usually directly related to profits. Reducing prices in a competitive market can increase profits. However, since a college president is not able to use such strategies, the problem of measuring effectiveness is magnified.  

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Intermediate LPCs

Given these considerations pertaining to the effect of different perceptions of situational favorableness, the mixed results obtained for the intermediate LPCs are even more perplexing. Using correlational analysis, the "flexibility" hypotheses of the intermediate LPCs were supported only with the cabinet perceptions, although none of the coefficients attained significance. With the analysis of variance methodology, these hypotheses were supported only with president perceptions because of the lack of statistical significance. Furthermore, experience seemed to affect support of the intermediate LPC hypotheses for cabinet perceptions but not for presidents with correlational analysis. However, experience had relatively little effect when analysis of variance was used.

Because uniformity of coefficient signs across different situations was established as the criterion for support of the intermediate LPC hypotheses using correlational analyses, a note of caution should be made. The lack of studies using intermediate LPCs does not permit any comparisons to be made as to whether the coefficients signs should be all positive or all negative—if indeed coefficient signs are appropriate for testing effectiveness of intermediate LPCs. Thus, the study results which used this procedure should probably be seen as more descriptive than supportive. It is highly likely that the "high" intermediate LPC scores found to be associated with high effectiveness ratings are reflective of the trichotomization used to determine LPC levels in the study. Depending upon the cut-offs used, "high" intermediate could also be defined as high LPCs in the manner conventionally
used in the Contingency Model. In another study, for example, the negative coefficients obtained could simply indicate the higher effectiveness of "high" rather than intermediate LPCs. A problem of determining LPC cut-off points seems evident.

From reviewing Contingency Model studies, it is difficult to determine exactly where a high LPC begins and a low LPC ends. The traditional procedure has been to treat LPC as representing a bi-dimensional measure of both relationship- and task-orientation. With this method, it is very difficult to define an intermediate LPC individual. Instead, it would probably be more useful to interpret the LPC scale as measuring a unidimensional concept as suggested by Shiflett.9

He proposes that LPC be conceptualized as representing only degrees of relationship-orientation. LPC could then be interpreted as a measure of high or low relationship orientation in addition to individuals who are equally high or low.10 If this approach is conceptually sound, the interpretation of coefficient signs is made somewhat easier since degrees of relationship-orientation can be assumed to occur with equal frequency. However, the problem of the desirability of either positive or negative coefficient signs remains. It would seem that the analysis of variance methodology represents the better technique for studying intermediate LPCs since it is based upon variance comparisons between distinct central measures (c.f., means).

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10 Ibid.
In any event, the results of the study with intermediate LPCs cast doubt upon Jacobs' hypothesis of "role enactment flexibility" of intermediate LPCs. A major problem would seem to be related to defining the "middle" range of LPC scores. As discussed in Chapter II, various methods have been employed to classify LPC levels. The more conventional methods have used an obtained distribution of LPC scores, such as the median-split or extreme groupings. However, the conceptual validity of role enactment flexibility is based upon the available range of scores falling within at least the middle third of the LPC scale itself—roughly scores ranging from 37 to 75 or 37 scale points. That is, intermediate LPCs should differentiate both positive and negative aspects of the LPC.

In the present study, the more conventional method of classifying LPC levels was used due to a lack of normative data on LPC scores of college presidents. The result was that intermediate LPC presidents were defined by using the middle third of the presidential LPC distribution. These scores ranged from 57 to 77, representing a total of 17 fewer scale points than found in the middle third of the LPC scale itself. As a consequence, the presidents who scored between 37 and 56 were classified as low LPCs rather than intermediate LPCs. A similar problem exists in other studies which have used upper and lower third


LPC ranges of score distributions to define high and low LPCs. For example, Chemers and Rice\textsuperscript{13} defined high LPCs as persons in their study with scores ≥72 and low LPCs as scores ≤58. With this particular range, low LPCs with scores from 37-58 would be classified as intermediate LPCs if guided by the middle third of the LPC scale instead of the obtained distribution of scores.

Regardless of these considerations, the lack of a predicted flexibility for intermediate LPCs may be the result of other factors. The different LPC ranges discussed above involve somewhat arbitrary considerations of determining the precise range necessary to define intermediate LPCs. A more reasonable explanation might be found in the theoretical adequacy of LPC as a measure of task- and relationship-orientation.

As previously discussed, the bi-dimensional interpretation of LPC presents some conceptual problems in terms of its usefulness as a measure of a personality trait. One of these problems is highlighted when intermediate LPCs are hypothesized to be motivated by both task and person factors. A primary difficulty would seem to be that several of the LPC scale adjectives appear to be job-related (e.g., efficient-inefficient, cooperative-uncooperative) while the majority are more related to interpersonal characteristics (e.g., pleasant-unpleasant, friendly-unfriendly). Kerr\textsuperscript{14} makes the point that these job related

\textsuperscript{13}op. cit., p. 21.
adjectives may be "the cause of the ratee being selected . . ." As a result, they would tell little about a person's motivation. If the scale does not really measure task orientation, it is difficult to conceptualize intermediate LPCs as being equally task- and relationship-oriented.

However, it is intuitively difficult to conclude that it is not possible for some persons to be motivated by and exhibit behavior involved in both dimensions. It has already been documented in the literature that some persons are capable of fulfilling "task" and "socioemotional" roles in groups.\textsuperscript{15} The problem, then, seems to reside with the LPC scale itself. To resolve this difficulty, future research with the LPC scale might consider the possibility of using only "person-oriented" adjectives.

**Effects of Experience**

The lack of a difference for experience found when analyzing all LPC levels with ANOVA and with correlational analyses, deserves some attention, since this finding contradicts predictions based upon Contingency Model research. For the present study, experience in the presidency did not appear to affect the results any differently than when experience was not considered.

One possible explanation of this finding may be that the definition of an experienced president was inaccurate. In contrast to

\textsuperscript{15} e.g., R. F. Bales and P. E. Slater, op. cit.; D. Moment and A Zaleznik, op. cit.
three year cut-off point used by McNamara with school principals and the four year cut-off used in the present study, a higher cut-off point of say five or six years may have produced predicted results with college presidents. However, this interpretation is highly speculative since the effects of experience may be more a function of factors not directly affected by a time continuum. For example, Csoka found that leader intelligence appears to moderate situational favorableness so that more intelligent leaders benefit most from experience. Furthermore, one president may become "experienced" after two years on a job, while another may require five years; or the size of the college may determine the point at which a situation becomes favorable. All of these factors plus others may be equally responsible for improving favorableness as do years in a job.

Another explanation (and a statistically more attractive one) is that the four year cut-off point created a condition where the number of inexperienced presidents was relatively small to be spread across different favorableness situations and still obtain statistically reliable results. The separation of inexperienced presidents from all presidents combined may not have significantly altered the error variance involved in perceptions of the experimental variables. In effect, two similar groups of presidents were being compared. The similarity of results obtained using all presidents versus experienced presidents

16 V. D. McNamara, op. cit.

only, would lend credence to this notion.

A third explanation is suggested by Kerr and Harlan who contend that "there is nothing very special about leader training and experience." According to their reasoning, experience in a position can alter situational favorableness but so can any number of other factors. Furthermore, the situations of predicted effectiveness for high and low LPCs are seen by Fiedler as being fixed. Thus, high LPC leaders, for example, should only be effective in moderately favorable situations, regardless of their experience. Experience should not modify the Contingency Model predictions, although it may change the condition of situational favorableness. Since the results of the present study indicate that experience (as defined) does not alter situational favorableness, it is only reasonable to conclude that experience has little effect upon the results.


20 It should be noted, however, that the Kerr and Harlan arguments may have overlooked an important dimension inherent in the inclusion of experience in the Contingency Model. From a practical standpoint, it would be of great value to know when situational favorableness changes and consequently alters predicted effectiveness. Job rotation, for example, presents one potential application. For a more complete discussion on this matter, see F. E. Fiedler, Toward a Comprehensive System of Leadership Utilization (Seattle, Washington: University of Washington, Technical Report No. 73-50, 1973) or F. E. Fiedler and M. M. Chemers, Leadership and Effective Management (Glenview, Illinois: Scott, Foresman and Co., 1974), pp. 120-139.
Description of Favorableness

Two of the hypotheses predicted that both presidents and the cabinet would describe the cabinet situation as being either favorable or moderately favorable, but not unfavorable. These findings were based upon results of a previous study which used the Contingency Model with college presidents and their administrative cabinets. The results of the present study duplicated these findings with median situational cut-offs and supported the hypotheses. However, mean cut-offs were also used in the present study which did not support the hypotheses, since a proportion of both presidents and cabinets described the cabinets as unfavorable.

The unfavorable situations described with the mean cut-offs for presidents and cabinets is not too surprising because of the relatively small standard deviations associated with the mean cut-offs (see TABLE 8). Use of a median cut-off for the variables of task structure and position power would not change the grouping of the majority of scores found near the mean within one standard deviation (involving approximately 68 percent of the scores). This would be especially true for "high" position power where the median cut-off was ≤59 for both presidents and cabinets compared with mean cut-offs of ≤30 and ≤33 respectively for task structure. This higher cut-off for position power


22 It should be noted that in the VanGundy and Haynes study, five percent of the presidents did describe their situation as unfavorable. However, in formulating the hypotheses of the present study, it was decided that this represented a negligible quantity.
would indicate that more descriptions might be found for high position power associated with good leader-member relations, which was held constant for both mean and median cut-offs, and closely approximated the normative cut-off of 65 (see TABLE 8). Since the combination of high position power and good leader-member relations is not represented in unfavorable situations (see TABLE 1), the lack of a description for unfavorable situations with median cut-offs seems reasonable.

More important than this observation, however, is the manner in which president and cabinet descriptions varied along the favorableness continuum. As previously reported in Chapter IV, a significantly greater percentage of presidents described the cabinet situation as favorable than did cabinet members themselves. However, more cabinet members than presidents described the cabinet situation as moderately favorable or unfavorable (using mean cut-offs).

These findings are perhaps not too unexpected since subordinates, in general, might be likely to see their situation as being less favorable than their superiors. In one respect, they "have nothing to lose" in personal gain in describing the situation as unfavorable, especially if they view the "tone" of their situation as being determined by their superiors. The superiors (cf., presidents), on the other hand, are probably more prone to halo error. That is, many of the presidents may have felt a need to describe a situation over which they have a relatively large amount of control, or as one which they perceive to be "ideal." In one sense, the presidents may have believed it to be more socially desirable to describe their cabinets as having good interpersonal relations, well-defined tasks, and for themselves
to have high position power (i.e., to be in control). The nature of these variables seems to imply that "with me as a leader, all is well."

While this latter statement may be an exaggeration of the actual dynamics involved in the presidents' perceptions, certain implications would seem to be fairly obvious. One would be that presidents, in general, see themselves as being in a situation which is rather favorable for their influence attempts with the cabinet officers. Pertaining to presidents on the average, this perception would seem to indicate that the presidents would be more likely to initiate leadership acts than if they perceived themselves to have little control or influence potential.

Empirical support for this notion has been found in several studies. For example, Bass, Gaier, and Flint reported that leadership attempts increased monotonically with amount of control; Hemphill, Pepinsky et al. found that more leadership attempts were made by leaders with subjective expectations of success; and Nagata found that groups permitted leaders to exercise more control when tasks were easy than in groups where tasks were difficult.

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However, the fact that presidents may attempt leadership or influence with the cabinet does not, necessarily, indicate that they will be successful in their attempts. To be successful, some change in cabinet member behavior, motivation, or attitudes must be observed. Because cabinets, on the average, tend to describe the cabinet situation as more moderately favorable and unfavorable than do the presidents, the probable success of these attempts is somewhat diminished. It would seem that presidents could increase their effectiveness if the cabinets also perceived the presidents' situation to be more favorable.

However, the results found in this study indicate potential areas of conflict, especially in the realm of leader-member relations. From the data presented in Chapter IV, it is evident that presidents and cabinets significantly disagree in their perceptions of the quality of interpersonal relations between the president and his cabinet members. The cabinet members perceived the leader-member relations to be less favorable for the presidents than did the presidents themselves. As a result, it may be that presidential influence attempts are more successful in situations where president and cabinet perceptions coincide in terms of favorableness. Some support for this proposition has already been discussed in that cabinet perceptions of presidential effectiveness appear to be positively related to cabinet perceptions of situational favorableness.

26 This distinction is discussed in B. M. Bass, Leadership, Psychology, and Organizational Behavior (Westport, Connecticut: Greenwood, 1960, p. 90).
Predictions of Effectiveness

Perhaps the most significant findings of the study emerged from using perceptions of the situational variables to predict presidential effectiveness. With the multiple regression analysis, substantial differences were found between presidents and their cabinets in terms of what the best predictors were. By analyzing these differences, it might be possible to gain some insights into how presidents can increase their effectiveness and reduce conflict (either overt or covert) with their cabinets.

In general, president ratings of their own effectiveness tended to be associated primarily with their perceptions of the task structure of their jobs with their cabinets (see TABLE 35). Across all LPC levels, task structure alone accounted for ten percent of the variance in effectiveness ($p < .05$). Although this proportion was found to be statistically significant, it indicates that the presidents apparently attended more to variables other than Contingency Model variables in rating their own effectiveness. The addition of the other two situational variables and the presidents' LPC scores to the regression equation increased this proportion to only 15 percent.

It is difficult to speculate as to what these other factors might be. One possibility may be that presidents attend more to themselves as "political leaders" as found by Cohen and March, or as "statesmen" as suggested by Baldridge. Thus, they might evaluate

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27 op. cit., p. 146.
28 op. cit., p. 206.
their effectiveness in terms of how well they see themselves as being able to influence, stimulate, and placate diverse constituencies and viewpoints. Undoubtedly many other possibilities exist such as past reinforcement history affecting performance evaluations of one's self, satisfaction with their own performance, perceived expectations of boards and other university and extra-university groups, etc.

Nevertheless, it is interesting to note that of the president LPC scores and the situational variables they describe, task structure was the best single predictor of their own effectiveness. According to the intercorrelations presented in TABLE 9, presidents tended to describe themselves as being more effective when they perceived their tasks to be relatively structured \( r = -.38, p < .001 \). It seems that when presidents see themselves as having a clear and relatively well-defined picture of their jobs, they are better able to apply criteria of evaluation. In one sense, a form of "situational mastery" is implied. Thus, if persons feel they have mastered their situations, they have, to an extent, already evaluated themselves in that they see explicit standards from which to make inferences and comparisons of effectiveness.\(^29\) One simple example might be in the area of fund-raising. If a specific president considers himself to be a competent fund-raiser, as measured by revenue generated, it is easy to see how

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\(^{29}\) Another intervening variable may be the degree that the presidents are "internally" or "externally" controlled by their environments as they see themselves. It is conceivable that most president have an internal locus of control. For a more detailed discussion of locus of control, see J. B. Rotter, "Generalized Expectancies for Internal Versus External Control of Reinforcement," *Psychological Monographs*, 80, 1966, pp. 1-28.
he would be able to rate himself as effective. The criterion is much more clear than had group atmosphere been the best predictor. Evaluation of the quality of leader-member relations would require drawing more inferences than when an objective criterion or standard is available.

In contrast to the presidents, the cabinet members did see group atmosphere as the best predictor of presidential effectiveness. For all LPC presidents combined, this variable accounted for 33 percent of the variance in cabinet ratings of presidential effectiveness (p<.01, see TABLE 36). Combining group atmosphere with the other situational variables and presidential LPC scores increased this percentage 13 points to 46 percent. Since the correlation between group atmosphere and effectiveness for cabinet perceptions is -.54 (p<.001), it is obvious that the prime criterion involved for cabinets in rating presidents high in effectiveness is that the leader-member relations be seen as being relatively "good." Furthermore, the combination of all of the variables with cabinet perceptions increases the percent of variance accounted for by 13 percent compared to five percent for president perceptions.

This relatively high degree of relationship between leader-member relations and effectiveness would seem to indicate a problem in using subordinate perceptions with the group atmosphere scale. In a study by Farris and Lim, it was found that subordinate perceptions of the leader are affected by the performance of the group. If cabinet

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ratings of presidential effectiveness can be equated with group performance, then group atmosphere would appear to determine, in part, perceptions of effectiveness.

It should be noted, however, that Fiedler defines leader-member relations as primarily involving the leader's perceptions of the group. Furthermore, the leader's perception is likely to be quite different than members' perceptions since his or her tasks are often different from those of the members. Since it is the leader's perception of how much influence he can exercise commensurate with the degree of situational favorableness that determines his effectiveness, the effect of cabinet perceptions of effectiveness should not be conceptually relevant to predictions of the model.

If this latter statement possesses at least face validity, the results of the present study in which cabinet perceptions were used to test the model should probably have been viewed as not supporting the model. However, this is not to say that the cabinet perceptions are not important. If the cabinet members primarily attend to the group atmosphere of the cabinets, and presidents attend more to the task structure, a potential area of conflict has been identified. Furthermore, and perhaps more important, even if presidents see themselves in a "good" leader-member relations situation, it may not be quite as favorable to their influence if the cabinet members disagree with this assessment. Given this proposition, it would seem reasonable to conclude that Contingency Model studies in field situations might try to include both

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31 F. E. Fiedler, op. cit., 1967, p. 32.
leader and member perceptions of situational favorableness. The only possible exception might be situations in which sociometric "liking" measures are used.

It has been previously suggested that the best measure of leader-member relations would be sociometric choice measures. With sociometric data, member perceptions are also included in the favorableness continuum. Thus, it would seem reasonable, given the lack of sociometric data in the present study, that both leaders and members did complete the group atmosphere scale. In contrast to the present study, future research not using sociometrics, might consider using a weighted measure of both leader and member group atmosphere scores. With such an approach, a more realistic measure of the leader-member relations might be tapped.

While president and cabinet perceptions seem to differ with respect to the best predictor of effectiveness, there does exist one area of similarity. The largest proportion of variance in effectiveness was accounted for with intermediate presidential LPC scores for both president and cabinet perceptions (see TABLES 35 and 36). For presidents 36 percent of the variance was accounted for with all variables combined (p<.01). The best single predictor was position power accounting for 24 percent of the variance (p<.05). For cabinets, all of the variables accounted for 66 percent of the variance (p<.01) and the best single predictor was group atmosphere accounting for 53 percent (p<.01).

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32 e.g., J. T. McMahon, op. cit., p. 704.
Due to the relative paucity of research involving intermediate LPCs, it is somewhat difficult to adequately explain why intermediates accounted for a greater proportion of the variance in contrast to highs, lows, or all LPCs combined. The "simple" R used in the regression equation for intermediate LPCs with presidents' perceptions was .59 (p<.01). This degree of relationship indicates that the intermediate LPC presidents tended to associate low position power with high effectiveness.

The same directional relationship was also found with the high LPCs but not with the low LPCs. The major distinction seems to be that position power was the best predictor only for intermediate LPCs.

With cabinet perceptions, the "simple" R for intermediate LPC presidents was -.77 (p<.01), indicating "good" leader-member relations being associated with high effectiveness. In contrast to the presidents, the group atmosphere was also the best predictor for the other LPC cut-offs, except for the lower third LPCs (see TABLE 36). The same directional relationship was also found for the other LPC cut-offs.

The conceptual significance of these findings, for both president and cabinet perceptions, seems to be that presidents who describe their LPC in both favorable and moderately favorable terms appear to

33A review of some 70 investigations which were concerned with the Contingency Model in some way, revealed that only nine studies even acknowledged the existence of intermediate LPCs. Of these nine, only three included intermediate LPCs in their data analysis. Only one of these three involved a specific hypothesis which, however, was not confirmed (see M. G. Evans, "A Leader's Ability to Differentiate, the Subordinate's Perception of the Leader, and the Subordinate's Performance," Personnel Psychology, 26, 1973, pp. 392-393, for a description of the hypothesis which was not confirmed).
be associated with a greater proportion of the variance in effectiveness than do presidents who describe their LPC in more extreme terms (i.e., mostly favorable or mostly unfavorable). This finding could possibly be explained by use of human information processing theory which incorporates the notion of cognitive complexity. According to Bieri,\textsuperscript{34} persons who are low in cognitive complexity tend to classify others according to stereotypical perceptions (i.e., "good" or "bad") and make less fine discriminations among conflicting stimuli. In contrast, more cognitively complex individuals would see others as possessing both "good" and "bad" attributes and are better able to make finer discriminations in processing information.

Conceptually, these notions are easily transferrable to intermediate LPCs who should describe their LPC using both favorable and unfavorable adjectives.\textsuperscript{35} From a hypothetical viewpoint, an approximately equal number of favorable and unfavorable adjectives should be marked by intermediates in describing their LPC. To test the cognitive complexity notion pertaining to intermediates, it would then seem that the number of extreme ratings should be inspected to determine if they conform with the expected pattern.

To this end, the mean number of "1's," "2's," and "3's" (unfavorable poles of the adjectives) and "6's," "7's," and "8's" (favor-


\textsuperscript{35}The ability of the LPC scale to measure cognitive complexity has been previously substantiated in a number of studies, e.g., T. R. Mitchell, "Leader Complexity and Leadership Style," Journal of Personality and Social Psychology, 16, 1970, pp. 166-174.
able poles) circled by intermediate LPCs on the LPC scale, were compared with the same extreme ratings for high and low LPC presidents combined. For the intermediate LPCs, there should be relatively little correlation between the number of favorable and unfavorable adjectives since both should be almost equally as likely to be circled if the intermediate LPCs attend to both "good" and "bad" qualities. However, for the high and low LPCs there should be a relatively high negative correlation since they should tend to describe their LPC as being either mostly good or bad.

Computation of Pearson's \( r \) for these two groups indicated that the favorable and unfavorable adjectives circled by the intermediate LPCs correlated only \(-.05\). Those circled by the high and low LPCs correlated \(-.82\) (\( p < .01 \)). It appears that the intermediate LPCs describe a more balanced number of favorable and unfavorable adjectives as predicted. In contrast, the high and low LPCs tended to describe their LPC in either mostly favorable or mostly unfavorable terms. The use of LPC as a measure of cognitive complexity, as defined in this study, appears to be supported.

It would then follow that intermediate LPC presidents are more cognitively complex and make finer discriminations in processing information, their perceptions might account for more variance in effectiveness than a less discriminating president. The person lower in cognitive complexity would, conceivably, be less able to "objectively" relate to situational perceptions of effectiveness.

However, this proposition loses some of its appeal when it is observed that more variance in effectiveness was also accounted for
with intermediate LPC presidents when cabinet perceptions were used (although to a lesser extent). Since the cabinet situational perceptions are independent of presidential LPC scores, no relationship should exist between these perceptions and president LPCs and cabinet effectiveness ratings.

It would seem that an explanation must be sought elsewhere. One possibility might be based upon a combination of the cognitive complexity levels of the presidents themselves and how cabinet members perceive the behavior of the intermediate LPC presidents in comparison to either high or low LPC presidents.

Because the behavior of high and low LPCs has been shown to reverse in favorable situations (Octants I, II, and III), these behavioral reversals cause a decrease in effectiveness of the leader. For example, a relationship-oriented leader will exhibit relationship-oriented behavior in moderately favorable situations. However, in a favorable situation his behavior becomes task-oriented and decreases his effectiveness since the tasks are already clearly defined. Leader influence attempts at structuring tasks are least likely to be successful when the tasks are already structured.

It may be that the behavior of intermediate LPCs tends to be relatively flexible across different favorableness conditions so that it appears as being appropriate for the situation as perceived by the group members. If this is the case, the greater variance accounted

for in effectiveness using cabinet perceptions of the situational variables, might be more easily explained. That is, the cabinet members who work with intermediate LPC presidents may have seen the behavior of these presidents as being more or less appropriate regardless of how favorable they described the situation to be. In contrast, cabinets with high or low LPC president may have been more likely to see the behavior of these presidents as being appropriate or inappropriate because of changes in behavior of these presidents. Unfortunately, no research is available on the behavioral flexibility of intermediate LPCs.

Conclusions and Recommendations

In general, the failure of the results to conform with predictions of the Contingency Model seem to point to four possible conclusions: 1) the Contingency Model itself is conceptually invalid, 2) the model is valid but the instrumentation and methodology it employs are defective, 3) the study incorrectly utilized the instrumentation and methodology of the model and, 4) possible sampling (respondent) bias reduced the degree of desirable statistical inference necessary for interpreting the results.

To some extent, all four of these possibilities must be considered in making recommendations and drawing conclusions from the results. It might prove useful to briefly analyze each of these possibilities before proceeding to the development of more specific conclusions and recommendations.

First, the Contingency Model has been the focus of controversy in the area of leadership research since its exposition in the middle 1960's. One study criticizing the model always seems to be followed
by another which "refutes the refutations." Nevertheless, the bulk of the evidence would seem to indicate that the basic conceptual framework of the model is sound. What may need altering are the variables used to define situational favorableness. For example, it has been suggested that some variables may need to be deleted and others added. However, it is difficult to reconcile the reversal of the findings obtained in the present study when they are compared to other studies which have fairly consistently found results in the predicted directions.

Weaknesses in the instrumentation and methodology of the model also appear to be likely candidates for the lack of support found for the hypotheses. For example, it has been noted that there is some question of the stability of LPC as an enduring measure of leadership styles. If LPC scores do change over a relatively brief period of time a few months, the present results may have been adversely affected. The LPC scores of many of the presidents were not analyzed until a time interval of almost two and one-half months had elapsed. The methodology employed by the model may have also presented some prob-


39 e.g., J. E. Stinson and L. Tracy, op. cit.
lems. Ashour, for instance, notes that "a priori" specification of situational cut-offs has been lacking in most Contingency Model studies. Nevertheless, other studies using the same instrumentation and methodology have obtained predicted results.

It is somewhat difficult to conclude that the present study incorrectly applied the instrumentation and methodology of the model. The scales used were almost identical to those described in the Contingency Model literature. Perhaps the most significant deviation involved the use of subjective measures of effectiveness. Had more "objective" measures been available, the results might have been more in line with those predicted by the model. However, other studies using subjective measures have been more successful. It may be that the criteria of effectiveness used were inappropriate (cf., invalid) or were too general, signaling the need for more specific criteria. Another possibility may be that ratings should have been obtained from more external individuals such as boards of trustees. Whatever the problem, it is apparent that it may be difficult to use the Contingency Model when clear-cut criteria of effectiveness are not available. This does not mean that it cannot be done but, rather, that it is more difficult and increases risk in the reliability of the results.

The fourth possibility, that of sampling bias, must be given some weight in explaining the lack of predicted results. All of the

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41 See e.g., M. M. Chemers and G. J. Skrzypek, op. cit.
42 e.g., V. D. McNamara, op. cit., who used superintendent ratings of principals with the Contingency Model.
results must be interpreted with the caution that some possibility exists that the findings represent chance occurrences. This caveat would hold true even if all of the hypotheses had been supported, since replication serves an important function in research of this nature. However, since the predictions were not totally confirmed, the possibility does exist that the reason may lie with sampling (response) bias.

With these considerations in mind, and without underestimating their importance, several more specific conclusions and recommendations arising from the study deserve attention.

1. As Ashour\textsuperscript{43} and many others have indicated, "a priori" specification of the Contingency Model variables is needed. In the present study, the use of mean and median situational cut-offs produced mixed results. If the variables currently used are continued in further Contingency Model research, a more definitive methodology for specifying cut-offs is needed. As the problem now exists, both normative data and means and medians of obtained distributions are used. It would seem that normative data present the most efficacious method, since a mean or median score on one of the scales used to measure the variables may vary across situations.\textsuperscript{44} Posthuma's\textsuperscript{45} report is a step in this direction of providing normative data.

\textsuperscript{43}A. S. Ashour, op. cit.
\textsuperscript{44}T. R. Mitchell, et al., op. cit.
\textsuperscript{45}A. B. Posthuma, op. cit.
However, one further step seems to be indicated. It would proba-
ably be of great benefit if normative data could be generated accord-
to some taxonomy of organizational parameters. As an example, Postuma reports that the normative cut-off for leader-member relations is 65 for field studies in contrast to "laboratory" studies where he reports a normative score of 67. The weakness of this approach is that it assumes that research is easily categorized as field or laboratory for studying leadership. The score of 65 used in the present study as a cut-off may have been appropriate for the groups Posthuma studied (e.g., business executives, university faculty, post office employees, etc.) but not for college presidents.

Obviously, such data cannot be collected on every occupational group in existence without considerable investment of time and personal and financial resources. However, some type of taxonomic organization of groups might be feasible. For example, future research in developing such a classification might consider such factors as type of product or outcome, hierarchical level, number of subordinates, technology employed, etc. Data could then be collected from organizations exhibiting similarities across such dimensions. Then, if a future study were to be conducted with college presidents, for example, such a taxonomy could be used to determine the appropriate cut-offs. Thus, groups at a particular organizational level with a formal leader working with a certain number of subordinates would be defined as possessing "x," "y," and "z" cut-off points for the three situational

variables.

2. Future research on the intermediate LPC definitely deserves some consideration. However, it may be that more of the flexibility concept associated with intermediates should be studied in relation to high and low LPCs. That is, it might be best to recognize that individuals possessing a totally task- or relationship-orientation are relatively rare. While many persons may be dominated by one orientation or the other, the lesser orientation may be of sufficient importance to justify including both styles in a given individual. Most persons might be seen, then, as possessing some flexibility, although some will exhibit more than others. With this approach, it would be appropriate to speak of "degrees" of effectiveness rather than viewing the term as an all or none type of situation. Thus, while low LPCs may be generally more effective in favorable situations than moderately favorable situations, there may be some situations where the low LPC can still perform effectively without impairing group performance. Viewed in this perspective, intermediate LPCs might more fruitfully be incorporated into the Contingency Model as indicating degrees of flexibility for high and low LPCs, rather than as a separate style.

The fact that the greatest proportion of variance in effectiveness was accounted for by the intermediate LPC presidents provides some support for this notion. Additional research should explore this possibility by utilizing a variety of groups in different organizational settings. Shiflett's suggestion that LPC be considered as

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*S. C. Shiflett, op. cit.*
a unidimensional measure of relationship-orientation seems particularly useful in this regard.

3. Based upon Contingency Model research using experience on a job, it would seem that this represents an important dimension to the model. However, the results of the present study do not support this conclusion since it was found that experience made little difference in testing the hypotheses. As previously implied, care must be taken in defining levels of experience. It would probably be helpful if guidelines could be developed that would describe the various factors which influence the attainment of experience across different jobs. Obviously, such factors as intelligence, work-related training, and similarity of previous positions must be considered.

Had the results of the present study conformed with those previously found with the Contingency Model, a greater number of recommendations would have been made possible for presidents to use. For instance, being aware of their own leadership styles and the point at which these styles become inappropriate for a particular situation, would seem to be most useful.

Because of the lack of predicted results in this area, specific recommendations probably should be more methodological than procedural. It would seem that due to the complexities of a president's job, a relatively large number of years in the job would most likely be required to define a president as experienced. If, for example, six years was the appropriate number, a president initially effective in one situation would conceivably remain effective for six years until the situational favorableness changed with respect to its appropriate-
ness for his leadership style. The same should also hold true for presidents initially ineffective as postulated by the model. According to the model, these presidents should alter their situations to increase their effectiveness.

Nevertheless, since the hypotheses relating to experience were not supported, such recommendations cannot be conclusively made using the results of this study. It would seem, however, that different levels of years to be used in defining experience should be studied in relation to college presidents, since experience will vary from one job to another and between different job occupants. Fiedler and Chemers recognize this problem in stating that:

In the future we may well be able to say how many months or years of experience various types of leaders ought to have before rotation. Until then we must recommend that each organization determine the proper amount of experience for its own managers.

4. The results of the study do appear to indicate that changes should probably be made in the statistical methodology used to test the model. As found with many Contingency Model studies, the correlation coefficients of the present study which were in the predicted

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48 It might be noted, that in the present study, the average presidential tenure was 7.6 years. Since no significant differences were found between the experienced and inexperienced presidents, it might be assumed that, at least for this study, experienced presidents as such might be defined as having at least seven and one-half years.

49 F. E. Fiedler and M. M. Chemers, op. cit., p. 145.
directions, did not achieve statistical significance. The more appropriate methodology would appear to be analysis of variance which can more readily accommodate the natural factorial design of the model. Furthermore, analysis of variance would allow testing of interaction effects upon which the model is predicated. The computed ANOVA's in the present study did reveal some statistically significant interaction effects involving LPC and favorableness—although the predicted direction of effectiveness was not obtained. Nevertheless, the existence of an interaction between leadership style and the situation is untestable with correlational analysis. As Shiflett reported in comparing analysis of variance with correlational methods: "... correlations have substantially outlived their usefulness within the framework of testing the contingency model."

5. One methodological area often neglected in Contingency Model research is the determination of LPC cut-offs. As discussed previously, earlier research has used a variety of different methods to define high and low LPCs. Often these studies use the "extreme group" method in which the upper and lower thirds of the LPC distribution define high and low LPCs. It would seem that the major problem with this approach is that the middle range of scores is neglected. Such research using only extreme scores would be relatively useless in more practical applications. For instance, a consultant could not assist

50 A single exception was for experienced presidents in moderately favorable situations using cabinet perceptions and median situational cut-offs (see TABLE 24).

an individual in this score range to increase his effectiveness with any great degree of reliability.

As indicated with the regression analysis used in the study, the use of median "splits" (which include the intermediate group) produced an increase in the proportion of variance accounted for in effectiveness in comparison to the use of upper and lower thirds. This was especially evident for cabinet perceptions where the use of median cut-offs (i.e., high and low LPCs only) increased the proportion of accounted for variance an average of 13 percent over the extreme group method. Based upon these findings, additional research with the LPC scale might consider concentrating upon only the median split method. To do otherwise might result in a decrease of the predictive validity and practical utility of the model.

6. Perhaps the most clear-cut and unequivocal findings are those pertaining to president and cabinet perceptions of situational favorableness. On the whole, presidents described their situation to be more favorable than did the cabinets in describing the presidents' situation. Also substantiating this finding, to some extent, was the observation that a relatively greater proportion of presidents than cabinets saw the cabinets as being an "interacting" group. Such differences could be symptomatic of potential conflict areas. Implicit in both of these findings might be the proposition that presidents, on the average, see the cabinets as a cooperating team with clearly defined tasks. However, cabinet members apparently do not share this perception. To resolve this potential conflict, presidents might explore methods of developing more participative modes of decision
making where appropriate. If a cabinet feels that, as a group, it should be more interacting than coacting (or just more interacting), steps might be taken to elicit more cabinet input on major issues.

Yet, it may not always be desirable to have complete participation into all areas of presidential decision-making. Circumstances may dictate, for instance, that the quality of a decision would suffer if an attempt was made to achieve consensus.\textsuperscript{52}

From the results obtained pertaining to perceptions of situational favorableness, it is rather difficult to generate specific recommendations. The lack of in-depth questioning involved in using the mail questionnaires restricts such an analysis. Nevertheless, presidents should at least be aware that their views of cabinet situational favorableness may not always coincide with the views of the cabinet members themselves. It would probably be up to the individual presidents and their cabinets to decide if such differences are detrimental to the performance of the president and the cabinet in general.

7. Related to these differences in situational perceptions is the manner in which presidents and cabinet attended to different aspects of situational favorableness in describing the effectiveness of the presidents. As shown by the multiple regression analysis, presidents attend more to the structure of the tasks confronting them, while cabinets attend more to their perceptions of the cabinet leader-

\textsuperscript{52}For a description of a model postulating when and to what extent subordinates should participate in the decision-making responsibilities of a formal leader, see V. H. Vroom and P. W. Yetton, \textit{Leadership and Decision-Making} (Pittsburgh: University of Pittsburgh Press, 1973).
member relations. The second most important variable for presidents was position power but was task structure for cabinets. The least important of the three situational variables for presidents was group atmosphere and for cabinets, position power. This particular ordering of the variables has significance in two important respects.

First, it is evident that the ordering of the variables by cabinets follows the order specified by the Contingency Model, but this is not the case with president perceptions. This finding suggests that Fiedler's inductively derived importance of the three variables may vary across situations and within situations when both leader and member perceptions are used. Without the use of the regression analysis, this finding would not have been evident. It further suggests that "a priori" classification of situational favorableness, based solely upon Contingency Model specifications may be unwarranted and perhaps unwise. A more logical approach might be to define situational favorableness for a given group on the basis of multiple regression analysis of available data. Intuitively, it is appealing to consider that a leader's interpersonal relations with his group may not always be the primary determinant of situational favorableness. Rather, in many situations, such as those described by presidents, the structure of tasks may be more important.

Second, the fact the presidents perceived their task structure to be more highly associated with their effectiveness than do cabinets, has implications for presidents and their cabinets. As discussed previously, it would seem that both apply different criteria in evaluating presidential effectiveness. If these differences can
be identified, as accomplished with the regression analysis, the possibility of at least attenuating disrupting influences is increased. More specifically, if presidents can be made aware that they may be evaluated on the basis of the cabinet leader-member relations perceptions, they might attempt to attend more to this area in order to improve cabinet satisfaction and morale.

A condensation of specific conclusions and recommendations might be presented as follows:

Conclusions

1. The use of different situational cut-offs to describe the Contingency Model variables produced mixed results in terms of the number of octants described and in the amount of support provided for the study hypotheses.

2. Persons scoring in the "intermediate" LPC range may not represent a separate leadership style, distinct from task- or relationship-orientation.

3. As defined in the present study, experienced presidents were not statistically different in rated effectiveness from inexperienced college presidents, across the different LPC levels and favorableness conditions. Apparently, experience did not significantly improve situational favorableness.

4. As presently used, most Contingency Model studies probably employ an inappropriate statistical methodology to test the interaction between leadership style and situational favorableness.

5. The particular cut-off technique used to define levels of LPC will differentially affect the proportion of variance accounted
for in rated leader effectiveness.

6. College presidents view their administrative cabinets as being more of an interacting team, relatively favorable to their influence than do the cabinet members themselves.

7. The specific ordering of the Contingency Model variables, in terms of their importance to the formal leader, may vary as a function of the specific situation involved and the role positions of the persons describing the variables.

Recommendations

1. "A priori" specification of Contingency Model variables is needed. A taxonomy for guiding variable classifications, based upon organizational parameters, seems to be indicated.

2. The notion of viewing an "intermediate" LPC style as a measure of leader flexibility should probably be discarded in favor of varying degrees of high and low LPC flexibility. A more appropriate recommendation may be to view flexibility as occurring within a unidimensional range of relationship-orientation.

3. Guidelines should be developed to more accurately delimit the range of experience and inexperience for different occupational groups and different personality types.

4. Correlational analysis should be discarded as a methodology to test Contingency Model postulations between leadership effectiveness and different types of situations. Factorial analysis of variance would be the appropriate technique to test for style and situational interactions.
5. If both high and low LPC levels are used in future Contingency Model research, the "median split" of the obtained LPC distribution should be used if normative LPC data are not available for a particular group.

6. College presidents may want to explore methods of reducing potential or existing conflict within the cabinet which may arise from differences in perceptions between presidents and their cabinet members. Future research in this area might investigate the social influence processes operating within cabinets. The use of case studies would seem to be an appropriate beginning.

7. The inductive ordering of the importance of the Contingency Model variables might be discarded in favor of situation specific determinations. Step-wise multiple regression analysis would appear to be most useful to determine the importance of the variables within and across different settings.

A Final Comment

As a final note, it might be observed that the study of leadership rarely results in the ability to account for a very large proportion of the variance in leader effectiveness. Based upon primarily objective output criteria, Fiedler and Chemers report that the average variance in effectiveness accounted for in the Contingency Model is about 25 percent. This means that roughly 75 percent of the variance in effectiveness would remain unaccounted for.

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F. E. Fiedler and M. M. Chemers, op. cit., p. 94.
In the present study, president perceptions of the situational variables plus their LPC scores accounted for 15 percent of the variance while cabinet perceptions accounted for 46 percent. This discrepancy, by itself, is quite remarkable. As discussed previously, the only logical explanation would seem to be that presidents are characterized by less halo error in associating situational perceptions with effectiveness ratings. Nevertheless, a substantial proportion of the variance for cabinets and especially for presidents is unaccounted for in the situational descriptions.

What this would seem to indicate is that the Contingency Model variables may function more as minor intervening variables than major moderating ones—a notion shared by Ashour. Future research on the model might be best directed to consider the inclusion of other variables. Before proceeding in this direction, it might first be worthwhile to consider modifying the variables presently used. For example, task structure uses only four of the many dimensions originally developed by Shaw. The addition of other dimensions to this one variable could conceivably improve the predictive validity of the model.

For the study of college presidents, no one leadership model can be expected to increase the performance of presidents 100 percent. The basic conceptual framework of the Contingency Model, with some

54 A. S. Ashour, op. cit., p. 351.
55 M. E. Shaw, op. cit.
modifications, however, seems to offer great promise in studying how to improve, to some extent, a president's effectiveness. The next logical step in investigating presidential leadership styles would appear to be to refine the model and then to conduct in-depth case studies of presidents and their cabinets across a variety of different colleges involving differences in size, purpose, control, number of hierarchical levels, etc. More information is also needed on the role expectations of both presidents and their cabinets in relation to each other. Furthermore, research on the administrative cabinet as a policy-making and/or problem-solving body is needed. Until then, current differences in how presidents define cabinet functions restrict the generalizability of inferences drawn from studying the leadership process inherent in administrative cabinets.
APPENDICES
APPENDIX A

LEAST PREFERRED CO-WORKER SCALE

The following scale consists of words which are opposite in meaning. Think of all of the persons with whom you have ever worked. Now, using the words below, describe the one person with whom you can work least well, by circling one of the numbers between each pair of words. He or she may be someone you work with now, or someone you worked with in the past. Do not necessarily think of someone you like least well, but someone with whom you have experienced the most difficulty in getting a job done.

Each number represents how well the adjective fits the person you are describing. Look at both words of the line before you check your response. Please do not omit any items and mark each item only once. There are no right or wrong answers.

<table>
<thead>
<tr>
<th>Pleasant</th>
<th>8 7 6 5 4 3 2 1</th>
<th>Unpleasant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friendly</td>
<td>8 7 6 5 4 3 2 1</td>
<td>Unfriendly</td>
</tr>
<tr>
<td>Rejecting</td>
<td>1 2 3 4 5 6 7 8</td>
<td>Accepting</td>
</tr>
<tr>
<td>Helpful</td>
<td>8 7 6 5 4 3 2 1</td>
<td>Frustrating</td>
</tr>
<tr>
<td>Enthusiastic</td>
<td>8 7 6 5 4 3 2 1</td>
<td>Unenthusiastic</td>
</tr>
<tr>
<td>Tense</td>
<td>1 2 3 4 5 6 7 8</td>
<td>Relaxed</td>
</tr>
<tr>
<td>Distant</td>
<td>1 2 3 4 5 6 7 8</td>
<td>Close</td>
</tr>
<tr>
<td>Cold</td>
<td>1 2 3 4 5 6 7 8</td>
<td>Warm</td>
</tr>
<tr>
<td>Cooperative</td>
<td>8 7 6 5 4 3 2 1</td>
<td>Uncooperative</td>
</tr>
<tr>
<td>Supportive</td>
<td>8 7 6 5 4 3 2 1</td>
<td>Hostile</td>
</tr>
<tr>
<td>Boring</td>
<td>1 2 3 4 5 6 7 8</td>
<td>Interesting</td>
</tr>
<tr>
<td>Quarrelsome</td>
<td>1 2 3 4 5 6 7 8</td>
<td>Harmonious</td>
</tr>
<tr>
<td>Self-Assured</td>
<td>8 7 6 5 4 3 2 1</td>
<td>Hesitant</td>
</tr>
<tr>
<td>Efficient</td>
<td>8 7 6 5 4 3 2 1</td>
<td>Inefficient</td>
</tr>
<tr>
<td>Gloomy</td>
<td>1 2 3 4 5 6 7 8</td>
<td>Cheerful</td>
</tr>
<tr>
<td>Open</td>
<td>8 7 6 5 4 3 2 1</td>
<td>Guarded</td>
</tr>
</tbody>
</table>
The following bi-polar adjectives might be used to characterize the general atmosphere of the administrative cabinet. In terms of your own past experiences with the president and the other cabinet members, describe the general atmosphere of the cabinet by circling the one number most appropriate for each set of adjectives. Again, there are no right or wrong answers.

<table>
<thead>
<tr>
<th>Adjective</th>
<th>8</th>
<th>7</th>
<th>6</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friendly</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Accepting</td>
<td>6</td>
<td>7</td>
<td>5</td>
<td>6</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Frustrating</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>Enthusiastic</td>
<td>8</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Nonproductive</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>Cold</td>
<td>8</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Uncooperative</td>
<td>6</td>
<td>7</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Supportive</td>
<td>8</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Interesting</td>
<td>8</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Unsuccessful</td>
<td>8</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

Unfriendly
Rejecting
Satisfying
Unenthusiastic
Productive
Warm
Cooperative
Hostile
Boring
Successful
APPENDIX C
PRESIDENTIAL TASK STRUCTURE SCALE

The following questions represent four dimensions which might be used to classify or rate the task structure of the president's job. As used here, "task structure" is defined as the extent to which the tasks of the presidency are programmed in a step-by-step fashion. In other words, is the president faced with "clear" or "ambiguous" tasks?

Please record your perception of the president's job by circling one of the numbers following each question listed below.

1. To what extent are the general requirements (typical tasks) of the president's job clearly known to him or her? Ask yourself how clear what the president is supposed to do is to him or her. Do not consider how the president is to perform.

Not at all 1 2 3 4 5 6 7 8 Completely

2. To what extent can the problems of the president's job be solved by a variety of procedures? Think of how the president is supposed to do his or her job. How many different ways are there for the president to accomplish a goal?

Not at all 1 2 3 4 5 6 7 8 Completely

3. To what degree would it be possible for persons who might evaluate the president's job to know whether his or her job has been done "correctly" or not? Do data or other sources of information exist so that the "correctness" of presidential decisions or solutions can be ascertained?

Not at all 1 2 3 4 5 6 7 8 Completely

4. To what extent is there generally more than one "correct" solution involved in tasks which typically make up the president's job? Some tasks, e.g., arithmetical problems, have only one acceptable solution. Others have an almost infinite number of solutions. For example, consider human relations problems.

Completely 1 2 3 4 5 6 7 8 Not at all
APPENDIX D
PRESIDENTIAL POSITION POWER SCALE

The following items are designed to measure the formal position power inherent in the president's job when working with the administrative cabinet. "Position power" is defined as the potential residing in the president's position which could enable him or her to exert formal authority over you and the other cabinet members. Of specific concern are the sanctions which are officially or traditionally at the president's disposal and the degree to which his or her formal authority is supported by the institution.

Please circle the one number to the questions below which best characterizes your response.

1. Can the president recommend "rewards and punishment" of cabinet officers to the trustees or board of regents?
   Completely 1 2 3 4 5 6 7 8 Not at all

2. Can the president "punish or reward" cabinet officers on his (or her) own?
   Completely 1 2 3 4 5 6 7 8 Not at all

3. Can the president recommend promotion or demotion of cabinet officers?
   Completely 1 2 3 4 5 6 7 8 Not at all

4. Can the president promote or demote cabinet officers on his own?
   Completely 1 2 3 4 5 6 7 8 Not at all

5. Does the president's expertise of information (or members' lack of it) permit him to decide how tasks are to be done and how cabinet members are to proceed on their jobs?
   Completely 1 2 3 4 5 6 7 8 Not at all

6. Can the president give cabinet officers a general idea of what they are to do?
   Completely 1 2 3 4 5 6 7 8 Not at all

7. Can the president tell or instruct cabinet officers on what they are to do in relation to their specific responsibilities?
   Completely 1 2 3 4 5 6 7 8 Not at all

8. Is it an important part of the president's job to evaluate the performance of the cabinet officers?
   Completely 1 2 3 4 5 6 7 8 Not at all
9. Is it an important part of the president's job to motivate the cabinet officers?

Completely 1 2 3 4 5 6 7 8 Not at all

10. Does the president have a great deal of knowledge about the jobs of the cabinet officers but requires the cabinet officers to do them?

Completely 1 2 3 4 5 6 7 8 Not at all

11. Does the president possess authority to evaluate the jobs of the cabinet officers?

Completely 1 2 3 4 5 6 7 8 Not at all

12. Is the president able to influence the cabinet officers to comply with and accept his direction and leadership?

Completely 1 2 3 4 5 6 7 8 Not at all

13. Are the president's compliments to cabinet officers more appreciated than compliments from other cabinet officers?
APPENDIX E
PRESIDENTIAL RATING FORM

The following items are designed to measure your perception of how effective the president is in exercising leadership with you and the other cabinet members as a group or individually. Please circle the one number which best describes the performance of the president in the particular area involved.

To what extent is the president effective as a leader of the cabinet in matters concerning general:

1. Institutional campus planning?
   Very Effective 1 2 3 4 5 6 7 8  Relatively Ineffective
2. Institutional budgetary decisions?
   Relatively Ineffective 8 7 6 5 4 3 2 1 Very Effective
3. Institutional academic decisions?
   Very Effective 1 2 3 4 5 6 7 8  Relatively Ineffective
4. Institutional fund-raising activities?
   Relatively Ineffective 8 7 6 5 4 3 2 1 Very Effective
5. Institutional policy decisions in general?
   Very Effective 1 2 3 4 5 6 7 8 Relatively Ineffective
APPENDIX F

BACKGROUND INFORMATION AND CABINET CLASSIFICATION

Please check the appropriate space or provide information where necessary.

1. Age: _______
2. Sex: Male _______ Female _______
3. Race: White _______ Black _______ Other _______
4. Present position: __________________________________________
5. Number of years in present position: _______
6. Have you previously held your present position at another institution? Yes _______ No _______
7. If you answered "Yes" to question number 6:
   a. years in previous position: _______
   b. size of previous institution: _______
8. If you answered "No" to question number 6:
   a. previous position: _______________________________________
9. College or university presidents often tend to work with relatively small groups which may be characterized as "administrative cabinets". It may be possible to classify these groups in three ways. Please check which of the following best describes, in general, the administrative cabinet of which you are a part. (You may check one or any combination of the three choices.)
   a. a group in which the performance of the group is dependent upon the members cooperating together to solve problems or tasks (an "interacting" group) _______
   b. a group in which the members independently work on tasks in their specialty area (a "coacting" group) _______
   c. a group in which the members appear to be negotiating with one another to achieve a personal goal or a goal of another group they may represent (a "counteracting" group) _______
Dear Sir or Madam:

Very little valid information is presently available which presidents might use to strengthen their relationships with their senior administrative officers. My concern is to help generate information which may be useful to presidents in working with, what might be termed, their "administrative cabinets". In this respect, I propose to examine how different presidential leadership styles interact with situational factors within administrative cabinets. A secondary purpose is to compare presidential perceptions of cabinet situational elements with perceptions of the cabinet members.

The enclosed instruments have been designed as a result of over twenty years of leadership research. By using these instruments, it should be possible to increase our knowledge about such questions as: how presidents can increase their effectiveness by altering certain situational elements and, why years of experience in a particular presidency are not always beneficial for different leadership styles.

I would be grateful if you could take approximately ten or twelve minutes to assist me in this research endeavor. I am not interested in your own or any particular leadership style. Rather, it is my purpose to study presidential styles (and their interaction with cabinets) as a whole. Thus, all data collected will be treated confidentially and in the aggregate.

I would like to ask you to forward the enclosed three white questionnaires to senior administrative officers in charge of financial affairs, academic affairs, and development activities. A self-addressed, postage-paid envelope has been enclosed in each questionnaire for the convenience of yourself and the three cabinet officers in returning the questionnaires.

If you would like a summary of the findings of the study, please check in the space provided on the last page of your questionnaire.

Sincerely,

Arthur B. VanGundy
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