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THE UNIVERSITY OF ALBERTA

BUREAUCRATIC CHARACTERISTICS IN EDUCATIONAL  
ORGANIZATIONS AND THEIR RELATIONSHIP TO THE  
LEADER BEHAVIOR OF THE SUPERINTENDENT

BY



GEORGE EDWARD RICHERT

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES  
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UNIVERSITY OF ALBERTA  
FACULTY OF GRADUATE STUDIES

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "Bureaucratic Characteristics in Educational Organizations and Their Relationship to the Leader Behavior of the Superintendent" submitted by George Edward Richert in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

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## ABSTRACT

The purpose of this research was to investigate the relationship between the degree of bureaucratization of a school system and the leader behavior of the superintendent. In addition, an attempt was made to refine the bureaucratic model as it relates to educational organizations.

Completed returns were received from 282 school principals in 28 different school systems in the province of Saskatchewan, from 25 central office staff members in 3 different systems, and from 32 superintendents.

The Organizational Structure Questionnaire was used to measure the bureaucratic structure of the school systems studied. The Leader Behavior Description Questionnaire was used to determine the leader behavior of the superintendents involved.

School systems differed significantly in the extent to which they displayed the bureaucratic characteristics of centralization, role performance, standardization of procedures, and the total score. These characteristics were significantly and positively linked to each other giving rise to the conclusion that bureaucracy, as the term applies to the internal structure of school systems, is not a multidimensional concept.

School systems in which the superintendent was the chief executive officer of the school board were found to

have significantly higher degree of bureaucratization than systems in which this was not the case.

Both the consideration and initiating structure dimensions of leader behavior differentiated between superintendents. It was found that superintendents who were chief executive officers had significantly higher scores on both dimensions than those who were not.

Bureaucratization showed a strong positive relationship to initiating structure. It also showed a significant negative correlation to consideration, except in those systems where the superintendent was not the chief executive officer.

The findings of this research support the conclusion that bureaucratic structure in school systems is unidimensional, if restricted to the characteristics identified in this study.

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## CHAPTER I

### THE PROBLEM

#### I. INTRODUCTION

The importance of organizations in society today has led many social scientists to place considerable emphasis on the analysis of various aspects of organizations, and of the subgroups or individuals within organizational structures. The purpose of this study was to examine bureaucratic tendencies in school systems, and the accompanying leader behavior exhibited by superintendents.

The theoretical framework, developed in the following chapter, utilizes basically the bureaucratic model as developed by Weber, and the leadership theories developed by Halpin.

To some extent this study may be considered exploratory. The use of the bureaucratic model in the study of educational organizations is relatively limited, and there is virtually no research indicating its applicability to school systems.<sup>1</sup> On the other hand, considerable research of the leader behavior of educational

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<sup>1</sup>A school system will be defined in this study as all schools under the jurisdiction of a school board.

leaders has been reported. The study reported here was conducted in the province of Saskatchewan utilizing urban school districts which employ a superintendent as their chief executive officer, and larger rural school units where the superintendent is employed by the Department of Education.

## II. THE FORMAL ORGANIZATION

Formal organizations have been defined in a variety of ways. Barnard regards an organization as an impersonal structure for coordinating the efforts of a number of people with the purpose or goal being the unifying principle (1:95).

There are several features which are common to all formal organizations. These are:

- (1) They promote the coordination of effort of people engaged in a particular task through a system of communications and some method of control. This feature is seen in all theories of organization.
- (2) There is a division of labor and specialization by tasks.
- (3) A central source of authority, whether it is one man or a group of men, is characteristic.
- (4) By institutionalizing tasks in role and

status positions the organization becomes less dependent upon any one person.

- (5) There is a hierarchical authority structure which delimits the lines of decision-making.

### Internal Structure -- Bureaucracy

The bureaucratic structure as conceived by Weber is one characterization of the formal organization pattern. Blau has defined it as: "The type of organization designed to accomplish large-scale administrative tasks by systematically coordinating the work of many individuals..." (3:14). Ideally, bureaucracy demands from its members consistency, loyalty, and adaptability (8:40). The theoretical model which will be used as a basis for this study is a multidimensional model developed by R. H. Hall. It emphasizes:

- (1) A well-defined hierarchy of authority.
- (2) A division of labor.
- (3) A system of rules relating to the duties and rights of positional incumbents.
- (4) Procedural specification designed to deal with work situations.
- (5) Impersonality of interpersonal relationships.
- (6) Selection for employment and promotion based upon technical competence (5).

The applicability of this model to a school system

appears to be easily demonstrated. There are several levels of authority: the central office administrative staff, the administrative staff in each school, the teaching staff, and the pupils. The duties and rights of people occupying certain positions may be defined by traditions and may also be supported by system policy statements. This also applies to procedures relating to work situations. The impersonality of superior-subordinate relationships and of interactions between organization and non-organization members is based on the premise of impartial treatment for all. The interpersonal relationship between the superintendent and a principal will be similar to the superintendent's relationship with any other principal. Ideally, labor is divided among participants on the basis of functional specialization, although principals will all have similar duties. Finally, promotion to the rank of principal is based on an assessment of the individual's work and potential. In other words, it is based on competence.

### Leadership

Pfiffner and Presthus have defined leadership as:

... the art of coordinating and motivating individuals and groups to achieve desired ends.... Leadership is often contrasted with command; the former requires intuitive judgement and exhortation, whereas the latter involves authority and the securing of consent by virtue of formal power and sanctions (8:92).

In formal organizations, leadership and command are usually unified. Leaders have an institutional position and the status and authority accompanying this position become a part of their leadership role. Leadership, then, may be defined as the capacity of an individual either to direct or influence the actions of others in the attainment of some goal.

The question is "how" does he coordinate and motivate individuals to achieve desired ends? Leadership may be viewed as being associated with two main aspects of the organization -- the formal or nomothetic and the personal or idiographic (4:113-130). Is the leader concerned with structuring the organization and in getting the job done; or does he concentrate on the development of a warm relationship between himself and members of the group? These two aspects of leadership will be referred to as "initiating structure" and "consideration" respectively (infra., p.23 ).

In summary, this study examines the relationship between the bureaucratization of a school system and the leader behavior of the educational leader.

### III. PROBLEMS AND HYPOTHESES

An examination of the literature suggested a relationship between bureaucratization of a school system and the leader behavior of the superintendent. Having

drafted the hypotheses, it seemed advisable to verify two assumptions. These were:

- (1) School systems will differ significantly in the extent to which they are bureaucratized, and,
- (2) Superintendents will differ significantly on the dimensions, initiating structure and consideration, of leader behavior.

Basically, then, the problem was to determine the relationship between bureaucratization of the school system and the leader behavior of the superintendent.

Hypothesis 1. There will be a significant relationship between the bureaucratization of a school system and the initiating structure dimension of the superintendent's behavior.

Hypothesis 2. There will be a significant inverse relationship between the bureaucratization of a school system and the consideration dimension of leader behavior.

#### IV. SIGNIFICANCE OF THE PROBLEM

There have been many studies which have analyzed educational organizations, but only Moeller has reported research which has attempted to apply the Weberian bureaucratic model to a school system (7). Hall devised



an instrument which was designed to measure bureaucratic characteristics of a business organization (5). MacKay (6) adapted the instrument and used it in Alberta junior high schools. It has been revised further and used in several studies during recent years (infra., p. 18). However, these studies were all concerned with "a school" or a number of individual "schools". This study verifies the empirical applicability of the bureaucratic model to a school system.

In this study, the term "bureaucracy" refers to the internal organizational structure which governs operation of the organization. The results of this study give added information to this particular meaning of bureaucracy.

A review of the literature indicates a relationship between the dimensions of leader behavior and bureaucratization of a system. An empirical investigation seemed to be a useful technique to attempt to verify the existence of this relationship.

Many persons regard the superintendent as an important person in an educational organization. Research projects involving superintendents and the setting in which they function can provide useful information for organizational operation.

## V. OVERVIEW OF THE REPORT

The first chapter included a statement of the problem, a brief discussion of the significance of the study, and a statement of the hypotheses. Chapter II outlines the analysis of the problem by means of a review of the pertinent background literature. Chapter III is devoted to the design and procedures of the study, as well as an indication of the statistical methods utilized. Chapter IV to VI examine and discuss the results of the study. A summary of findings, conclusions, and implications for further research is included as the final chapter.

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## CHAPTER II

### ORIGIN OF THE PROBLEM

#### I. THE BUREAUCRATIC MODEL

##### Theoretical Development

Blau has defined bureaucracy as: "The type of organization designed to accomplish large-scale administrative tasks by systematically coordinating the work of many individuals..." (2:14). Weber provided the classical analysis of the ideal-type concept of the bureaucratic model. Neffzger, in writing about Weber and the "ideal", stated:

For Weber, the ideal type is a mental construct formed by the synthesis of many diffuse, more or less present, and occasionally absent, concrete individual phenomena arranged according to certain one-sidedly accentuated points of view, into a unified analytical construct, which in its conceptual purity cannot be found in reality (31:166).

Furthermore, the "ideal" elements which Weber included were rationally and logically selected from "non-ideal" situations. The bureaucratic model was merely the logical result of the evolution of social organization. Weber saw as common to all organizations the need for efficiency in terms of productivity and input (43:18-27). He formulated a construct of formal organizations and suggested that the following major characteristics were shared by such organizations:

- (1) There is the principle of fixed and official jurisdictional areas, which are generally ordered by rules, that is, by laws or administrative regulations.
- (2) The principles of office hierarchy and of levels of graded authority mean a firmly ordered system of superordination and subordination in which there is a supervision of the lower offices by the higher ones.
- (3) The management of the modern office is based upon written documents (the files), which are preserved in their original or draught form.
- (4) Office management, at least all specialized office management -- and such management is distinctly modern -- usually presupposes thorough and expert training.
- (5) When the office is fully developed, official activity demands the full working capacity of the official, irrespective of the fact that his obligatory time in the bureau may be firmly delimited.
- (6) The management of the office follows general rules, which are more or less stable, more or less exhaustive, and which can be learned.  
(42:196-198)

One of the virtues of bureaucracy, as Weber saw it, was the emphasis upon rationality and administrative efficiency.

In functional analysis, social structure is explained by illustrating how every element contributes to its persistence and effective operation. Blau, however, points out that in trying to discover these contributions the scientist may overlook the disruption caused by the elements (3:6).

Weber believed that the purely technical superiority of the bureaucratic organization over any other form was the reason for its advance (43:214). He listed some of the technical advantages: precision; speed; continuity; unity; discretion; strict subordination; knowledge of life; reduction of friction, and of personal and material costs (43:215). Weber asserted that these advantages are raised to the optimum point in bureaucratic administration. Blau states that bureaucratic organization, utilizing principles of office hierarchy and levels of authority, approaches tasks with an impersonal and rational orientation (2:1).

One of the characteristics which encourages the formation of a bureaucratic structure is that of size. This does not imply that a small organization cannot be bureaucratic or that a large one must be so. Presthus suggests that size may not be synonymous with bureaucratic organization, but that administrative problems on a large scale tend to lead to bureaucratization (32:32). Blau appears to concur with the view since, in his opinion, bureaucracies are mechanisms for executing large-scale administrative tasks (2:37).

In the last decade or two, organization theorists have been studying the dysfunctional aspects of the concept or unanticipated responses made by organization members. The works of Gouldner (12), Merton (27) and

Selznick (36) in particular aid clarification of the concepts in the Weberian model. Merton emphasized the internal strains and stresses of a bureaucratic structure and called them dysfunctions. Some of these are: over-categorization, inflexibility, conflict with clientele, trained incapacity, and over-conformity.

Gouldner's model is concerned with "demand for control" which in turn leads to an increase in supervision. This in turn may have certain of the above unanticipated consequences. Control, in this model, is obtained by the use of general and impersonal rules. In Selznick's model, control at the top is sought by delegation of authority. One of the intended results of increased delegation of authority is the increased amount of training in specialized competences which will occur. One of the unintended consequences will be the bifurcation of interests among the subunits of the organization which in turn leads to increased internal conflict because of the exclusion of over-all goals brought about by emphasis of sub-goals.

Merton has described the manner in which bureaucratic structure produces over-conformity (27:366).

- (1) An effective bureaucracy demands reliability of response and strict devotion.
- (2) Such devotion to rules leads to their transformation into absolutes; they are

no longer conceived as relative to a given set of purposes.

- (3) This interferes with ready adaptation under special conditions not clearly envisaged by those who drew up the general rules.
- (4) Thus, the very elements which conduce toward efficiency in general produce inefficiency in special instances.

Despite the dysfunctions which the bureaucratic model might produce, Grusby is of the opinion that bureaucratized systems are effective (14:267), because they are able to control disruption by rational means.

A bureaucratized organization will have certain characteristics, which will have both functional and dysfunctional aspects (44:330-337).

First, there is a hierarchical authority structure to ensure a unified and precise command. Higher offices are charged with decision, supervision, and responsibility. Lower offices are given the duty to perform effectively their assigned tasks and the right of appeal. Ideally, it is necessary to separate the formal position from the person who occupies it if the organization is to be impersonal and retain its original form.

Second, there is a clear cut division of labor and a specialization by tasks. Since each individual is an expert he is responsible for the effective discharge of his duties. Although our society demands expertise in many situations, it is a necessary concomitant to



increased production and bureaucratic rationality.

Third, a formal system of rules and regulations is standardized for the entire organization. The behavioral responsibilities and relationships of each of the positions within the hierarchy are delineated, formalized, and enforced.

Fourth, in order to ensure uniformity of organizational operation and individual task performance, a system of standard procedures is established. This must be consistent with the system of rules and regulations.

Fifth, in order for decisions to be rational and efficient, they must be made on an impartial basis. This necessitates an impersonal detachment which permits impartial treatment of members and non-members alike. It also fosters a degree of equitability and democratic fairness which cannot be achieved in any other way. Thus, the bureaucrat is actually fostering the interests of people, or at least the interests of a competitive society.

Sixth, to ensure the rationality and efficiency of the organization, the method of selecting members to enter the organization, and the system of promotions is based upon an objective evaluation of their technical qualifications, professional abilities, experience and achievement.

The foregoing six characteristics have been redefined and classified by Pugh (33:301-307). He

refers to them as structural variables and describes them as operationally defined scales.

First, specialization refers to the division of labor within the organization. The two aspects are the number of specialisms, and the degree of role specialization.

Second, there will be standardization. This is concerned basically with procedures and roles. Standardization of procedures is concerned with decision seeking, decision making, conveying of information, and operational procedures. Standardization of roles is related to the degree to which the organization describes role definition and qualification for office, role performance measurements, titles for office and symbols of role status, and rewards for role performance.

Third, formalization distinguishes to what extent communications are expressed in writing. This can include statements of procedures, rules, roles, and operation of standardized procedures.

Fourth, centralization of authority is related to decisions affecting the organization. Centralization involves control of resources and control of activities. The first measure of centralization is the rate of restriction of control -- control disappears as one moves away from the central office.

Fifth, there will be a configuration of authority. Basically, this dimension is concerned with authority relationships most often described by an organization chart.

Sixth, flexibility involves changes in organizational structure.<sup>1</sup>

### Research Findings

Hall developed an instrument which was designed to measure to what extent the above characteristics existed in business and governmental organizations (16). His theoretical contention was that bureaucracy is a series of dimensions, each in the form of a continuum. When each is measured, no concomitant variation will be found among the other dimensions. He suggested that the bureaucratic concept is more empirically valid when approached in this manner rather than assuming that organizations are totally bureaucratic or non-bureaucratic.

His findings substantiated the contention that organizations which were highly bureaucratic on any one dimension were not necessarily so on the other dimensions (16:34). As a result of his study, Hall concluded that

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<sup>1</sup>In order to derive meaning from the factor analysis of pilot study data, three of the above variables were utilized. These were centralization, formalization, and standardization. However, standardization developed into the two areas mentioned, that of roles and procedures (infra, p. 134 ).

the characteristics of a bureaucracy, as Weber saw them, should not be considered empirical absolutes, but as characteristics which are present to varying degrees among various organizations (16:38).

MacKay adapted Hall's instrument and used it in Alberta Junior High Schools (22). Upon further revision, Robinson used it in British Columbia schools (35). Mansfield took a somewhat different approach and devised an instrument designed to measure bureaucracy as a global dimension (25).

The scale used by MacKay (22) measured six bureaucratic dimensions: hierarchy of authority, specialization, rules for members, procedural specifications, impersonality, and technical competence. The analysis of data, provided by teacher responses, showed significant differences among the schools in the sample on four of the six subscales and the total scores. The exceptional subscales were procedural specification and technical competence (22:89). Also, intercorrelations among dimensions showed significant negative correlations between technical competence and the other five dimensions.

Robinson, using an adaptation of MacKay's scale, found significant positive correlations between four subscales: hierarchy of authority, rules for members, procedural specifications, and impersonality. Correlations between the other two subscales, specialization and

technical competence, were also positive and significant. But, correlations between the first four above and the last two were negative and significant (35:118).

Punch, using basically the same instrument as Robinson, conducted a study in fifty Ontario schools in which he related bureaucratic structure in schools and its relation to the leader behavior of the principal (34). His first general conclusion was that bureaucratic structure in schools can be conceptualized as a unitary, homogeneous variable if restricted to include hierarchy of authority, rules for incumbents, procedural specifications, and impersonality (34:193). The intercorrelations between pairs of these four subscales were significantly positive (34:100).

In his study, Punch suggested that school size was positively related to bureaucratization. This hypothesis was refuted by a significant negative correlation of  $-.35$  (34:117).

Mansfield, by a review of the literature on bureaucracy, developed one hundred and twenty-one items. These were reduced to seventy on the basis of close scrutinization and discussion. The analysis of data was conducted on two hundred and ninety-four teacher completed questionnaires. Again, the organizational unit was the school. These items were then subjected to discrimination and correlational analysis, thus reducing the number to

forty-five. A factor analysis indicated that a five factor arrangement was the only one which provided meaning and also retained all the items. Mansfield concluded that the five bureaucratic factors or dimensions made sense only when interpreted in the light of hierarchical authority. Also, the considerable number of high "secondary" loadings indicated that the factors were closely related. Therefore, he adopted the unidimensional approach (25:63-73).

Moeller reported a study which investigated the relationship between teacher powerlessness and the bureaucratic structure of school systems. The major hypothesis was that teachers in highly bureaucratic school systems would feel powerless. This hypothesis was not supported. In fact, the opposite result was reported to be the case (30:146).

## II. LEADERSHIP

### Theoretical Development

Stogdill states the need for leadership in the following excerpt:

The demand for leadership is created by the fact that situational, material and personnel shortages, limitations on human performances, fluctuations in human motivations, blockings of communications, and conflicts in personnel interaction, as well as a large variety of other variables, operate to disrupt the model structure of performance and interaction as represented by organizational charts. The leader in any

actively operating organization is constantly confronted by discrepancies between the demands of organization and the performance of organization. This means that the leader is concerned with the coordination (restructuring) of interaction and performances as necessary in order to accomplish the tasks at hand (41:3).

During recent years there have been attempts to develop a framework which would explain how personal qualities interact with situational demands to produce certain styles of behavior in the leader of an organization. This behavioral aspect of leadership is often referred to as "leader behavior". Hemphill and Coons define leadership as: "... the behavior of an individual when he is directing the activities of a group toward a shared goal" (20:7). The definition is construed as including behavior of a positive and social context, but excluding that serving only the attainment of the individual's goals.

When discussing the behavior of an individual within an organizational context, the concept of "role", "role expectation", and "role performance", must be considered. The formal organization attempts to define patterns of reciprocal behavior for its members through rules and regulations (38:4-5). Organizational stability results by virtue of the fact that members exhibit predictable patterns of performance.

Stogdill asserts that role conflict and confusion

arise from lack of clarity in role definition, differences in the perception of a role by self and others, and differences in the demands and expectations made upon a role by various persons and subgroups in the organization (40:141). From this it follows that the higher the status the more complex the conflict since the incumbent then represents more groups. Hence, an organization must effect the convergence of definitions into a stable pattern.

The problem of role definition is important for both leader and follower since it affects the pattern of interactions and the distribution of work loads. These work loads may be thought of in terms of rules and specializations (38:8). The formal organization provides the base for a set of expectations among members so that each may know to what extent he may rely on the persons with whom he interacts. This is done by defining the rights, duties, and obligations of the members. Organizations are usually hierarchically structured with members at various levels of responsibility and authority. Stogdill defines organizational authority as "... the degree of freedom that the occupant of a position is expected to exercise in initiating performance and interaction within a formally acknowledged structure" (40:129). Delegation is the use of authority to define subordinate roles. Some leaders will seek to exercise a high degree



of control over the activities for which they are responsible while others delegate freely to subordinates.

Leadership, according to Cartwright and Zander, consists of certain universal characteristics which must be supplemented, depending on the situation (6:541).

Hemphill has summarized this by stating that "... a definition of leadership must include both the characteristics of a social situation and the characteristics of an individual" (19:5). He then defines leadership as the behavior of an individual while he is involved in directing group activities.

This behavior has been broken down into two dimensions by the Leader Behavior Description Questionnaire (LBDQ). According to Halpin,

Initiating Structure refers to the leader's behavior in delineating the relationship between himself and members of the group, and in endeavoring to establish well defined patterns of organization, channels of communication, and ways of getting the job done (17:2).

Consideration on the other hand,

... refers to behavior indicative of friendship, mutual trust, respect, and warmth in the relationship between the leader and members of the group (17:2).

### Research Findings

Halpin, in examining the results of early research using the LBDQ, summarized the findings as follows:

- (1) Evidence indicates that Initiating Structure and Consideration are

fundamental dimensions of leader behavior.

- (2) Effective leader behavior is associated with high performance on both dimensions.
- (3) Superiors are more concerned with initiating structure aspects of the leader's behavior, whereas subordinates are more concerned with consideration the leader extends to them as group members.
- (4) High Initiating Structure combined with high Consideration is associated with favourable attitudes and with favourable changes in group attitudes.
- (5) There is only a slight positive relationship between the way leaders believe they should behave and the way in which their group members describe them as behaving.
- (6) The institutional setting within which the leader operates influences his leadership style. (18:22-23)

An Alberta study carried out in 1959 by McBeath entitled "Teacher Leader Behavior and Its Relation to Teacher Effectiveness" used the LBDQ to describe teachers' leader behavior and a global scale to give a single rating of teaching effectiveness (24). McBeath reached the conclusion that the most effective teachers were those who were described as being above the average on consideration and initiating structure behavior. The least effective teachers were those who were described as being below the average on both dimensions of leader behavior. Students also related effective teaching to both consideration and initiating structure dimensions of behavior. There was a tendency for consideration

behavior to be more closely related to rating of effectiveness. Administrators related effective teaching to both consideration and initiating structure, but neither dimension was more closely related to ratings of effectiveness.

A recent article by Dubin gives additional information on the aspect of leadership and organization productivity (7). Dubin claims there is no conclusive evidence which indicates that a high degree of autonomy is essential for individual productivity (7:24-46). However, he does indicate that this phenomenon might be more applicable in certain types of organizations.

Consideration for workers may be characterized as being employee centered. In a comparison of consideration and initiating structure dimensions of supervisory behavior Dubin showed that the relationship between elements such as consideration and grievance rate is curvilinear. A similar but inverse relationship is shown to exist between initiating structure and grievance rate. Studies such as the one conducted by Fleishman, Harris, and Burt do not indicate anything but a linear relationship between the above mentioned variables.<sup>2</sup> (10:100). Dubin suggests

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<sup>2</sup>This was a study which evaluated the leader behavior of factory foremen. The two dimensions of the LBDQ were related to absenteeism, accidents, grievances, and turnover.

that these researchers did not discover the fact that their results indicated that different organizations, and further, different departments within an organization may require different leadership styles. This line of reasoning leads to the suggestion that there could possibly be points of deflection in the curvilinear relationship, and that these points are not necessarily in the same location for all organizations.

To illustrate this point, another example is used from Dubin. Researchers have made statements to the effect that people have a greater feeling of commitment to a decision in which they have had a part in making. Again, Dubin suggests that such relationships are curvilinear rather than linear (7:42). The graph in Figure 1 is an attempt to illustrate this phenomenon. Between points A and B, a relatively small increase in the amount of staff participation in decision making will result in increased commitment. However, up to point A and beyond point B, a similar increase in staff participation will make little difference to commitment.

In other words, Dubin is propounding a "theory of optimization" of leader or supervisory behavior which appears to merit further investigation by studies similar to those done by Keeler (21) and McBeath (24).<sup>3</sup>

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<sup>3</sup>Keeler related pupils' scores on provincial examinations to principal's scores on consideration and initiating structure. McBeath's study related global ratings of teacher effectiveness to both dimensions of the LBDQ.

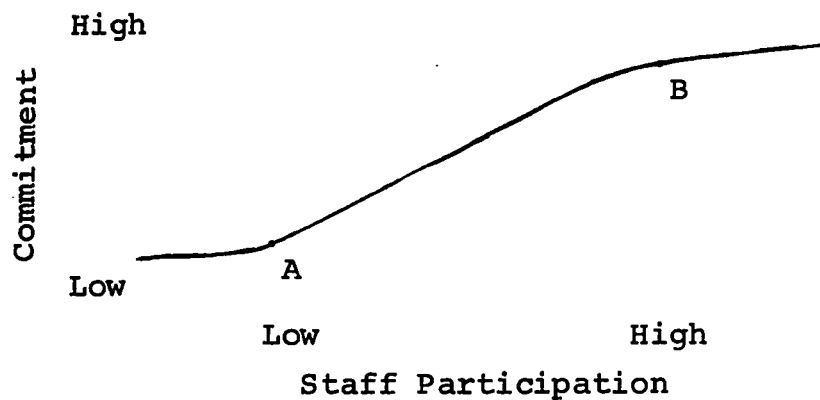


FIGURE 1

#### RELATIONSHIP OF COMMITMENT AND STAFF PARTICIPATION

Punch utilized the LBDQ-XII in his study, but found that the twelve subscales clustered around two factors. These he called "system" and "person orientation" (34:134).<sup>4</sup> He defined system orientation as referring to leader behavior concerned with getting the organization's job done. Person orientation was taken to mean leader behavior directed at the human, social, and professional needs of fellow staff members (34:134). There appears to be little or no difference between person orientation and consideration, or between system orientation and initiating structure (supra, p.23 ).

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<sup>4</sup>Infra, p. 42 . In his 1966 study on Alberta principals, Brown arrived at a similar conclusion (4).

### III. BUREAUCRACY AND LEADERSHIP

The leadership or administration of a bureaucratic organization is based upon the concept of authority.

Blau suggests that actual authority must be established through social interaction and that the official bureaucratic structure merely facilitates this process (2:71-72). He defines authority as:

- (1) a relationship between persons,
- (2) involving the exercise of social control resting on the willing compliance of subordinates with directives of the superior, and
- (3) an observable pattern of interaction (2:70).

Weber emphatically makes the point that legal (rational) authority resides in the position and not in the person.

... obedience is owed to the legally established personal order. It (legal authority) extends to the persons exercising the authority of office under it only by virtue of the formal legality of their commands and only within the scope of authority of the office (44:328).

Getzels defines administration as follows:

Structurally, administration is conceived as the hierarchy of subordinate-superordinate relationships within an institution. Functionally, this hierarchy of relationships is the focus for allocating and integrating roles and facilities in order to achieve institutional goals (11:236).

Any organization having a formal leader will also have a hierarchical arrangement of the membership.

Authority of the higher echelon over the lower is one of the organizational bonds. Etzioni suggests that there is considerable use of identitive power in school systems. Identitive power is derived from the ability to make people identify (8:652). Control in such an "identitive" organization depends to a considerable extent on the personal and technical qualities of the leader. Therefore, there should be a concerted effort to select the most suitable person to fill an important position, such as the chief executive officer from which control is exercised, with someone who can effectively combine positional identitive power (the status of a priest) with personal power (persuasive personality) (8:664-665).

Getzels discusses the dimensions of authority, role and affectivity as they are found in administrative relationships (11:236-240). The authority of leadership is based on superior knowledge and technical competence, and the educational administrator's claim to obedience must be founded on this base.<sup>5</sup> In other words, it is based on rationality. The role of the administrator is functionally specific; that is, his authority is

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<sup>5</sup>Weber agrees with this point of view when he states that: "Bureaucratic administration means fundamentally the exercise of control on the basis of knowledge. This is the feature of it which makes it specifically rational" (44:399).

restricted to certain situations. His approach to dealing with people must be universalistic; the rights and obligations of other persons must be determined on the basis of impersonal factors. Thus, in Getzels' analysis of educational administration the bureaucratic characteristics of specialization, technical competence, and impersonality are quite evident. As well, the hierarchy of authority is specifically mentioned when he speaks of subordinate-superordinate relationships.

Stogdill suggests that the pattern of behavior manifested in given leadership situations would be contingent upon the performance demands, status in the hierarchy, the structure of interaction among members, the responsibility-authority structure, and the performance of organization members (39:1). Here again, some of the classical bureaucratic principles are in evidence -- hierarchy of authority, pattern of relationships which are defined by behavioral roles, and performance of members which is linked to competence.

In applying the classical bureaucratic structure to school systems, one of the counterbalancing factors is the professional basis of activities. Bidwell maintains that the effect is a "structural looseness" of the system. In other words, the sub-units do have a part in determining what services are to be provided and how this is to be done. He adds, however, that since a



reasonably uniform product is expected from all schools there must be a degree of routinization. One way of accomplishing this is bureaucratization of school and school system activities by procedural rules which restrict autonomy (1:976).

The school board is the formal center of power in a school district and the extent to which it exercises its decision making power or delegates it to the superintendent may vary with the specific system. Similarly, within the administrative structure the centralization or decentralization at this level may vary with the specific system.

Of importance to subordinates is the manner in which the superior communicates decisions. In his early research with the LBDQ Halpin found that subordinates were much concerned with consideration extended to them by the leader (18:22-23). In other words, a subordinate desires a superior to be a socially acceptable individual in his interaction with the group members. However, the leader must also retain the respect and allegiance of the group. The experienced administrator realizes that some one must be the boss and that clear lines of relationships, authority, and organization are necessary to proper cooperation.

An Alberta study by McBeath found that the most

effective teachers were those who were described as being above average on both consideration and initiating structure behavior (24). Thus, it is possible for a leader to be both socially accepted and the "boss".

The Ontario study by Punch found that bureaucratization correlated .367 with the leader behavior factor of system orientation, and  $-.660$  with the factor of person orientation. Both of the correlation coefficients were statistically significant at the .01 level (34:148). Moreover, some 57 per cent of the variance in bureaucratization is accounted for by variation in leader behavior (34:150). This led Punch to state that: "Clearly, leader behavior is the most important single variable in the level of school bureaucratization" (34:150).

#### IV. SUMMARY

On the basis of the foregoing theoretical development and the findings of empirical studies, there appears to be a relationship between bureaucratization of an organization and the dimensions of leader behavior. The investigation of this relationship is the main purpose of this study, and the results are presented and discussed in the following chapters.

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## CHAPTER III

### DESIGN AND PROCEDURES

#### I. DATA REQUIRED

All city districts and larger rural school units of administration in Saskatchewan were invited to participate, subject to the following criteria:

- (1) The superintendent must have been in the system for at least one year previous to the current year.
- (2) There must be a sufficient number of respondents. (A minimum of six).

Superintendents were asked to participate and to allow principals to participate. In addition, superintendents in city districts were asked to allow central office instructional personnel to participate.

To investigate the problem the following information was collected: (Appendices A - C, pp. 114-130 ) characteristics of the school system; personal background information about each of the principals, central office personnel, and superintendents involved; the opinions of superintendents as to the degree of bureaucratization of their organization, the opinion of superintendents as to their leader behavior, the principal's and central office personnel's observation regarding bureaucratization of

the system; the principal's and central office personnel's observations as to the leader behavior of the superintendent.

### Characteristics of School Systems<sup>1</sup>

Each superintendent was asked to indicate whether he assigned duties to all other board employees, and if they report to the board through him; the number of schools in the system; the number of teachers in the system; the number of pupils in the system; the approximate area, in square miles, of the area served by the school system; the approximate present population of the area served by the school system.

### Personal Background Information

Each respondent was asked to supply the following information: sex; marital status; years of teaching experience; number of years of academic preparation beyond high school; degree(s) held. Each principal was asked for the following additional information: years of experience as a principal; years in such capacity under present superintendent; if he holds a graduate degree, whether the field of study was educational administration;

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<sup>1</sup>It was not necessary to ask superintendents whether they were employed by the department of education or by local boards since this information was provided by the Department of Education.



grades taught in his school; percentage of time he has free from teaching duties.

Each central office respondent was asked for: years of experience as a supervisor; years in such capacity under present superintendent; if he holds a graduate degree, whether the major field of study was educational administration. Each superintendent was asked for: years of administrative experience; years in present position. (See Appendix C).

#### Data on Organizational Structure

Data were obtained on: the degree of bureaucratization perceived to exist by the principals in each school system; the perception of central office personnel on the same matter; the superintendent's opinion on the same matter.

#### Data on Leader Behavior

Data were obtained on: the principal's opinions of the leader behavior of the superintendent; central office personnel's opinion of the leader behavior of the superintendent; the superintendent's opinion as to his own leader behavior.

## II. INSTRUMENTATION

### The Organizational Structure Questionnaire (See Appendix B)

This instrument was used to measure the degree to

which a bureaucratic organizational structure was observed to exist in each school system.

The forerunner of this instrument was one developed by Hall (3). It had six sub-scores each of which represented the degree of bureaucratization observed to exist along a particular dimension: hierarchy of authority; specialization; rules for incumbents; procedural specification; impersonality; technical competence. Both MacKay (4) and Robinson (8) used this multidimensional approach. Mansfield, on the other hand, devised an entirely new scale based on a uni-dimensional approach. It was his contention that the factors made sense only when interpreted in the light of hierarchical authority (6:70).

All of the above researchers applied the instrument to a "school" or a number of individual "schools". Therefore, in an attempt to convert such an instrument to use on a system basis considerable revision of items was undertaken. For purposes of this proposed study the items used by MacKay (4:189-193) and Mansfield (6: Appendix B) were reviewed and those which were applicable to a school system were selected and reworded.<sup>2</sup> A total

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<sup>2</sup>MacKay calculated reliability coefficients for each of his six subscales. These were: hierarchy of authority -- .90; specialization -- .80; rules for incumbents -- .83; procedural specifications -- .83; impersonality -- .81; technical competence -- .80 (4:47). Mansfield found a reliability coefficient of .89 on the forty-five items he used for analysis (4:69).

of seventy-four items were in this initial scale. A pilot study was then conducted in Alberta in order to refine the instrument for use in the study proper.

On the basis of correlation and discrimination analysis, the seventy-four items were reduced to fifty-three. A number of Varimax rotation factor analyses were applied to the fifty-three items in order to determine if stable clusterings of items, indicative of possible subscales, occurred. Essentially, an analysis of four factors was the one which seemed to provide the greatest degree of meaning. Items were discarded if they had a loading of less than .400 on any factor or if they had loadings of .400 or higher on more than one factor. Thus, thirty-eight items were retained. Twelve "dummy" items were added to these thirty-eight for the final edition of the "Organizational Structure Questionnaire".

The four factors which emerged from the pilot study were identified as centralization, role performance, formalization, and standardized procedures (infra, p. 136 ).

The Leader Behavior Description Questionnaire (See Appendix A)

This instrument provides a technique by which members of an organization describe the behavior of their leader. It was developed at Ohio State University and has a considerable body of supporting research.<sup>3</sup> Stogdill

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<sup>3</sup>Stogdill and Coons (9) cite a number of studies in education, industry, and the armed forces which have used the LBDQ.

has published a new form of the LBDQ called "Form XII". It purports to measure twelve different dimensions of leader behavior including the two identified by Halpin (9). Recently a study was conducted in Alberta under the auspices of the CSA in which descriptions of the leader behavior of one hundred sixty-nine Alberta School Principals were analyzed using Form XII.<sup>4</sup> A factor analysis was conducted and two factors accounted for seventy-six per cent of the total variance. These were identified as "system" orientation and "person" orientation (1). On the surface, they appear to be similar to Halpin's initiating structure and consideration. Therefore, the instrument used in this study was the older form of the questionnaire.

### III. PROCEDURES

From information supplied by the Saskatchewan Department of Education, those larger rural school units of administration and city districts which met selection criteria were included in the potential sample (supra, p. 37). Superintendents in forty-seven jurisdictions were asked to:

- (1) complete the LBDQ on the basis of their perceptions of their own behavior;

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<sup>4</sup>The Council on School Administration (CSA) is an organization of educational administrators in the province of Alberta.

- (2) complete the OSQ on the basis of their perception of the educational organization in their particular jurisdiction;
- (3) complete the background data; and
- (4) permit principals in their area to participate in the study.

In addition, superintendents in city districts were requested to permit central office instructional personnel to participate, provided there were six or more possible respondents.

#### The Sample

Forty-seven superintendents were requested to participate in the study, and to allow personnel in their school unit or district to participate. Thirty-six superintendents consented to participate.<sup>5</sup>

Principals in these thirty-six systems were requested to:

- (1) complete the LBDQ on the basis of their perceptions of their superintendent's behavior;
- (2) complete the OSQ on the basis of their perceptions of the organization in their particular system; and

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<sup>5</sup>All thirty-six superintendents did not complete the material although they did grant permission to contact principals. An attempt was made to get complete information. However, this was not always successful. Complete information from thirty-two superintendents was included.

(3) complete the background information.

Also, central office instructional personnel in three systems were asked to complete information similar to that requested from principals.

The final sample consisted of the required number of returns from twenty-eight of the thirty-six school systems.<sup>6</sup>

Table I indicates the number of principals to whom questionnaires were distributed, and the number which replied. Out of a possible 379 principals, 284, or 75.2 per cent responded.

Table II gives similar information relative to central office instructional personnel. Of a possible 34 respondents, 25, or 73.5 per cent responded.

#### IV. ANALYSIS OF THE DATA

All respondents marked their answers on IBM optical scoring sheets from which the information was transferred to IBM cards.

While only two hypotheses were tested, many statistical tests were carried out on the data. For example, it was necessary to determine that the OSQ and the LBDQ differentiated between school systems before testing the hypotheses.

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<sup>6</sup>The eight areas from which an insufficient number of respondents returned the completed material were omitted from the analysis.

TABLE I  
NUMBER OF POSSIBLE AND ACTUAL PRINCIPALS  
RESPONDING IN TWENTY-EIGHT JURISDICTIONS

Jurisdiction	Possible Respondents	Actual Respondents
1	11	6*
2	8	8
3	12	7
4	10	8
5	8	6
6	11	8
7	8	7
8	11	6
9	8	7
10	16	12
11	9	7
12	8	6
13	9	8
14	10	6
15	10	6
16	12	8
17	14	9
18	11	7
19	9	7
20	16	14
21	6	6
22	54	40
23	27	14
24	38	34
25	21	17
26	9	8*
27	6	6
28	7	6
Total	379	284

\* While this number actually responded, one less respondent in each of two systems was actually used, therefore, the total is 282. These were deleted because of incomplete responses.

TABLE II  
NUMBER OF POSSIBLE AND ACTUAL CENTRAL OFFICE  
PERSONNEL RESPONDING IN THREE JURISDICTIONS

Jurisdiction	Possible Respondents	Actual Respondents
20	11	7
22	9	7
24	14	11
Total	34	25

Existing computer programs were used as follows.<sup>7</sup>

- (1) Factor analysis on both the OSQ and LBDQ.
- (2) Pearson product-moment correlations and t-prime tests on variables associated with both the OSQ and LBDQ.
- (3) One-way analysis of variance across the twenty-eight school systems on each of the subscales and total scores of both the OSQ and LBDQ.

#### Analysis of the Hypotheses

Pearson product moment correlations were used to determine the relationship between bureaucracy scores and the scores on each of the leader behavior dimensions.

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<sup>7</sup> Modifications, where and when necessary, were made by K. S. Bay of the Division of Educational Research Services, University of Alberta, Edmonton.



Step wise regression analysis was also carried out with system, superintendent, and principal characteristics in an attempt to determine the best predictor of bureaucratization.

Because of relatively small samples in several instances, caution should be used in interpretation of results.

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## CHAPTER IV

### ANALYSIS OF DATA: THE ORGANIZATIONAL STRUCTURE QUESTIONNAIRE AND BUREAUCRATIC STRUCTURE OF SCHOOL SYSTEMS

#### I. INTRODUCTION

The problem investigated in this analysis was whether or not the OSQ differentiated among twenty-eight school systems on bureaucratization. A summary of the data obtained is reported in Appendix F.

#### II. FACTOR ANALYSIS

Factor analysis is a term used for a variety of procedures, the aim of which is to explain intercorrelations among variables by means of factors or components within those variables (6:4).

With the pilot study data, a varimax rotation of four factors was found to be most meaningful in terms of the theoretical framework (Appendix D). A total of thirty-eight items were incorporated in these factors.

Using these thirty-eight items and data from the study proper, a number of varimax rotations were applied.<sup>1</sup>

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<sup>1</sup>A varimax rotation maximizes high factor loadings and minimizes low factor loadings across factors and also within each factor (6:301).

At each step the clusterings of items were examined to determine whether items were grouping and regrouping in a predictable and meaningful manner. A "three factor" analysis, illustrated in Table III, provided the greatest degree of meaning.<sup>2</sup>

A similar criterion to that used in the pilot study was applied at this stage. Items were discarded if they did not have a loading of .400 or greater on any factor, or if they had a loading of .400 on more than one factor. Thus, factor I included items 54, 57, 66, 67, 69, 70, 71, 75, 76, 88, and 89. Items 82 and 85, which had been included in factor I of the pilot study, were dropped. Upon close examination of the items retained, it was found that these items conformed rather closely to the definition of centralization (supra, p. 16 ). They appeared to be descriptive of the authority relationship of persons and positions to the central office, particularly the superintendent's office.

Factor II included items 47, 53, 55, 63, 64, 72, 83, and 87. Here, there was some deviation from Factor II of the pilot study data (infra, p. 136). These items appeared to center around the job performance of the principal. Utilizing the criterion "role performance"

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<sup>2</sup>It would appear that the fourth factor was a specific artifact of the pilot study sample. The four factor arrangement was not supported by data from the major study.

TABLE III

VARIMAX ROTATION: FACTOR LOADINGS OF THREE FACTOR  
ANALYSIS OF THIRTY-EIGHT ORGANIZATIONAL STRUCTURE  
QUESTIONNAIRE ITEMS

Items	Communalities	I	II	III
43	0.415	0.368	0.078	0.523
44	0.444	0.188	0.140	0.624
45	0.325	0.091	-0.094	0.555
46	0.162	-0.142	0.259	0.273
47	0.283	0.030	0.500	0.179
49	0.087	0.154	0.058	0.245
53	0.292	-0.196	0.494	0.097
54	0.511	0.614	0.095	0.355
55	0.443	0.184	0.639	0.028
57	0.531	0.703	-0.111	0.158
59	0.398	0.385	0.389	0.313
60	0.321	0.074	-0.022	0.561
61	0.454	-0.003	0.001	0.674
62	0.361	0.105	0.342	0.482
63	0.429	0.314	0.574	0.037
64	0.360	0.242	0.548	-0.033
65	0.420	0.477	0.437	0.031
66	0.243	0.441	0.191	-0.110
67	0.488	0.688	0.034	0.116
69	0.486	0.596	0.201	0.300
70	0.368	0.508	-0.048	0.328
71	0.335	0.467	0.327	0.097
72	0.343	0.227	0.473	0.260
74	0.386	-0.085	0.405	0.464
75	0.406	0.502	0.128	0.372
76	0.523	0.556	0.391	0.247
77	0.379	0.144	0.344	0.490
78	0.359	-0.014	0.408	0.439
79	0.247	0.243	0.199	0.385
80	0.273	0.281	0.337	0.285
82	0.325	0.122	0.380	0.407
83	0.469	0.268	0.630	0.001
85	0.108	0.308	0.097	-0.062
86	0.377	0.337	0.384	0.341
87	0.508	0.243	0.670	0.024
88	0.585	0.705	0.231	0.188
89	0.476	0.626	0.188	0.221
90	0.208	0.212	0.048	0.401
Totals	14.129	5.282	4.537	4.309
Eigenvalues		9.392	2.417	2.321

of the principal, items 47 and 53 obviously did not belong in this grouping. Therefore, they were discarded.

Factor III included items 43, 44, 45, 60, 61, 62, and 77. These items were a mixture of those describing "formalization" and "standardization of procedures". This appeared quite logical since standardized procedures were concerned with operationalizing written rules and regulations, which was defined as formalization (9:302-3). Therefore, this factor was entitled "standardization of procedures".

### III. INTERCORRELATIONS

#### Item Correlation with Total Score

The Pearson product-moment correlations between each of the twenty-four items associated with the factors described in the previous section and the total bureaucracy score were calculated. The critical value was  $r \geq +.154$  (at the .01 level of significance). In every instance, the item correlation with the total was statistically significant.<sup>3</sup>

#### Item Correlation with Subscale Score

Pearson product-moment correlations between each item and the subscale total associated with that item

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<sup>3</sup>The lowest coefficient was .3452 (See Table XLII, page 162).

were calculated. Again, the critical value was  $r \geq +.154$  (at the .01 level of significance). In every instance, the item correlation with the subscale score was statistically significant.<sup>4</sup>

#### Intercorrelations of Subscales

The pilot study data were used in the attempt to construct a questionnaire in which the factors would not be significantly related. This was done in order to determine whether a bureaucratic organization could vary independently along several organizational variables, as Hall suggested (5:32-40).

Table IV gives the intercorrelations of the subscales and also the correlation of each subscale with the total bureaucracy score.

TABLE IV

INTERCORRELATIONS AMONG THREE SUBSCALES AND THE TOTAL  
ON THE ORGANIZATIONAL STRUCTURE QUESTIONNAIRE

	I	II	III	Total
I	1.00			
II	0.50	1.00		
III	0.52	0.35	1.00	
Total	0.88	0.73	0.78	1.00

<sup>4</sup>The lowest correlation coefficients were: factor I = .4327; factor II = .6128; and factor III = .5711. See Table XLII, page 162.

Every correlation coefficient was statistically significant beyond the .01 level.

Therefore, it can be stated that bureaucracy, as the term is applied to the internal structure of school systems, is essentially a unidimensional concept if restricted to the characteristics of centralization, role performance of principals, and standardization of procedures. In other words, bureaucratic tendencies in school systems are of a global nature rather than a number of characteristics each of which might vary independently of the others.

Punch came to a similar conclusion and, as a result of his study, defined bureaucracy as a "... unidimensional homogeneous concept if restricted to the characteristics of hierarchy of authority, rules for incumbents, procedural specification and impersonality" (10:111).

Significant correlations between the three scales indicate that a variation on one characteristic will affect the other two.

#### IV. RELIABILITY

Reliability coefficients for each subscale were calculated, using the Spearman-Brown split-halves method (1:279-80). These are shown in Table V. The reliabilities are acceptable, keeping in mind that (a) reliability is a



TABLE V  
RELIABILITIES OF THE ORGANIZATIONAL STRUCTURE  
QUESTIONNAIRE

Scale Number	Reliability Coefficient	Number of Items
I	.83	11
II	.83	6
III	.75	7

function of test length and can be increased by adding more items, and (b) the split-half method tends to underestimate (3:458).

#### V. BUREAUCRATIC DIMENSION SCORES

Each principal's three dimension scores were obtained by summing his responses to the appropriate items.<sup>5</sup> It is important to confirm that the dimension scores differentiate between school systems while clustering within school systems, and to ascertain the extent to which they do so. Although this question was not included as a formal hypothesis, it is fundamental to further analysis.

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<sup>5</sup>The raw scores were not transformed to factor scores. This transformation imposes independence of subscales on the data. Since the subscales were significantly interrelated, the relationship of "bureaucracy" with other variables was the most important.

Tests for analysis of variance are usually accompanied by homogeneity of variance tests. If the variance is not homogeneous, a significant F might be due in part to this fact (4:274). There is, however, general agreement that the F test is fairly robust and can accommodate large differences in variance (4:300-301; 12:33-34; 1:294; and 8:252). Guilford indicates that even when departures from homogeneity are gross, one can still proceed with analysis of variance but should then discount somewhat the levels of significance (4:274).<sup>6</sup>

Table VI illustrates the one-way analyses of variance which were carried out on factor I, factor II,

TABLE VI

SUMMARY OF ANALYSES OF VARIANCE BETWEEN TWENTY-EIGHT SCHOOL SYSTEMS FOR CENTRALIZATION, PRINCIPAL'S ROLE PERFORMANCE, STANDARDIZATION OF PROCEDURES, AND TOTAL OSQ SCORE\*

Factor	Mean Square		F	P
	Treatment	Error		
Centralization	140.09	34.06	4.11	0.00
Role Performance	40.07	22.48	1.78	0.01
Standardization of Procedures	187.23	18.78	9.97	0.00
Total	692.40	139.24	4.97	0.00

\* The degrees of freedom in each instance was 27, 254. The critical value of  $F_{.99} \geq 1.78$ .

<sup>6</sup>An attempt was made to locate tables which would permit a test of homogeneity of variance for K=28. Since such tables could not be found, this test was omitted.

factor III, and the total score, respectively. All F ratios are significant at the .01 level indicating that the subscales and the total score effectively differentiated between school systems.

#### VI. THE RURAL-URBAN DICHOTOMY

Of the twenty-eight school systems included in the study, nineteen were larger rural school units of administration in which the superintendent was an appointee of the Department of Education. The other nine superintendents were employees of city school boards. Superintendents were asked to indicate whether they assigned duties to all other employees of the board, and whether all such employees reported to the board through them. From these two questions it was ascertained whether the superintendent was the chief executive officer of the school board. In seven of the nine cities, this was found to be the case.

These two situations, then, were the basis for classification in further analysis.

##### The Larger Rural Unit vs City Classification

Tests were carried out to determine whether the mean score of principals in systems 1 - 19 (larger rural units) differed from those of principals in systems 20 - 28 (cities). The t-test was utilized with each item as

were the three bureaucratic "factors" and the total bureaucracy score. Since the t-test assumes homogeneity of variance, f tests for homogeneity of variances of the two groups were also conducted. Following that, the Welch T prime test (12:37), which does not assume homogeneity of variance, was calculated for the bureaucratic variables.<sup>7</sup>

Since there was no a priori hypothesis concerning these variables, the two-tail probabilities are reported.

Table VII gives the means, the t, and the two-tail probabilities between the two groups for centralization of authority (factor I), role performance (factor II), standardization of procedures (factor III), and the total bureaucracy score.

TABLE VII

SUMMARY OF PROBABILITIES OF SIGNIFICANT DIFFERENCES OF OSQ MEANS WITH SCHOOL SYSTEMS CLASSIFIED ON THE BASIS OF THE RURAL-URBAN DICHOTOMY

	Means			P Two-Tail*
	Rural	Urban	t	
Centralization	24.38	25.46	1.33	.18
Role Performance	16.75	15.94	1.32	.19
Standardization	18.43	24.51	9.76	.00
Total	59.46	65.91	3.69	.00

\*The probabilities of the ordinary t-test and of the Welch t-prime were identical.

<sup>7</sup>Only the data for the three factors and the total are reported here. Table XLIV, page 164, gives the two-tail probabilities for each of the items in the three factors.

The differences between the two groups on factors I and II are not significant, but the difference on factor III (standardization of procedures) is very significant. The difference here was so large that it affected the significance of the difference between the groups on the total score.

It should also be noted that the mean of the urban group was higher on centralization, standardization of procedures, and the total. The rural mean for role performance exceeded the urban mean.

#### The Chief Executive Office vs The Non Chief Executive Officer Classification

In two of the urban or city systems, the superintendents indicated they were not the chief executive officers. These two systems were included with the nineteen larger rural school units thus reclassifying all systems into two groups on the basis of the role of the superintendent.

In the larger rural school units, the superintendent acts as an advisor to the school board on educational matters. He is also charged with the task of implementing regulations of the Department of Education in his particular area. He may, or may not, be charged with the responsibility of implementing school board policy.

The superintendent who is locally appointed is

usually classed as the chief executive office of the board because he is responsible for implementing all policies of the school board. However, locally appointed superintendents need not be the chief executive officer, as was the case in two instances.

In seven systems the superintendent was the chief executive officer, and in the other twenty-one this was not the case. Classified on this basis, then, similar statistical tests to those described in the previous section were carried out. Table VIII gives the means, the *t*, and the two-tail probabilities between the two groups for the three bureaucratic factors and the total.<sup>8</sup>

TABLE VIII

SUMMARY OF PROBABILITIES OF SIGNIFICANT DIFFERENCES ON OSQ MEANS WITH SCHOOL SYSTEMS CLASSIFIED ON THE BASIS OF WHETHER OR NOT THE SUPERINTENDENT WAS THE CHIEF EXECUTIVE OFFICER (C.E.O.)

	Means		<i>t</i>	P Two-Tail*
	No C.E.O. (N=151)	C.E.O. (N=131)		
Centralization	24.02	25.87	2.09	0.04
Role Performance	16.43	16.24	0.32	0.75
Standardization	18.60	24.92	10.26	0.00
Total	59.05	67.02	4.61	0.00

\* The probabilities of the ordinary *t*-test and the Welch *t*-prime are identical.

<sup>8</sup>Table XLV, page        gives the two-tail probabilities for each of the items in the three factors.

The findings here are somewhat similar to those of the previous section. However, the result with respect to factor I (centralization) should be noted. The group in which the superintendent perceived himself as being the chief executive officer had a significantly higher (at the .05 level) mean than the group in which he was not.

Again, the differences are significant for standardization of procedures and the total score with the "CEO" mean significantly greater. The mean of the "No CEO" group was greater on factor II, although again not significantly so.

### Discussion

It should be noted that in proceeding from the urban-rural to the chief executive officer - non-chief executive officer classification, the differences between the means increased on centralization, standardization of procedures, and the total score.

In both instances, the very large difference in the means on factor III appeared to have the effect of making the difference on the total significant. It appeared that superintendents in urban systems, and especially those in position of chief executive officer, were very concerned with school board policy and the rules, regulations, and procedures for implementing such policy.

The rural superintendent would not have this concern; rather, he would be involved to a greater extent in the actual supervision of instruction and have considerable personal contact with the principals. This could possibly account for the higher "rural" and "non chief executive officer" mean on the dimension of role performance. Although the difference was not statistically significant, in both classifications it was a reversal of the pattern in the other factors.

The findings with respect to the dimension of centralization appeared quite logical. In other words, more decision making authority would be concentrated in the office of a superintendent who was the chief executive officer than in the office of one who was not. A chief executive officer assigns duties to all other employees and they report to the school board through him. Thus, the principals perceived, and probably correctly so, that decision making authority was vested primarily in the chief executive officer.

The systems which employed a superintendent as a chief executive officer were reclassified on the basis of size and t tests were again conducted on the means of the two groups.<sup>9</sup>

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<sup>9</sup>In checking the number of principals, teachers, and students, systems 22 and 24 were considerably larger than systems 20, 21, 23, 25, and 28.



as well as on the total bureaucratic score (7:86).

Punch found the correlation between school size and bureaucratization to be  $-.35$  (10:117). Thus, opinion and research findings are in conflict on this issue.

It should be noted that the larger systems had higher mean scores on all the variables. This would tend to support those opinions and findings which link size positively to bureaucratization. Again, the interpretation must be cautious since only the difference on one variable was significant. This latter result might be due to a desire for uniformity in the implementation of policy as school system size increases.

It should be noted, however, that the overall effect of size on bureaucratization was not statistically significant.

#### VII. CONGRUENCY BETWEEN PRINCIPALS' AND CENTRAL OFFICE PERSONNELS' SCORES

Returns were received from instructional central office personnel in only three urban systems. The scores of these were compared to the scores of principals in the same system. This was an attempt to determine how two groups, both working in the same system viewed the bureaucratic tendencies of the system. Again, the  $t$  test was the statistical technique utilized. Tables X, XI, and XII illustrate the results for systems 20, 22 and 24, the

systems from which central office personnel responded.

TABLE X

SUMMARY OF PROBABILITIES OF SIGNIFICANT DIFFERENCES  
BETWEEN OSQ SCORES OF PRINCIPALS AND CENTRAL OFFICE  
PERSONNEL IN SYSTEM 20

	Principals (N=14)	Means Central Office Personnel (N=7)	t	P Two- Tail*
Centralization	24.50	26.43	1.08	0.29
Role Performance	15.29	16.71	0.66	0.52
Standardization of Procedures	26.29	26.43	0.09	0.93
Total	66.07	69.57	0.86	0.40

\* An F-test between variances on all four of the above variables indicates homogeneity of variance in every instance.

TABLE XI

SUMMARY OF PROBABILITIES OF SIGNIFICANT DIFFERENCES  
BETWEEN MEAN OSQ SCORES OF PRINCIPALS AND CENTRAL  
OFFICE PERSONNEL IN SYSTEM 22

	Principals (N=40)	Means Central Office Personnel (N=7)	t	P Two- Tail*
Centralization	30.50	22.86	3.59	0.01
Role Performance	16.42	14.00	1.25	0.17
Standardization of Procedures	27.15	25.86	0.73	0.19
Total	74.07	62.71	1.96	0.01

\* An F-test indicated lack of homogeneity of variance in each instance. Therefore, the Welch t-prime probabilities are reported.

TABLE XII

SUMMARY OF PROBABILITIES OF SIGNIFICANT DIFFERENCES  
BETWEEN MEAN OSQ SCORES OF PRINCIPALS AND CENTRAL  
OFFICE PERSONNEL IN SYSTEM 24

	Principals (N=34)	Means Central Office Personnel (N=11)	t	P Two- Tail*
Centralization	21.35	18.73	1.43	0.16
Role Performance	16.38	15.18	0.76	0.45
Standardization of Procedures	23.82	20.91	1.81	0.08
Total	61.56	54.82	1.81	0.08

\* An F-test indicated homogeneity of variance in every instance.

### Discussion

In two of the three systems, the two groups apparently perceived the bureaucratic tendencies of the system in a similar fashion. Since the Organizational Structure Questionnaire was primarily designed for respondents who were principals, this would seem to indicate that central office persons in systems 20 and 22 were cognizant of the bureaucratic constraints placed on the principal. It might also indicate that these constraints were applicable to their position as well.

In system 22, significant differences were found for the dimension of centralization and the total score. The central office staff perceived a lesser degree of

authority residing in the superintendent and central office than did the principals. It is both difficult and dangerous to generalize on the basis of such a result in only one system. Perhaps all that needs to be stated is that central office staff, in one system, perceived principals as having more decision making authority than the principals perceived themselves as having.

#### VIII. CONGRUENCY BETWEEN PRINCIPALS' AND SUPERINTENDENTS' SCORES

In order to determine whether superintendents and principals differed in their perceptions of the bureaucratization of the system, t tests were conducted on the means between the two groups. Table XIII summarizes the results for the three subscales and total score.

TABLE XIII  
SUMMARY OF PROBABILITIES OF SIGNIFICANT DIFFERENCES  
BETWEEN MEAN OSQ SCORES OF PRINCIPALS AND  
SUPERINTENDENTS

	Means		t	P Two-Tail*
	Superintendents (N=32)	Principals (N=282)		
Centralization	20.94	24.88	2.95	0.00
Role Performance	14.84	16.34	1.60	0.04
Standardization	17.41	21.53	3.70	0.00
Total	53.19	62.75	3.50	0.00

\* An F-test indicated lack of homogeneity of variance. Therefore the Welch t-prime probabilities are reported.

The scores of the two groups differed significantly on each of the four variables, and in every instance the principals perceived the system to be bureaucratized to a greater extent than did the superintendents.

### Discussion

There is no doubt that principals perceived a significantly higher degree of bureaucratization than did superintendents.

This finding seems quite logical since superintendents viewed themselves as showing relatively low initiating structure and high consideration (*infra*, p. 86). This would tend to support the theoretical framework which hypothesized a positive relationship between bureaucracy and initiating structure, and an inverse relationship between bureaucracy and consideration.

The findings could be indicative of some measure of conflict in a school system. For example, principals perceived that more decision making authority was centered in the central office than did superintendents. In this situation there could exist a kind of "no man's land" where each thinks the other has jurisdiction. A possible explanation for the difference on the dimension of role performance is that a subordinate usually perceives that his performance is under evaluation by his superiors.

Similarly, principals having to comply with standardized procedures probably viewed them as being greater both in number and impact than did superintendents. Again, this could be due to the fact that principals were on the "receiving" end of such procedures.

## IX. SUMMARY

From the thirty-eight Organizational Structure items selected from the pilot study, twenty-four were selected for final analysis. The pilot study indicated that the OSQ could be classified into four dimensions. This was not borne out in the final analysis since a three factor arrangement appeared to be more meaningful. The three subscales differentiated between school systems, and were reasonably consistent internally. The reliabilities were generally acceptable in view of the scale length.

The intercorrelation matrix of the three scales and the total indicated significant relationships between the three dimensions. This indicated that analysis involving the total bureaucratic score was most significant. Bureaucracy, as the term is applied to the internal structure of a school system, is a unidimensional variable if restricted to the characteristics of centralization, role performance, and standardization of procedures.

The data suggest that urban school systems, especially those which employ the superintendent as a

chief executive officer, are more bureaucratic than the larger units of administration. Among the systems having a chief executive officer, size does not appear to be significant in its effect on bureaucratization.

Principals' and central office staffs' perception in two of three systems were in general agreement as to the extent of bureaucratization.

Principals' and superintendents' perception as to the extent of bureaucratization of systems were significantly different on all three subscales and the total.

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## CHAPTER V

### ANALYSIS OF DATA: THE LEADER BEHAVIOR OF SUPERINTENDENTS

#### I. INTRODUCTION

The problem investigated in these analyses was basically whether or not there were significant differences in the leader behavior of superintendents. The relationship of leader behavior to a number of variables was also investigated.

A summary of the data obtained from the LBDQ is reported in Appendix G.

#### II. FACTOR ANALYSIS OF THE LBDQ

A factor analysis was applied to the thirty items which comprised the two factors, consideration and initiating structure. The consideration dimension consisted of items 1, 3, 6, 8, 12, 13, 18, 20, 21, 23, 26, 28, 31, 34, and 38. The initiating structure dimension consisted of items 2, 4, 7, 9, 11, 14, 16, 17, 22, 24, 27, 29, 32, 35, and 39.

Table XIV shows the factor loadings of a varimax rotation factor analysis using two factors. As can be seen the consideration accounted for 70.7 per cent of the common variance.

TABLE XIV

VARIMAX ROTATION: FACTOR LOADINGS OF TWO FACTOR  
ANALYSIS OF THIRTY LEADER BEHAVIOR DESCRIPTION  
QUESTIONNAIRE ITEMS

Items	Communalities	I	II
1	0.212	0.444	0.123
2	0.455	0.442	0.510
3	0.505	0.701	0.120
4	0.431	0.638	0.155
6	0.523	0.706	0.158
7	0.562	-0.533	0.528
8	0.533	0.730	0.004
9	0.263	-0.171	0.483
11	0.300	-0.384	0.390
12	0.372	0.609	0.017
13	0.415	0.612	0.201
14	0.196	0.154	0.415
16	0.311	0.034	0.557
17	0.476	0.323	0.610
18	0.516	0.711	-0.103
20	0.437	0.641	-0.161
21	0.425	0.634	0.153
22	0.384	0.025	0.619
23	0.556	0.746	-0.005
24	0.197	-0.090	0.434
26	0.463	0.678	-0.051
27	0.403	0.502	0.388
28	0.607	0.774	-0.084
29	0.343	-0.051	0.583
31	0.541	0.732	-0.074
32	0.513	0.473	0.537
34	0.493	0.699	0.066
35	0.424	0.226	0.610
38	0.570	0.753	0.046
39	0.547	0.666	0.321
Totals	12.970	9.165	3.806
Eigenvalues		9.370	3.601

Items 4, 27, and 39 had higher factor loadings on the consideration factor, despite the fact that they were labelled as being descriptive of initiating structure.

Item 7, "He rules with an iron hand" is noted as loading strongly positive on the initiating structure dimension, and strongly negative on the consideration dimension. It would appear that this item is the very antithesis of "consideration".

For purposes of this study, items 4, 27, and 39 were transferred to the consideration dimension, and items 2, 11, and 32 were dropped entirely.<sup>1</sup>

As a whole, the item placement in the factors was reasonably consistent with the original placement by Halpin.

### III. INTERCORRELATIONS

#### Item Correlation with Total Score

The Pearson product-moment correlations between each of the twenty-seven items associated with the factors described in the previous section and the total leader behavior score were calculated. The critical value was

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<sup>1</sup>These items were discarded because of high loadings on both factors, (items 2 and 32) or not sufficiently high loading on either factor (item 11).

$r \geq +.154$  (at the .01 level of significance). Table XLIII, page 163, gives these correlations. Two items, 7 and 9, did not correlate significantly with the total score. However, these items were not discarded because of the high correlation with their particular dimensions.

#### Item Correlation with Subscale Score

Pearson product-moment correlations between each item and the subscale total associated with that item were calculated. Again, the critical value was  $r \geq +.154$  (at the .01 level of significance). In every instance, the item correlation with the subscale score was statistically significant.<sup>2</sup>

#### Intercorrelations of Subscales

Table XV gives the intercorrelation of the sub-

TABLE XV

INTERCORRELATIONS BETWEEN TWO SUBSCALES AND THE TOTAL  
ON THE LEADER BEHAVIOR DESCRIPTION QUESTIONNAIRE

	I	II	Total
I	1.000		
II	0.04	1.000	
Total	<u>0.91*</u>	<u>0.45</u>	1.000

\* Underlined coefficients significant beyond the .01 level.

<sup>2</sup>The lowest coefficients were: factor I = +.5487, factor II = +.4368. See Table XLIII, page 163.

scales, and the correlations between the subscales and the total leader behavior score.

The intercorrelation between the initiating structure and consideration subscale was .04, not statistically significant. This compares favorably with the findings of Halpin who found the correlation to be .13 in a study of Ohio school superintendents (4:67). In another study, the intercorrelation for aircraft commanders was .45 (Ibid.).

A low coefficient of .04 indicates that the superintendent's description on one of the factors bears virtually no relationship to his description on the other. The description of a superintendent on one dimension could vary independently of the other dimension.

#### IV. RELIABILITY

Reliability coefficients for each subscale were calculated, using the Spearman-Brown split-halves method (1:279-80). These are shown in Table XVI.

The reliabilities are acceptable since reliability is a function of test length. Also, the split-half tends to underestimate (2:458).

TABLE XVI  
RELIABILITIES OF THE LEADER BEHAVIOR  
DESCRIPTION QUESTIONNAIRE

Scale	Reliability Coefficient	Number of Items
I	.94	18
II	.74	9

#### V. LEADER BEHAVIOR DIMENSION SCORES

Each principal's two dimension scores were obtained by summing his responses to the appropriate items. An analysis of variance was then conducted on both the factors and the total scores. The previous discussion regarding homogeneity of variance should again be taken into consideration (supra, p. 56 ).

Table XVII illustrates the statistical tests for consideration, initiating structure and the total score. All F ratios are significant beyond the .01 level indicating that the LBDQ effectively distinguishes between school systems while clustering within systems.

TABLE XVII

SUMMARY OF ANALYSIS OF VARIANCE BETWEEN TWENTY-EIGHT SCHOOL SYSTEMS FOR THE DIMENSIONS OF CONSIDERATION, INITIATING STRUCTURE, AND THE TOTAL LBDQ SCORE\*

	Mean Square		F	P
	Treatment	Error		
Consideration	472.19	82.48	5.72	0.00
Initiating Structure	63.16	18.41	3.43	0.00
Total	487.74	112.07	4.35	0.00

\* The degrees of freedom in each instance was 27, 254. The critical value of  $F_{.99} \geq 1.78$ .

#### VI. THE RURAL-URBAN DICHOTOMY

An analysis similar to that done with data from the OSQ was carried out on data from the LBDQ. The purpose here was to determine whether the method of employment of the superintendent, and whether he was the chief executive officer, had a bearing on his leader behavior.

##### The Larger Rural Unit vs City Classification

Statistical tests were carried out to determine whether the mean scores of principals in school systems 1 - 19 differed significantly from those of principals in systems 20 - 28. A t-test was conducted on each of the items as well as the two dimensions of leader behavior and the total LBDQ score. Again, F tests between

variance were conducted in order to determine homogeneity or heterogeneity of variance. Following this, Welch t prime tests were calculated.<sup>3</sup>

Since there was no a priori hypothesis concerning these variables, two-tail probabilities are reported in all instances.

Table XVIII reports the means, the t, and the two-tail probabilities of significant differences between the two groups for consideration, initiating structure, and the total LBDQ score.

TABLE XVIII

SUMMARY OF PROBABILITIES OF SIGNIFICANT DIFFERENCES BETWEEN MEAN LBDQ SCORES OF PRINCIPALS WITH SYSTEMS CLASSIFIED ON THE BASIS OF THE LARGER RURAL UNIT-CITY CLASSIFICATION

		Means		
	Larger Rural Units (N=138)	Cities (N=144)	t	P-Two- Tail*
Consideration	60.04	70.74	2.89	0.00
Initiating Structure	30.80	31.89	1.83	0.07
Total	97.84	102.63	3.71	0.00

\* The F test indicated lack of homogeneity of variance for initiating structure and the total LBDQ scores. Therefore, the Welch t prime probabilities are reported for all three variables.

<sup>3</sup>Only the data for the two dimensions and the total are reported here. Table XLVI, page 166, gives the probabilities for each item in the two dimensions.



The results indicate significant differences for the dimension of consideration and the total leader behavior score. The difference for initiating structure was not significant.

The Chief Executive Officer vs Non Chief Executive Officer Classification

In two of the urban or city systems, the superintendents indicated they were not the chief executive officers. These two systems were included with the nineteen larger rural school units thus reclassifying all systems into two groups on the basis of the role of the superintendent.

Table XIX reports the means, the t, and the two-

TABLE XIX

SUMMARY OF PROBABILITIES OF SIGNIFICANT DIFFERENCES BETWEEN MEAN LBDQ SCORES OF PRINCIPALS WITH SCHOOL SYSTEMS CLASSIFIED ON THE BASIS OF WHETHER OR NOT THE SUPERINTENDENT WAS THE CHIEF EXECUTIVE OFFICER (C.E.O.)

	No C.E.O. (N=151)	C.E.O. (N=131)	t	P Two-Tail*
Consideration	67.71	70.34	2.04	0.04
Initiating Structure	30.74	32.06	2.21	0.03
Total	98.45	102.40	2.76	0.01

\* The F test indicated lack of homogeneity of variance only for the total. Probabilities for the Welch t approximations were identical to the probabilities of the ordinary t test (to the second decimal point). Welch t approximations for the individual items are reported in Table XLVII, page 167.

tail probabilities of significant differences between the groups on the two dimensions and the total LBDQ score.

The results indicated significance at the .05 level in every instance. It should be noted that the systems in which the superintendent acted as the chief executive officer had the higher mean on all reported variables.

### Discussion

Interpreting a significantly higher score as being indicative of leader behavior of a positive nature, it can be concluded that superintendents employed by school boards exhibit positive considerate and general leader behavior. Furthermore, superintendents who are chief executive officers exhibit more positive leader behavior on both dimensions and the total LBDQ score than do other superintendents.

Superintendents who are employees of the department of education do have a degree of legal or legislative authority over principals, but do not have the organizational authority of position.

It is noteworthy that in going from the larger rural unit-city to the chief executive officer-non chief executive officer classification, the difference in means for initiating structure also became significant. Keeping in mind the definition of this dimension and upon examining

the items in the subscale, it would seem quite logical that a superintendent, charged by a board with overall supervision of a system, would exhibit positive initiating structure behavior.

It would appear that superintendents in urban areas exhibit greater overall positive leader behavior than do superintendents in the larger rural units. A possible explanation for this is that the latter are employees of the Department of Education and are responsible to the Department. Their relationship to school boards is mainly that of advisor and they do not, by virtue of their position, have authority over employees of the board. This is an example of role conflict since there is lack of clarity in role definition and there are differing demands and expectations made upon the superintendent by various persons and groups (5:141).

Therefore, the superintendent who is an employee of the Department of Education is in a rather awkward situation and obviously finds it difficult to exhibit positive educational leadership.

#### VII. CONGRUENCY BETWEEN PRINCIPALS' AND CENTRAL OFFICE PERSONNELS' SCORES

The comparison between the scores of these two groups was an attempt to determine how they viewed the leader behavior of their particular superintendent.

Again, the t test was the statistical technique used. Tables XX, XXI, and XXII give the results for systems 20, 22, and 24, respectively, the only systems from which central office personnel responded.

TABLE XX

SUMMARY OF PROBABILITIES OF SIGNIFICANT DIFFERENCES  
BETWEEN MEAN LBDQ SCORES OF PRINCIPALS AND  
CENTRAL OFFICE STAFF IN SYSTEM 20

	Principals (N=14)	Means Central Office Personnel (N=7)	t	P Two- Tail*
Consideration	72.64	78.29	1.67	0.03
Initiating Structure	32.36	31.86	0.36	0.72
Total	105.00	110.14	1.35	0.11

\* An F-test indicated lack of homogeneity of variance for consideration and the total. Therefore, the probabilities reported are the Welch t prime approximations.

In school system 20, the central office staff perceived the superintendent to be significantly more considerate than did principals. A similar situation was found in system 22 with a significant difference also on the means of the total LBDQ score. No significant differences were found in system 24.

TABLE XXI

SUMMARY OF PROBABILITIES OF SIGNIFICANT DIFFERENCES  
BETWEEN MEAN LBDQ SCORES OF PRINCIPALS AND CENTRAL  
OFFICE STAFF IN SYSTEM 22

	Principals	Means Central Office Personnel	t	P Two- Tail*
	(N=40)	(N=7)		
Consideration	61.20	70.57	2.56	0.01
Initiating Structure	32.60	32.00	0.34	0.63
Total	93.80	102.57	2.16	0.04

\* An F-test indicated lack of homogeneity of variance. Therefore, the probabilities reported are Welch t-prime approximations.

TABLE XXII

SUMMARY OF PROBABILITIES OF SIGNIFICANT DIFFERENCES  
BETWEEN MEAN LBDQ SCORES OF PRINCIPALS AND CENTRAL  
OFFICE STAFF IN SYSTEM 24

	Principals	Means Central Office Personnel	t	P Two- Tail*
	(N=34)	(N=11)		
Consideration	79.68	75.82	1.63	0.12
Initiating Structure	29.85	27.64	1.56	0.07
Total	109.53	103.45	2.01	0.06

\* An F-test indicated lack of homogeneity of variance on initiating structure. The probability on this dimension changed from 0.13 on the ordinary t test to the above on the Welch t prime. The probabilities on the other dimensions remained unchanged.

### Discussion

A probable explanation for the findings in systems 20 and 22 is that the superintendent behaves differently toward different groups. With central office staff, people with whom he interacts daily, he is possibly more considerate than with principals. Perhaps the latter group does not interact with the superintendent to any great extent in "non-policy" situations, which tend to be quite informal. Thus, they view him as being less considerate. It should be noted that in each of the three systems principals had the higher mean initiating structure score, although not significantly so.

### VIII. CONGRUENCY BETWEEN PRINCIPALS' AND SUPERINTENDENTS' SCORES

The comparison between the means of the groups was to determine whether principals perceived the superintendent's behavior in the same way he (the superintendent) perceived his own behavior. Table XXIII gives the means, the *t*, and the two-tail probabilities for significant differences between the means of the two dimensions of the LBDQ and the total score.

The only finding of statistical significance was on the dimension of initiating structure. Here, principals perceived that superintendents exhibited behavior of this

TABLE XXIII  
SUMMARY OF PROBABILITIES OF SIGNIFICANT DIFFERENCES  
BETWEEN MEAN LBDQ SCORES OF PRINCIPALS AND  
SUPERINTENDENTS

	Means		t	P Two-Tail*
	Superin- tendents (N=32)	Principals (N=282)		
Consideration	71.41	68.93	1.25	0.10
Initiating Structure	29.56	31.35	1.94	0.03
Total	100.97	100.29	0.30	0.72

\* An F-test indicated lack of homogeneity of variance. Therefore, the Welch t-prime probabilities are reported for all variables.

nature more often than superintendents indicated themselves. While the other results are not significant, it should be noted that principals described superintendents as showing less consideration than superintendents described themselves as showing.

### Discussion

Halpin also found that staff members described the superintendent as showing less consideration than superintendents described themselves as showing (3:76-77). Halpin, however, found a significantly positive relationship between superintendents' self-descriptions and staff members' description of their superintendents' initiating structure behavior (3:77). In this study, a significant difference was found between these sets of scores.

Perhaps it is only natural for any leader to think of himself as not showing a great amount of initiating structure. It is noteworthy, and perhaps encouraging, to find relative agreement to the extent found in this study. This conclusion might also hold for the results of the preceding section which indicated a considerable degree of consistency in the superintendent's behavior (supra, p. 83-4 ).

#### IX. SUMMARY

The thirty items of the LBDQ were reduced to twenty-seven as a result of a factor analysis. Also, three items (4, 27 and 39) were transferred from the initiating structure to the consideration subscale. For purposes of this study the consideration subscale consisted of eighteen items and the initiating structure subscale of nine.

These two subscales correlated significantly positive with the total LBDQ score, but the inter-relationship was not significant.

The two subscales differentiated between school systems, and appeared to be reasonably consistent internally. The reliabilities were generally acceptable in view of scale length.

The data appeared to suggest that superintendents in urban areas, especially those in which they were the



chief executive officer, exhibited behavior indicative of a significantly greater degree of both consideration and initiating structure than superintendents in larger rural school units.

There seemed to be a considerable amount of agreement between perceptions of principals and central office staff as to the leader behavior of superintendents. This is rather significant since in a behavioral study one would anticipate finding more divergence than concurrence.

There was also agreement between superintendents' and principals' scores on the dimension of consideration; although principals did indicate that superintendents' self description of initiating structure was significantly lower.

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## CHAPTER VI

### ANALYSIS OF DATA: THE BUREAUCRATIC STRUCTURE- LEADER BEHAVIOR RELATIONSHIP

#### I. INTRODUCTION

The analysis reported in this chapter considers the relationship between the leader behavior of the superintendent and the bureaucratization of the school system.

The hypotheses tested were:

- (1) There will be a significant relationship between the bureaucratization of a school system and the initiating structure dimension of the superintendent's behavior; and
- (2) There will be a significant inverse relationship between the bureaucratization of a school system and the consideration dimension of leader behavior.

#### II. INTERCORRELATIONS OF LEADER BEHAVIOR AND BUREAUCRATIC DIMENSIONS

Table XXIV shows the intercorrelations between the three leader behavior and the four bureaucracy variables. Table XXV summarizes the information by reporting only the relationship between consideration and initiating structure and the total bureaucracy score.

TABLE XXIV

INTERCORRELATION MATRIX: LBDQ AND OSQ (282 PRINCIPALS) \*

	Consider- ation	Initiating Structure	LBDQ Total	Central- ization	Role Perform- ance	Standard- ization	OSQ Total
Consideration	1.00						
Initiating Structure	0.04	1.00					
LBDQ-Total	<u>0.91</u>	<u>0.45</u>	1.00				
Centralization	<u>-0.54</u>	<u>0.39</u>	<u>-0.32</u>	1.00			
Role Performance	<u>-0.17</u>	<u>0.35</u>	0.00	<u>0.50</u>	1.00		
Standard- ization of Procedures	-0.05	<u>0.47</u>	0.15	<u>0.52</u>	<u>0.35</u>	1.00	
OSQ-Total	<u>-0.34</u>	<u>0.51</u>	<u>-0.10</u>	<u>0.88</u>	<u>0.73</u>	<u>0.78</u>	1.00

\* All underlined ratios significant at the .01 level ( $r_{.99} = .154$ ).

TABLE XXV  
CORRELATION OF CONSIDERATION AND INITIATIVE  
STRUCTURE WITH BUREAUCRATIZATION\*

Dimension	Bureaucratization
Consideration	-0.34 **
Initiating Structure	0.51 **

\* Significant beyond the .01 level.

\*\* Punch found the correlations, in schools rather than school systems, to be -.66 and .37, respectively (4:150).

The coefficients given in Table XXIV and XXV were arrived at by using the scores from the two questionnaires. It was established in previous analysis that the classification of the sample on the basis of whether or not the superintendent was the chief executive officer had a significant effect on both bureaucratization and leader behavior. Consequently, correlation coefficients were calculated using twenty-one systems as one sample, and seven systems as another.

Tables XXVI and XXVII summarize the results of these analyses.

In the first group (no chief executive officer) the coefficient between consideration and bureaucracy dropped to -0.10, not significant, while in the second sub-sample it rose to -0.68. It was found that the difference of .58 in the two coefficients was statistically

TABLE XXVI

CORRELATION OF CONSIDERATION AND INITIATING STRUCTURE  
WITH BUREAUCRATIZATION IN SCHOOL SYSTEMS WHERE THE  
SUPERINTENDENT IS NOT THE CHIEF EXECUTIVE OFFICER  
(N=151 PRINCIPALS)

Dimension	Bureaucratization
Consideration	-0.10
Initiating Structure	0.51*

\* Significant beyond the .01 level ( $r_{.99} = .154$ )

TABLE XXVII

CORRELATION OF CONSIDERATION AND INITIATING STRUCTURE  
WITH BUREAUCRATIZATION IN SCHOOL SYSTEMS WHERE THE  
SUPERINTENDENT IS THE CHIEF EXECUTIVE OFFICER  
(N=131 PRINCIPALS)

Dimension	Bureaucratization
Consideration	-0.68*
Initiating Structure	+0.48*

\* Significant beyond the .01 level.

significant beyond the .01 level (2:154).<sup>1</sup>

It should be noted that the correlation between  
initiating structure and bureaucracy remained reasonably  
constant.

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<sup>1</sup>The ratio obtained is the unit normal deviate  
and may be interpreted in the same way. The critical  
ratio was  $Z_{.99} = 2.58$ , and the ratio obtained was 18.69.

### Discussion

There is little need to dwell on the finding that the data support the hypothesized relationships. However, the significant difference between the two coefficients relating consideration and bureaucratization in the two sub-samples needs some clarification.

A dual type of leadership probably exists in those systems not having a chief executive officer. The superintendent would coordinate the instructional program and the secretary-treasurer of the school board would be in charge of the non-instructional matters. To some degree, then, the bureaucratization of the school system could be independent of the superintendent since the secretary-treasurer's office could also impose bureaucratic constraints upon principals. Therefore, considerate behavior on the superintendent's part might not have any relationship to the bureaucratization of the system.

On the other hand, he has authority based on superior knowledge and technical competence (3:236-240), although this authority might be limited specifically to instructional matters. This authority could manifest itself in initiating structure behavior which is related to centralization, expectations for the role of the principal, and standardization of procedures in instructional concerns.

In summary, it would seem that the position of the

superintendent who is not a chief executive officer accounted for the lack of a significant relationship between consideration and bureaucratization in those systems.

### III. PREDICTION OF BUREAUCRATIZATION

Initially, fifteen variables, including the two leader behavior factors, were used as predictors in a step-wise regression analysis in order to determine the contribution of each to bureaucratization. As can be seen by Table XXVIII, only four of the fifteen made a significant contribution. These were the two dimensions

TABLE XXVIII  
MULTIPLE REGRESSION PREDICTION OF BUREAUCRATIZATION  
(236 PRINCIPALS)\*

Predictor	% of Variation Accounted For Stepwise	Cumulative Total % of Variation
1. Consideration	26.72	26.72
2. Initiating Structure	11.54	38.26
3. Chief Executive Officer-Non Chief Executive Officer	3.88	42.14
4. Rural-Urban	1.55	43.69

\* Only those systems were included from which both superintendents and principals responded.



of leader behavior, the rural-urban, and the chief executive officer-non chief executive officer classifications. The contributions of any of the other variables were not significant beyond the .05 level.

In all, some 44 per cent of the variation in bureaucratization is accounted for by leader behavior plus the other two variables compared with 38 per cent by leader behavior alone.

It is difficult and dangerous to make conclusive statements indicative of the causation of a relationship between two variables. However, on the basis of the results of this study, it would seem that the leader behavior of the superintendent could influence the bureaucratic structure of an organization.

#### IV. SUMMARY

Bureaucratization correlated strongly and positively with initiating structure, and strongly but negatively with consideration.

When the sample was classified on the basis of whether or not the superintendent was the chief executive officer of the school board, the correlations between bureaucratization and consideration were significantly different. It was negative and non-significant in systems where the superintendent was not the chief executive officer, and negative and highly significant in the other systems.

The leader behavior of the superintendent is the most important predictor of bureaucratization. The chief executive-non chief executive officer and rural-urban dichotomies also added significantly to the predictability of bureaucratic structure. In all, some 44 per cent of the variation in school system bureaucratization was accounted for by the four variables.

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## CHAPTER VII

### SUMMARY, CONCLUSIONS, AND IMPLICATIONS

#### I. SUMMARY

##### The Problem

This study was concerned with three major purposes: to examine the pattern of organizational structure in school systems using the bureaucratic model; to examine the leader behavior of the superintendent using the concepts of leader behavior as refined by Halpin; and to examine the relationship of the leader behavior of the superintendent to the bureaucratization of the system.

##### Hypotheses

It was hypothesized that:

- (1) there would be a significant relationship between the leader behavior dimension of initiating structure and bureaucratization, and
- (2) there would be a significant inverse relationship between the leader behavior dimension of consideration and bureaucratization.

### Methodology and Instrumentation

Responses were received from superintendents in thirty-two school systems in Saskatchewan, 282 principals in twenty-eight systems, and 25 central office personnel in three systems.

Superintendents were asked to respond to the Organizational Structure Questionnaire and the Leader Behavior Description Questionnaire on the basis of their perceptions of the system and their own leader behavior, respectively. Principals and central office staff were also asked to respond to the above questionnaires on the basis of their perceptions of the system and the leader behavior of the superintendent.

Data provided were analyzed by use of factor analyses, correlations, analysis of variance, and t-tests.

## II. FINDINGS AND CONCLUSIONS

### Bureaucratic Structure

As a result of factor analysis of the items in the scale, three factors were identified. These were centralization, role performance, and standardization of procedures. Saskatchewan school systems were found to differ significantly on each of the dimensions and also on the total score.

The correlation matrix of the three factors showed significant positive coefficients in all instances. Thus,

it was concluded that bureaucracy, as the term applies to the internal structure of school systems, is a unified concept if restricted to the three characteristics identified in this study.

A variable which had considerable effect on the bureaucratization of the system was whether or not the superintendent was the chief executive officer. The systems in which superintendents were chief executive officers had significantly higher scores on centralization, standardization of procedures, and the total score.

The seven systems employing chief executive officers were reclassified on the basis of size and tests on the differences of mean scores were conducted. The overall difference was not significant, although the difference on standardization of procedures was significant.

There was general agreement between principals and central office staff in three urban systems regarding the bureaucratization of their particular system. However, there were significant differences between the perceptions of principals and superintendents on all three dimensions and the total. In every instance, principals had the higher mean score.

### Leader Behavior

A factor analysis was conducted on data obtained from the LBDQ resulting in the shifting of several items

from the initiating structure to the consideration dimension. Also, three items were discarded.

The intercorrelation between the two dimensions was not significant, indicating that either could vary independently of the other.

Both dimensions and the total score differentiated between the leader behavior styles of Saskatchewan superintendents.

Superintendents employed by school boards, especially those who were the chief executive officer, exhibited positive leadership behavior as compared with their rural and non-chief executive officer colleagues.

In the three systems from which central office staff responded, there was considerable agreement between them and principals regarding their particular superintendent's leader behavior. In two of the three systems, the central office staff perceived the superintendent to be more considerate than principals. Principals described superintendents as being significantly higher on the dimension of initiating structure than the superintendents' self description on this item.

#### The Leader-Behavior-Bureaucratic Structure Relationship

The hypothesis of a positive link between bureaucracy and initiating structure was supported and the inverse relationship between bureaucracy and consideration

was partially supported. A variation did occur in that there was not a significant relationship between consideration and bureaucratization in systems where the superintendent was not the chief executive officer.

Only four of fifteen variables included in a stepwise regression analysis accounted for significant variation in bureaucratization. These were the two leader behavior dimensions and the rural-urban and chief executive officer-non chief executive officer dichotomies. In all, 44 per cent of the variation in bureaucratization was accounted for with leader behavior accounting for 38 per cent.

### Conclusions

The bureaucratic model was applied to school systems in an attempt to refine the concept of bureaucratic structure. The results reinforced the uni-dimensional definition propounded by several recent studies. Three characteristics of bureaucratic structure, all of which were significantly interrelated, were centralization, role performance, and standardization of procedures. Since they varied together, bureaucracy may reflect the degree of emphasis on them in school system organization.

Despite the fact that the term "bureaucratic structure" may be used more precisely than before, there



remains the question of the remaining structural variables such as specialization and flexibility. This could well be an area for further research.

A second general conclusion is that leader behavior may be conceptualized as a two factor variable. Furthermore, the results of analysis using this concept appeared to be practically and theoretically valid.

There was, as predicted, a close relationship between bureaucratization of a school system and the leader behavior of the superintendent. Initiating structure and bureaucratization showed a strong positive relationship; consideration and bureaucratization showed a significant negative correlation, with the exception of areas in which the superintendent was not the chief executive officer. The leader behavior style of the superintendent accounts for 38 per cent of the variation in school system bureaucratization. Evidence seems to support the conclusion that the superintendent's position is a major source of influence. Therefore, a superintendent, especially one who is a chief executive officer, holds a position of influence and his particular style of leader behavior can be an important determiner of school system bureaucratization.

### III. IMPLICATIONS

#### For Theory and Research

A number of studies, including the present one, have investigated the bureaucratization of educational organizations with the result that the term may now be used more precisely in an educational context. There remain some characteristics of a bureaucracy which have been less applicable in educational organizations, such as specialization and flexibility. Longitudinal studies are needed to determine the adaptability or flexibility of organizations to changing conditions. Some of the data from the present study could possibly be used in such further research.

A study in depth involving superintendents, central office staff, principals, teachers, and students is needed in order for the characteristic of specialization to manifest itself. Further, the relation of bureaucratization to student achievement, personnel satisfaction, and other measures of organization efficiency and effectiveness should be investigated.

One area of inquiry which immediately suggests itself is a study of school systems which employ a chief executive officer. Evidence from this study pointed to the observed degree of bureaucratization of a system as a consequence of this classification.

The results of this study give some evidence to the concept of a "system". That is, there is interdependence between parts or variables in an organization. Evidence indicates that the behavior of the leader affects the internal structure of an organization to quite an extent. Research designed to study the relationship of bureaucracy to other variables, as mentioned in a previous paragraph, would give further evidence in this regard.

#### For Educational Administrators

It is difficult to make recommendations for practice with regard to bureaucratization. Administrators must decide for themselves to what extent emphasis on this variable is desirable for their particular system. Research can assist them in attempting to determine the optimum level for differing situations. There are probably other causal factors of bureaucratization, although this study has demonstrated that the leadership style of the superintendent has considerable significance.

Of considerable importance is the finding that principals regard a superintendent who is a chief executive officer as exhibiting more positive leader behavior than one who is not. A point that could well be made is that all superintendents should be employed by school boards

and should be given full responsibility for the operation of the school system.

#### IV. CONCLUDING STATEMENT

The successful completion of this research involved the participation of many educators in the province of Saskatchewan. It is hoped that the findings of this study may be of benefit to them and others. If superintendents vary their behavior to present the best possible organizational pattern within which principals and teachers must work, benefits will probably accrue to all persons involved.

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**A P P E N D I X    A**

# LEADER BEHAVIOR DESCRIPTION QUESTIONNAIRE

Developed by staff members of  
The Ohio State Leadership Studies

Name of Leader Being Described \_\_\_\_\_

Name of Group Which He Leads \_\_\_\_\_

Your Name \_\_\_\_\_

On the following pages is a list of items that may be used to describe the behavior of your supervisor. Each item describes a specific kind of behavior, but does not ask you to judge whether the behavior is desirable or undesirable. This is not a test of ability. It simply asks you to describe, as accurately as you can, the behavior of your supervisor.

Note: The term, "*group*," as employed in the following items, refers to a department, division, or other unit of organization which is supervised by the person being described.

The term "*members*," refers to all the people in the unit of organization which is supervised by the person being described.

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**DIRECTIONS:**

- a. **READ** each item carefully.
- b. **THINK** about how frequently the leader engages in the behavior described by the item.
- c. **DECIDE** whether he always, often, occasionally, seldom or never acts as described by the item.
- d. **DRAW A CIRCLE** around one of the five letters following the item to show the answer you have selected.

**A—Always**

**B—Often**

**C—Occasionally**

**D—Seldom**

**E—Never**

- |   |   |   |   |   |   |
|---|---|---|---|---|---|
| 1. He does personal favors for group members.                             | A | B | C | D | E |
| 2. He makes his attitudes clear to the group.                             | A | B | C | D | E |
| 3. He does little things to make it pleasant to be a member of the group. | A | B | C | D | E |
| 4. He tries out his new ideas with the group.                             | A | B | C | D | E |
| 5. He acts as the real leader of the group.                               | A | B | C | D | E |
| 6. He is easy to understand.  | A | B | C | D | E |
| 7. He rules with an iron hand.  | A | B | C | D | E |
| 8. He finds time to listen to group members.                              | A | B | C | D | E |
| 9. He criticizes poor work.   | A | B | C | D | E |
| 10. He gives advance notice of changes.                                   | A | B | C | D | E |
| 11. He speaks in a manner not to be questioned.                           | A | B | C | D | E |
| 12. He keeps to himself.  | A | B | C | D | E |
| 13. He looks out for the personal welfare of individual group members.    | A | B | C | D | E |
| 14. He assigns group members to particular tasks.                         | A | B | C | D | E |
| 15. He is the spokesman of the group.                                     | A | B | C | D | E |
| 16. He schedules the work to be done.                                     | A | B | C | D | E |
| 17. He maintains definite standards of performance.                       | A | B | C | D | E |
| 18. He refuses to explain his actions.                                    | A | B | C | D | E |

19. He keeps the group informed.	A	B	C	D	E
20. He acts without consulting the group.	A	B	C	D	E
21. He backs up the members in their actions.	A	B	C	D	E
22. He emphasizes the meeting of deadlines.	A	B	C	D	E
23. He treats all group members as his equals.	A	B	C	D	E
24. He encourages the use of uniform procedures.	A	B	C	D	E
25. He gets what he asks for from his superiors.	A	B	C	D	E
26. He is willing to make changes.	A	B	C	D	E
27. He makes sure that his part in the organization is understood by group members.	A	B	C	D	E
28. He is friendly and approachable.	A	B	C	D	E
29. He asks that group members follow standard rules and regulations.	A	B	C	D	E
30. He fails to take necessary action.	A	B	C	D	E
31. He makes group members feel at ease when talking with them.	A	B	C	D	E
32. He lets group members know what is expected of them.	A	B	C	D	E
33. He speaks as the representative of the group.	A	B	C	D	E
34. He puts suggestions made by the group into operation.	A	B	C	D	E
35. He sees to it that group members are working up to capacity.	A	B	C	D	E
36. He lets other people take away his leadership in the group.	A	B	C	D	E
37. He gets his superiors to act for the welfare of the group members.	A	B	C	D	E
38. He gets group approval in important matters before going ahead.	A	B	C	D	E
39. He sees to it that the work of group members is coordinated.	A	B	C	D	E
40. He keeps the group working together as a team.	A	B	C	D	E

**A P P E N D I X    B**

**THE ORGANIZATIONAL STRUCTURE  
QUESTIONNAIRE**

**ALL INFORMATION IS STRICTLY CONFIDENTIAL AND WILL BE  
USED FOR EDUCATIONAL RESEARCH PURPOSES ONLY**

**DEPARTMENT OF EDUCATIONAL ADMINISTRATION  
UNIVERSITY OF ALBERTA  
EDMONTON**

**1968**



Directions

- (a) Read each item carefully.
- (b) Think about how frequently the described characteristic occurs in your school system.
- (c) Decide whether it occurs always, often, occasionally, seldom, or never.
- (d) Mark the appropriate letter on the I.B.M. scoring sheet.

A - Always	D - Seldom
B - Often	E - Never
C - Occasionally	

- 
- |   |   |   |   |   |   |
|---|---|---|---|---|---|
| 41. Principals and teachers rather than the superintendent are the final authority in deciding promotions or failures of pupils in their classes. | A | B | C | D | E |
| 42. Principals accept the superintendent's decision as the final authority on all matters relating to the operation of the system.                | A | B | C | D | E |
| 43. Standardized rules governing the behaviour of all teachers are laid down by the superintendent.   | A | B | C | D | E |
| 44. All questions of policy must be referred to the superintendent for his decision.  | A | B | C | D | E |
| 45. Principal's clear with central office personnel, such as an assistant superintendent before seeing the superintendent on a school matter.     | A | B | C | D | E |
| 46. Principals are held accountable for all equipment and supplies under their jurisdiction.  | A | B | C | D | E |
| 47. Principals must notify the central office whenever leaving the school on other than school business.  | A | B | C | D | E |
| 48. Principals make arrangements through central office in scheduling field trips.  | A | B | C | D | E |

- |     |  |   |   |   |   |   |
|-----|--|---|---|---|---|---|
| 49. | Principals prefer to have the superintendent make decisions.   | A | B | C | D | E |
| 50. | A principal can make decisions on his own without reference to the system manual of rules and regulations.             | A | B | C | D | E |
| 51. | The superintendent adheres strictly to the policies of the school system.  | A | B | C | D | E |
| 52. | The superintendent directs the principals as to the number and frequency of fire drills.                               | A | B | C | D | E |
| 53. | Clearcut standard procedures are used for handling parental complaints about teachers.                                 | A | B | C | D | E |
| 54. | The superintendent makes decisions and then announces them to the staff as final.                                      | A | B | C | D | E |
| 55. | The superintendent keeps a record of the performance of all the principals.  | A | B | C | D | E |
| 56. | The superintendent exercises strict control over the allocation of school keys.  | A | B | C | D | E |
| 57. | The superintendent makes decisions without prior consultation with principals.   | A | B | C | D | E |
| 58. | Principals requisition supplies through central office.  | A | B | C | D | E |
| 59. | Principals and teachers in this system are closely supervised by central office.                                       | A | B | C | D | E |
| 60. | Arrangements for use of the school facilities after school hours are coordinated through the central office.           | A | B | C | D | E |
| 61. | It is system wide policy that teachers are to be in their classrooms at a set time prior to the commencement of class. | A | B | C | D | E |
| 62. | Strict operating procedures are to be followed at all times.   | A | B | C | D | E |

- |     |   |   |   |   |   |   |
|-----|---|---|---|---|---|---|
| 63. | The superintendent constantly stresses to the principals the need for student control.  | A | B | C | D | E |
| 64. | The superintendent checks to see that decisions made at principals meeting are carried out.   | A | B | C | D | E |
| 65. | Principals and teachers are checked upon for possible violations of procedures or rules.  | A | B | C | D | E |
| 66. | Decisions about pupil placement in certain groups or programs is left to the teachers and principals.                                     | A | B | C | D | E |
| 67. | There is only one acceptable way of doing things - the superintendent's way.  | A | B | C | D | E |
| 68. | Principals use standardized record forms when submitting reports to the superintendent.   | A | B | C | D | E |
| 69. | In our system, even small matters are submitted to central office for a decision.   | A | B | C | D | E |
| 70. | Any possible decisions concerning the selection of textbooks are made by central office personnel rather than by teachers and principals. | A | B | C | D | E |
| 71. | The superintendent has more authority over teachers' behaviour than do principals.  | A | B | C | D | E |
| 72. | The superintendent makes clear to each principal his expectations for that principal's performance.                                       | A | B | C | D | E |
| 73. | Decisions principals make must have the approval of central office.   | A | B | C | D | E |
| 74. | There are strict system policies governing the attendance of students in all grades.  | A | B | C | D | E |
| 75. | Procedures established by central office are to be followed even if it takes longer to get the job done.                                  | A | B | C | D | E |

- |   |   |   |   |   |   |
|---|---|---|---|---|---|
| 76. Central office personnel supervise principals closely in their exercise of authority.   | A | B | C | D | E |
| 77. The school system has a manual of rules and regulations which must be followed.   | A | B | C | D | E |
| 78. Whatever situation arises, we have procedures to follow in dealing with it.   | A | B | C | D | E |
| 79. Written orders from higher up are followed unquestioningly.   | A | B | C | D | E |
| 80. Principals who have contact with parents and other citizens are instructed in proper procedures for greeting and talking with them. | A | B | C | D | E |
| 81. All principals are responsible to a central office person to whom he (she) reports regularly.                                       | A | B | C | D | E |
| 82. When an unusual problem arises the principal must refer the matter to a definite person within the central office.                  | A | B | C | D | E |
| 83. Principals are evaluated periodically to see how well they are doing.   | A | B | C | D | E |
| 84. Any decision I make has to have my superior's approval.   | A | B | C | D | E |
| 85. Most principals in this system make their own rules for school management.  | A | B | C | D | E |
| 86. Going through proper channels is constantly stressed.   | A | B | C | D | E |
| 87. A record of every principal's job performance is kept.  | A | B | C | D | E |
| 88. A principal who wants to make his own decisions would quickly become discouraged in this system.                                    | A | B | C | D | E |
| 89. Even small matters have to be referred to someone in central office for a final answer.   | A | B | C | D | E |
| 90. Decisions as to the hiring of teachers are made in the central office.  | A | B | C | D | E |

**A P P E N D I X      C**



8. Degree(s) held: \_\_\_\_\_
9. If you hold a Masters or a Doctoral degree, state its major field of study:  
\_\_\_\_\_
10. (a) Do you assign all other board employees their duties?  
Yes                      No                      (circle one)
- (b) Do all other employees of the board report to the board through you?  
Yes                      No                      (circle one)
11. Total number of principals in your system. \_\_\_\_\_
12. Total number of teachers in your system. \_\_\_\_\_
13. Total number of pupils in your system. \_\_\_\_\_
14. Approximate area (in square miles) of your city or unit. \_\_\_\_\_
15. Total population of your city or unit. \_\_\_\_\_

## BACKGROUND DATA (CENTRAL OFFICE PERSONNEL)

In order to guarantee the anonymity of those persons responding to these questionnaires the following measures will be employed: you are not required to place your name on the questionnaires; the analysis of data will be done through the use of a computer; upon the conclusion of this analysis information concerning the places of origin of data will be destroyed so that while it will be known from what city or unit the information comes there will be no possible way in which it can be traced back to a particular school or respondent. Since it is necessary to distinguish one city or unit from another, an identifying code letter has been placed on this page.

You are requested to answer all questions -- complete information is essential to the success of the present study.

Code \_\_\_\_\_

91. Sex:    A - Male;            B - Female.
92. Marital Status:    A - Single;            B - Married.
93. Age (as of last birthday):
- |                  |               |
|------------------|---------------|
| A - 30 or under, | B - 31 to 40, |
| C - 41 to 50,    | D - 51 to 60, |
| E - 61 or over.  |               |
94. Total number of years as a fulltime teacher:
- |                 |               |
|-----------------|---------------|
| A - 10 or less, | B - 11 to 15, |
| C - 16 to 20,   | D - 21 to 25, |
| E - 26 or over. |               |
95. Total number of years you have been a supervisor (including present year):
- |                 |               |
|-----------------|---------------|
| A - 5 or less,  | B - 6 to 10,  |
| C - 11 to 15,   | D - 16 to 20, |
| E - 21 or over. |               |
96. Number of years as supervisor under the present superintendent (including present year):
- |                |             |
|----------------|-------------|
| A - 1 to 2,    | B - 3 to 4, |
| C - 5 to 6,    | D - 7 to 8, |
| E - 9 or more. |             |



97. Total number of years of academic preparation beyond high school.
- |                |        |
|----------------|--------|
| A - 3 or less, | B - 4, |
| C - 5,         | D - 6, |
| E - 7.         |        |
98. Degree(s) held:
- |                   |                   |
|-------------------|-------------------|
| A - none,         | B - 1 bachelor's, |
| C - 2 bachelor's, | D - Masters,      |
| E - Doctorate.    |                   |
99. If you hold a Masters and/or a doctoral degree, was the major field of study educational administration?
- |          |         |
|----------|---------|
| A - Yes, | B - No. |
|----------|---------|
100. Grades supervised.
- |              |             |
|--------------|-------------|
| A - 1 to 12, | B - 1 to 8, |
| C - 9 to 12, | D - 1 to 6, |
| E - 7 to 12. |             |

## BACKGROUND DATA (PRINCIPAL)

In order to guarantee the anonymity of those persons responding to these questionnaires the following measures will be employed: you are not required to place your name on the questionnaires; the analysis of data will be done through use of a computer; upon the conclusion of this analysis information concerning the places of origin of the data will be destroyed so that while it will be known from what city or unit the information comes there will be no possible way in which it can be traced back to a particular school or respondent. Since it is necessary to distinguish one city or unit from another, an identifying code letter has been placed on this page.

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93. Age (as of last birthday):
- |                  |               |
|------------------|---------------|
| A - 30 or under, | B - 31 to 40, |
| C - 41 to 50,    | D - 51 to 60, |
| E - 61 or over.  |               |
94. Total number of years as a fulltime teacher:
- |                 |               |
|-----------------|---------------|
| A - 10 or less, | B - 11 to 15, |
| C - 16 to 20,   | D - 21 to 25, |
| E - 26 or over. |               |
95. Total number of years you have been a principal (including present year):
- |                 |               |
|-----------------|---------------|
| A - 5 or less,  | B - 6 to 10,  |
| C - 11 to 15,   | D - 16 to 20, |
| E - 21 or more. |               |

96. Number of years as Principal under the present superintendent (including present year):
- |                |             |
|----------------|-------------|
| A - 1 to 2,    | B - 3 to 4, |
| C - 5 to 6,    | D - 7 to 8, |
| E - 9 or more. |             |
97. Total number of years of academic preparation beyond high school.
- |                |        |
|----------------|--------|
| A - 3 or less, | B - 4, |
| C - 5,         | D - 6, |
| E - 7.         |        |
98. Degree(s) held:
- |                   |                  |
|-------------------|------------------|
| A - none,         | B - 1 bachelor's |
| C - 2 bachelor's, | D - Masters,     |
| E - Doctorate.    |                  |
99. If you hold a Masters and/or a doctoral degree, was the major field of study educational administration?
- |          |         |
|----------|---------|
| A - Yes, | B - No. |
|----------|---------|
100. Grades taught in your school:
- |              |             |
|--------------|-------------|
| A - 1 to 12, | B - 1 to 8, |
| C - 9 to 12, | D - 1 to 6, |
| E - 7 to 12. |             |
101. Percentage of time you are relieved of teaching duties for administrative supervisory tasks:
- |                   |                   |
|-------------------|-------------------|
| A - none,         | B - 25 % or less, |
| C - 26 % to 50 %, | D - 51 % to 75 %, |
| E - 75 % or over. |                   |

A P P E N D I X     D

THE PILOT STUDY

THE DEVELOPMENT OF THE ORGANIZATIONAL  
STRUCTURE QUESTIONNAIRE

Introduction

In May, 1967, seventy-four items which had been prepared and submitted to a judge were sent to ninety-three principals in seven different school systems in Alberta. Only fifty-five responses were received, as reported below.

TABLE XXIX  
NUMBER OF RESPONDENTS IN PILOT STUDY

System	Sent	Returned
1	15	9
2	15	10
3	11	8
4	7	5
5	22	10
6	15	10
7	8	3
Total	93	55

Discrimination Analysis

An alpha level of 0.01, one-tailed t-test was used to determine whether or not each item discriminated between the quarter of principals high and the quarter of principals with low total scores. This resulted in the deletion of the following items: 4, 14, 16, 22, 24, 25, 26, 31, 32, 34, 39, 43, 49, 53, 58, 60, 61, 62, 63,

67, 71, 72. Because of face validity, items 39 and 43 were retained for factor analysis.

### Item Correlation with Total Score

A Pearson product-moment correlation was calculated between each item and the total.<sup>1</sup> Only one additional item, 73, was deleted.

### Factor Analysis

In the factor analysis, 53 of the original 74 items were utilized, and a number of analyses were conducted. Essentially, an analysis of four factors, using the varimax rotation, appeared to be most meaningful.

The analysis resulted in clusterings of heavy item loadings within factors as shown in Table XXX.

TABLE XXX  
CLUSTERING OF ITEMS VARIMAX ROTATION:  
FIFTY-THREE ITEM MATRIX

Factor	1	2	3	4
	17	18	3	7
	20	23	5	8
	36	30	6	15
	37	35	10	28
	40	45	27	29
	41	54	47	33
	44	55	74	51
	48	59		52
	50	66		
	57	68		
	65			
	69			
	70			
Total	13	10	7	8

<sup>1</sup>  $r_{.99} = .308$  (one-tailed)

Items were deleted if they did not have a factor loading of greater than .400 on any factor, or if they had a loading of greater than .400 on more than one factor. In other words, an attempt was made to select the item which loaded significantly on one factor only.

In order to derive meaning from the four factors and the items, an article by D. S. Pugh et al was utilized.

These authors suggest that writers, in describing bureaucracies, have not specified in what sense they use the term bureaucracy, whether in terms of structural characteristics, behavioral characteristics, or in terms of goal achievement (1:297). Their prime concern, as with the present study, is with the structure of the organizational.

They posit six primary dimensions of organizational structure:

(1) Specialization. This refers to the division of labor within the organization. The two aspects here are the number of specialisms, and the degree of role specialization. These being the count of functions performed by specialists and differentiation of activities within each function, respectively.

(2) Standardization. This is basically concerned with procedures and roles. Standardization of procedures would be concerned with (a) decision seeking, (b) decision

making, (c) conveying of information, and (d) operational procedures. Standardization of roles would be concerned with the degree to which the organization prescribed (a) role definition and qualification for office, (b) role performance measurements, (c) titles for office and symbols of role status, and (d) rewards for role performance.

(3) Formalization. This distinguishes to what extent communications are expressed in writing. It can include: (a) statements of procedures, rules, roles, (b) operation of standardized procedures.

(4) Centralization. This concerns authority to make decisions affecting the organization. The authors here distinguish between formal authority -- stemming from ownership -- and real or personal authority -- which is assumed by experts in their sphere. Centralization involves: (a) control of resources, and (b) control of activities. The first measure of centralization would be the rate of restriction of control. In other words, control disappears as one moves away from the central office.

(5) Configuration. Basically, this is concerned with the authority structure which is most often described by an organization chart.

(6) Flexibility. This basically involves changes in organizational structure.

The four factors which evolved as a result of the



pilot study were examined in the light of the above structural variables.

Factor I -- The items appeared to be closely related to the description of "centralization". That is, control or decision-making authority was largely vested in the central office, and such authority diminished very sharply as one moved out from this office.

Factor II -- These items approached the meaning of "standardization of role" as described earlier. However, there were a number of items which were concerned with a principal's performance, or supervision of performance. While these latter items are concerned with the role of the principal, the word "standardization" is perhaps not the most appropriate.

Factor III -- The basic concern of these items appears to be the operational aspect of procedures or "formalization". While standardization of procedures is concerned with varying procedures, formalization deals with the reality of operationalizing them.

Factor IV -- Here, the items are related closely to standardization of procedures. "Procedures are standardized when there are rules or definitions that cover all circumstances and they apply invariably." (1:303)

Table XXXI gives the results of the factor analysis with the items classified as the basis of the four described dimensions.

TABLE XXXI

VARIMAX ROTATION: FOUR LOADINGS OF FOUR FACTOR  
ANALYSIS OF FIFTY-THREE ORGANIZATIONAL  
STRUCTURE QUESTIONNAIRE ITEMS

Subscale	Item	Communi- alities	I	II	III	IV
Central- ization	54	.445	.637	.018	.196	.028
	57	.462	.616	-.124	.248	.079
	66	.496	.645	-.035	-.151	.238
	67	.631	.724	.072	-.003	.319
	69	.451	.626	.207	.122	-.044
	70	.491	.523	.332	.327	.021
	71	.337	.521	.201	.118	.107
	75	.417	.522	.267	.270	.014
	76	.616	.659	.368	-.004	.216
	82	.479	.501	.384	.246	.139
	85	.510	.653	.220	.005	.189
	88	.595	.738	.224	-.000	.009
	89	.547	.692	.245	-.052	.076
Standard- ization of roles	55	.496	.096	.686	.022	.122
	59	.388	.291	.427	.170	.304
	63	.497	.106	.632	.232	.180
	65	.466	.178	.579	.246	.197
	72	.461	.177	.611	-.075	.227
	79	.562	.333	.509	.246	.363
	80	.341	.171	.495	.006	.257
	83	.591	-.002	.761	.081	.072
	86	.388	.229	.527	.239	-.022
	87	.369	.218	.541	.017	.171
Formal- ization	43	.548	.152	.276	.647	.177
	44	.577	.358	.169	.569	.311
	45	.578	.140	.039	.746	.024
	49	.500	-.246	.294	.588	.090
	60	.458	-.002	.223	.558	.312
	74	.439	.337	.226	.505	.143
	90	.447	.335	.151	.556	-.058
Standard- ization of procedures	46	.249	-.075	.251	.064	.420
	47	.404	.015	.048	.293	.561
	53	.293	.171	.198	-.004	.474
	61	.434	.076	.083	.232	.606
	62	.462	.092	.135	.094	.653
	64	.332	.166	.285	.189	.432
	77	.406	-.185	.212	.142	.554
	78	.569	.182	.142	-.053	.716

### Reliability

The factor analysis provides evidence to support the internal consistency of subscales. In the study a measure of reliability was obtained by use of the Spearman-Brown split-half method.

### Validity

Item correlation with the total is a measure of item validity. Using data from the major study, correlations of items with the total and the subscales were examined.

### Conclusion

The discrimination, correlation, and factor analysis provide empirical support for the items selected for the Organizational Structure Questionnaire.

The final form of the scale consisted of fifty items. In addition to the thirty-eight items listed in Table XXXI, twelve others were included as "dummy" items.

## REFERENCES FOR PILOT STUDY

- (1) Pugh, D. S. et al. "A Conceptual Scheme for Organizational Analysis," Administrative Science Quarterly, 8:289-315, December, 1963.

**THE ORGANIZATIONAL STRUCTURE  
QUESTIONNAIRE**

**THE INITIAL SCALE**

1. Principals and teachers rather than the superintendent are the final authority in deciding promotions or failures of pupils in their classes. A F O S N
2. Principals accept the superintendent's decision as the final authority on all matters relating to the operation of the system. A F O S N
3. Standardized rules governing the behavior of all teachers are laid down by the superintendent. A F O S N
4. Principals send requests for extra custodial services through proper channels. A F O S N
5. All questions of policy must be referred to the superintendent for his decision. A F O S N
6. Principals clear with central office personnel, such as an assistant superintendent before seeing the superintendent on a school matter. A F O S N
7. Principals are held accountable for all equipment and supplies under their jurisdiction. A F O S N
8. Principals must notify the central office whenever leaving the school on other than school business. A F O S N
9. Principals make arrangements through central office in scheduling field trips. A F O S N
10. Principals prefer to have the superintendent make decisions. A F O S N
11. Principals clear with the superintendent any information for public release. A F O S N
12. The superintendent adheres strictly to the policies of the school system. A F O S N
13. The superintendent directs the principals as to the number and frequency of fire drills. A F O S N

- |  |           |
|--|-----------|
| 14. Visitors to any of the schools must have clearance from the central office.  | A F O S N |
| 15. Clearcut standard procedures are used for handling parental complaints about teachers.   | A F O S N |
| 16. The superintendent influences the principals more than they influence him.   | A F O S N |
| 17. The superintendent makes decisions and then announces them to the staff as final.  | A F O S N |
| 18. The superintendent keeps a record of the performances of all the principals.   | A F O S N |
| 19. The superintendent exercises strict control over the allocation of school keys.  | A F O S N |
| 20. The superintendent makes decisions without prior consultation with principals.   | A F O S N |
| 21. Principals requisition supplies through central office.  | A F O S N |
| 22. A definite standard of evaluating is used in assessing teachers in this system.  | A F O S N |
| 23. Principals and teachers in this system are closely supervised by central office.   | A F O S N |
| 24. The superintendent and other central office personnel visit school and classrooms without consulting principals and teachers beforehand. | A F O S N |
| 25. The superintendent makes decisions in accordance with advice he receives from his staff.   | A F O S N |
| 26. The principal's prescribed duties clearly delineate his areas of authority.  | A F O S N |

27. Arrangements for use of the school facilities after school hours are coordinated through the central office. A F O S N
28. It is system wide policy that teachers are to be in their classrooms at a set time prior to the commencement of class. A F O S N
29. Strict operating procedures are to be followed at all times. A F O S N
30. The superintendent constantly stresses to the principals the need for student control. A F O S N
31. Principals and teachers rigidly enforce rules concerning pupil behavior. A F O S N
32. The superintendent delegates responsibility for decision making to the principals. A F O S N
33. The superintendent checks to see that decisions made at principals meeting are carried out. A F O S N
34. Going through proper channels is stressed. A F O S N
35. Principals and teachers are checked upon for possible violations of procedures or rules. A F O S N
36. Decisions about pupil placement in certain groups or programs is left to the teachers and principals. A F O S N
37. There is only one acceptable way of doing things - the superintendent's way. A F O S N
38. Principals use standardized record forms when submitting reports to the superintendent. A F O S N
39. Reports are submitted only when called for by the superintendent. A F O S N



- |   |   |   |   |   |   |
|---|---|---|---|---|---|
| 40. In our system, even small matters are submitted to central office for a decision.   | A | F | O | S | N |
| 41. Any possible decisions concerning the selection of textbooks are made by central office personnel rather than by teachers and principals.                                   | A | F | O | S | N |
| 42. A principal can make decisions on his own without reference to the systems manual of rules and regulations.   | A | F | O | S | N |
| 43. Agendas for principals meeting are drawn up by central office personnel.  | A | F | O | S | N |
| 44. The superintendent has more authority over teachers' behavior than do principals.   | A | F | O | S | N |
| 45. The superintendent makes clear to each principal his expectations for that principal's performance.   | A | F | O | S | N |
| 46. Decisions principals make must have the approval of central office.   | A | F | O | S | N |
| 47. There are strict system policies governing the attendance of students in all grades.  | A | F | O | S | N |
| 48. Procedures established by central office are to be followed even if it takes longer to get the job done.  | A | F | O | S | N |
| 49. In the event of a discrepancy between the statements of a principal and other central office personnel, the superintendent gives the benefit of the doubt to the principal. | A | F | O | S | N |
| 50. Central office personnel supervise principals closely in their exercise of authority.   | A | F | O | S | N |
| 51. The school system has a manual of rules and regulations which must be followed.   | A | F | O | S | N |

- |   |   |   |   |   |   |
|---|---|---|---|---|---|
| 52. Whatever situation arises, we have procedures to follow in dealing with it.   | A | F | O | S | N |
| 53. In order to get a promotion, you have to "know" somebody.   | A | F | O | S | N |
| 54. Written orders from higher up are followed unquestioningly.   | A | F | O | S | N |
| 55. Principals who have contact with parents and other citizens are instructed in proper procedures for greeting and talking with them. | A | F | O | S | N |
| 56. All principals are responsible to a central office person to whom he (she) reports regularly.                                       | A | F | O | S | N |
| 57. When an unusual problem arises the principal must refer the matter to a definite person within the central office.                  | A | F | O | S | N |
| 58. Promotions are based entirely on how well a person does his job.  | A | F | O | S | N |
| 59. Principals are evaluated periodically to see how well they are doing.   | A | F | O | S | N |
| 60. Innovation and experimentation in teaching methods and materials is encouraged in this system.                                      | A | F | O | S | N |
| 61. Persons are not promoted simply because they have "pull".   | A | F | O | S | N |
| 62. Red tape is not often a problem in getting a job done.  | A | F | O | S | N |
| 63. Past administrative experience plays a large part in the assignment of a principal in this system.                                  | A | F | O | S | N |
| 64. Any decision I make has to have my superior's approval.   | A | F | O | S | N |
| 65. Most principals in this system make their own rules for school management.  | A | F | O | S | N |
| 66. Going through proper channels is constantly stressed.   | A | F | O | S | N |

67. We are encouraged to become very friendly with groups and individuals outside the school. A F O S N
68. A record of every principal's job performance is kept. A F O S N
69. A principal who wants to make his own decisions would quickly become discouraged in this system. A F O S N
70. Even small matters have to be referred to someone in central office for a final answer. A F O S N
71. No matter how special a teacher's, a pupil's, or a parent's problem appears to be, he is to be treated the same way as anyone else. A F O S N
72. People are to be treated within the rules, no matter how serious a problem they may have. A F O S N
73. There isn't much chance for a promotion unless you are "in" with the administration. A F O S N
74. Decisions as to the hiring of teachers are made in the central office. A F O S N

A P P E N D I X      E

SUPPLEMENTARY TABLES DESCRIBING SAMPLE

TABLE XXXII  
AGE OF SUPERINTENDENTS

System	30 or under	31-40	41-50	51-60	61+
1		*			
2				*	
3			*		
4				*	
5				*	
6				*	
7				*	
8	Information not available.				
9					*
10			*		
11				*	
12				*	
13				*	
14				*	
15			*		
16				*	
17			*		
18				*	
19			*		
20		*			
21		*			
22					*
23			*		
24	Information not available.				
25			*		
26					*
27			*		
28			*		

TABLE XXXIII

NUMBER OF YEARS OF ADMINISTRATIVE EXPERIENCE  
OF SUPERINTENDENTS

System	11 or less	12-16	17-21	22-30	31 or more
1		*			
2			*		
3		*			
4		*			
5				*	
6			*		
7		*			
8	Information not available.				
9					*
10		*			
11			*		
12			*		
13				*	
14					*
15			*		
16		*			
17			*		
18					*
19		*			
20	*				
21	*				
22		*			
23			*		
24	Information not available.				
25			*		
26			*		
27			*		
28	*				

TABLE XXXIV

NUMBER OF YEARS SUPERINTENDENTS HAVE SERVED IN  
THE SYSTEM WHERE THEY ARE CURRENTLY LOCATED

System	2	3 - 4	5 - 6	7 - 8	9+
1		*			
2				*	
3			*		
4					*
5					*
6					*
7			*		
8	Information not available.				
9					*
10		*			
11					*
12					*
13					*
14					*
15			*		
16			*		
17		*			
18				*	
19		*			
20	*				
21			*		
22				*	
23					*
24					*
25	*				
26		*			
27			*		
28	*				

TABLE XXXV

POST SECONDARY TRAINING OF SUPERINTENDENTS<sup>a</sup>

System	Bachelor's Degree (1)	Bachelor's Degree (2)	Masters Degree	Doctoral Degree
1		*		
2		*		
3			* <sup>b</sup>	
4			*	
5		*		
6		*		
7		*		
8		*		
9		*		
10		*		
11		*		
12		*		
13		*		
14		*		
15		*		
16		*		
17		*		
18		*		
19		*		
20				* <sup>b</sup>
21		*		
22		*		
23		*		
24				*
25		*		
26		*		
27		*		
28			*	

<sup>a</sup> Of the 6 superintendents who completed the information, but from who's system an insufficient number of principals responded, 5 had two bachelor's degrees and 1 had a master's degree.

<sup>b</sup> With the major field of study being Educational Administration.



TABLE XXXVI

## NUMBER OF PRINCIPALS IN EACH SCHOOL SYSTEM

System	10 or less	11-20	21-30	31-40	41+
1		*			
2	*				
3		*			
4		*			
5	*				
6		*			
7	*				
8		*			
9	*				
10		*			
11	*				
12	*				
13	*				
14	*				
15		*			
16		*			
17		*			
18		*			
19		*			
20		*			
21	*				
22					*
23			*		
24				*	
25			*		
26	*				
27	*				
28	*				

TABLE XXXVII

## NUMBER OF TEACHERS IN EACH SYSTEM

System	100 or less	101- 200	201- 400	401- 500	500+
1		*			
2		*			
3	*				
4	*				
5	*				
6		*			
7		*			
8	Information not available.				
9	*				
10		*			
11		*			
12	*				
13		*			
14		*			
15		*			
16	*				
17		*			
18		*			
19		*			
20			*		
21	*				
22					*
23			*		
24					*
25			*		
26		*			
27	*				
28		*			

TABLE XXXVIII

## NUMBER OF STUDENTS IN EACH SYSTEM

System	1,000 or less	1,001- 2,000	2,001- 3,000	3,001- 4,000	4,001 or more
1			*		
2			*		
3			*		
4		*			
5		*			
6			*		
7				*	
8	Information not available.				
9			*		
10				*	
11			*		
12		*			
13				*	
14			*		
15			*		
16			*		
17				*	
18			*		
19				*	
20					*
21		*			
22					*
23					*
24					*
25					*
26				*	
27		*			
28		*			

TABLE XXXIX

APPROXIMATE TOTAL POPULATION WITHIN THE SYSTEM'S  
GEOGRAPHIC BOUNDARIES

System	6,000 or less	6,000- 10,000	10,000- 20,000	20,000- 50,000	50,000+
1		*			
2	*				
3	*				
4		*			
5	*				
6		*			
7			*		
8	Information not available.				
9		*			
10			*		
11			*		
12		*			
13			*		
14		*			
15		*			
16		*			
17			*		
18		*			
19			*		
20				*	
21				*	
22					*
23					*
24					*
25					*
26			*		
27		*			
28			*		

**A P P E N D I X    F**

TABLE XL  
SUMMARY OF OSQ DATA

System	Centralization		Role Performance	
	Mean	Variance	Mean	Variance
1	18.4000	14.2402	16.2000	26.1602
2	18.5000	17.2500	14.6250	16.4844
3	19.7143	22.2043	15.8571	24.4080
4	20.7500	22.9375	14.7500	10.1875
5	21.6667	15.8894	20.3333	24.2224
6	19.8750	18.8594	14.5000	15.5000
7	18.7143	17.3472	17.1429	14.4084
8	18.8333	12.4724	16.8333	10.1392
9	21.0000	20.5713	15.2857	27.9182
10	25.1667	34.3059	18.0000	33.5000
11	28.1429	32.9800	20.1429	17.2656
12	25.6667	17.5562	18.8333	23.4724
13	22.1250	26.8594	16.0000	25.5000
14	23.0000	21.3333	13.6667	22.2222
15	27.0000	45.3333	17.5000	7.2500
16	24.1250	25.8594	20.1250	33.6094
17	20.3333	23.5559	11.7778	5.5062
18	21.8571	64.6943	15.2857	19.6327
19	21.2857	25.6331	16.0000	4.0000
20	22.1429	9.5510	15.2857	21.9184
21	24.3333	11.8892	16.3333	19.8889
22	27.7250	53.4500	15.9750	20.2242
23	28.7143	98.0615	17.9286	36.4954
24	19.0294	19.3230	16.0294	18.9111
25	17.9412	16.6440	13.4118	14.7128
26	18.4286	9.6741	12.4286	26.5306
27	21.0000	24.6665	13.1667	5.1389
28	27.0000	38.6665	18.3333	30.8892

System	Standardization of Procedures		Total	
	Mean	Variance	Mean	Variance
1	17.6000	15.0403	52.2000	40.5603
2	13.8750	14.8594	47.0000	57.2500
3	20.0000	16.5713	55.5714	120.8167
4	13.6250	17.9844	49.1250	69.8594
5	19.5000	38.2500	61.5000	145.9165
6	17.6250	6.9844	52.0000	74.7500
7	17.8571	19.8372	53.7143	105.0620
8	17.5000	6.9165	53.1667	13.8066

System	Standardization of Procedures		Total	
	Mean	Variance	Mean	Variance
9	13.8571	9.5510	50.1429	130.4084
10	21.0000	9.5000	64.1667	120.1406
11	21.5714	22.8164	69.8571	151.5547
12	19.6667	24.2227	64.1667	163.1406
13	16.3750	16.7344	54.5000	145.5000
14	22.5000	11.9165	59.1667	113.8069
15	21.1667	17.1392	65.6667	55.5547
16	24.7500	18.4375	69.0000	183.5000
17	12.8889	12.0988	45.0000	77.7776
18	17.2857	20.7759	54.4286	171.9607
19	18.2857	27.0615	55.5714	112.2451
20	26.2857	7.9187	63.7143	59.0610
21	22.1667	4.1394	62.8333	60.1394
22	27.0000	21.0999	70.7000	186.1094
23	26.0000	15.5713	72.6429	329.8047
24	23.4706	18.1904	58.5294	87.5442
25	20.2941	23.9727	51.6470	108.7000
26	20.0000	4.2856	50.8571	39.2664
27	20.8333	10.4727	55.0000	78.6665
28	25.3333	24.8892	70.6667	242.8906

A P P E N D I X      G



TABLE XLI  
SUMMARY OF LBDQ DATA

System	Consideration		Initiating Structure		Total	
	Mean	Variance	Mean	Variance	Mean	Variance
1	73.4000	34.6406	31.8000	12.5608	105.2000	22.9609
2	68.5000	98.0000	26.7500	10.1875	95.2500	144.1875
3	75.7143	25.9219	30.5714	11.9592	106.2857	41.6367
4	56.5000	108.5000	24.1250	38.1094	80.6250	238.7344
5	72.3333	100.8906	31.8333	33.1394	104.1667	200.4727
6	64.2500	59.1875	30.0000	10.0000	94.2500	101.6875
7	72.4286	69.1055	30.8571	10.9805	103.2857	112.7773
8	64.5000	203.2500	30.3333	16.2227	94.8333	256.4727
9	64.8571	108.1250	27.0000	14.8569	91.8571	187.8398
10	64.9167	68.9102	34.0000	9.3333	98.9167	92.5781
11	61.4286	57.3892	31.8571	10.6946	93.2857	50.2031
12	66.8333	81.1406	31.8333	12.4727	98.6667	135.5586
13	61.0000	70.0000	31.7500	20.6875	92.7500	145.9375
14	74.3333	22.8906	30.6667	52.2229	105.0000	111.0000
15	57.5000	248.2500	31.3333	21.5559	88.8333	327.1406
16	71.1250	60.6094	33.8750	6.1094	105.0000	62.0000
17	70.4444	49.8008	27.1111	23.6550	97.5555	105.8047
18	67.4286	138.8164	29.1429	25.8372	96.5714	183.6719
19	69.8571	25.8398	33.4286	5.3884	103.2857	27.0664
20	72.2143	70.7422	32.1429	6.6941	104.3571	85.2305
21	71.0000	62.3320	34.0000	28.3333	105.0000	67.3320
22	60.6750	78.8708	32.0000	16.3999	92.6750	90.4219
23	64.2143	144.4531	36.4286	14.1030	100.6429	96.8047
24	79.4118	45.5352	29.5882	13.4780	109.0000	65.6445
25	76.4706	38.0156	30.1765	8.4983	106.6470	50.3477
26	75.8571	16.1250	31.0000	16.5713	106.8571	55.8398
27	73.5000	27.5820	28.6667	18.2229	102.1667	19.1406
28	68.8333	66.8086	33.0000	48.3333	101.8333	29.1406

## A P P E N D I X    H

### SUPPLEMENTARY TABLES

TABLE XLII  
CORRELATIONS OF OSQ ITEMS WITH SUBSCALE SCORES AND  
WITH THE TOTAL SCORE<sup>a</sup>

Item	Factor I	Factor II	Factor III	Total
43			.6443	.5978
44			.6621	.5609
45			.5763	.3677
54	.7134			.6442
55		.7713		.5169
57	.6576			.5024
60			.5993	.3978
61			.7010	.4466
62			.5711	.5085
63		.6128		.4942
64		.6222		.4162
66	.4327			.3452
67	.7000			.5373
69	.6729			.6271
70	.6161			.5095
71	.6095			.5245
72		.6187		.5499
75	.6430			.5857
76	.6033			.6280
77			.5892	.5442
83		.7591		.5243
87		.7703		.5252
88	.7606			.6641
89	.6493			.5976

<sup>a</sup> All coefficients are significant beyond the .01 level ( $r_{.99} = .154$ ).

TABLE XLIII  
CORRELATIONS OF LBDQ ITEMS WITH SUBSCALE SCORES  
AND TOTAL SCORE\*

Item	Factor I	Factor II	Total
1	.4862		.4764
3	.7099		.6702
4	.6554		.6288
6	.7223		.6814
7		.4894	-.2132 <sup>a</sup>
8	.7261		.6485
9		.5306	.1148 <sup>a</sup>
12	.6234		.5637
13	.6323		.6338
14		.4368	.3271
16		.6137	.3186
17		.6278	.5664
18	.6967		.5869
20	.6177		.5022
21	.6442		.6311
22		.6568	.3309
23	.7568		.6688
24		.4869	.1570
26	.6731		.5804
27	.5487		.5886
28	.7604		.6606
29		.6089	.2529
31	.7113		.6115
34	.7007		.6374
35		.6197	.4754
38	.7463		.6758
39	.6824		.7117

\*  $r_{.99} = +.154$

<sup>a</sup> not significant at the .01 level.

TABLE XLIV

SUMMARY OF PROBABILITIES OF SIGNIFICANT DIFFERENCES OF  
MEANS ON THE OSQ WITH SCHOOL SYSTEMS DIVIDED INTO TWO  
GROUPS ON THE BASIS OF THE LARGER UNIT-CITY DICHOTOMY

Item	P Two-Tail	Welch T Prime P Two-Tail
43	0.00	0.00
44	0.00	0.00
45	0.00	0.00
54	0.00	0.00
55	0.17	0.17
57	0.01	0.01
60	0.00	0.00
61	0.00	0.00
62	0.39	0.39
63	0.00	0.00
64	0.18	0.18
66	0.00	0.04
67	0.76	0.76
69	0.52	0.52
70	0.01	0.01
71	0.24	0.24
72	0.02	0.02
75	0.08	0.08
76	0.67	0.66
77	0.00	0.00
83	0.62	0.61
87	0.45	0.45
88	0.47	0.45
89	0.28	0.27

TABLE XLV

SUMMARY OF PROBABILITIES OF SIGNIFICANT DIFFERENCES OF  
 MEANS ON THE OSQ WITH SCHOOL SYSTEMS CLASSIFIED ON  
 WHETHER OR NOT THE SUPERINTENDENT IS THE  
 CHIEF EXECUTIVE OFFICER

Item	P Two-Tail	Welch T Prime P Two-Tail
43	0.00	0.00
44	0.00	0.00
45	0.00	0.00
54	0.00	0.00
55	0.48	0.48
57	0.00	0.00
60	0.00	0.00
61	0.00	0.00
62	0.72	0.72
63	0.00	0.00
64	0.60	0.60
66	0.01	0.01
67	0.26	0.27
69	0.24	0.24
70	0.00	0.00
71	0.24	0.24
72	0.00	0.00
75	0.04	0.04
76	0.79	0.79
77	0.00	0.00
83	0.93	0.93
87	0.98	0.97
88	0.20	0.20
89	0.11	0.12

TABLE XLVI

SUMMARY OF PROBABILITIES OF SIGNIFICANT DIFFERENCES OF  
MEANS ON THE LBDQ WITH SCHOOL SYSTEMS CLASSIFIED  
ON THE BASIS OF THE LARGER UNIT-CITY DICHOTOMY

Item	P Two-Tail	Welch T Prime P Two-Tail
1	0.72	0.72
3	0.00	0.00
4	0.00	0.00
6	0.00	0.00
7	0.00	0.00
8	0.03	0.03
9	0.14	0.14
12	0.57	0.57
13	0.02	0.02
14	0.02	0.02
16	0.01	0.01
17	0.00	0.00
18	0.11	0.11
20	0.75	0.75
21	0.03	0.03
22	0.12	0.12
23	0.04	0.04
24	0.17	0.17
26	0.00	0.00
27	0.00	0.00
28	0.30	0.30
29	0.89	0.89
31	0.07	0.07
34	0.49	0.49
35	0.05	0.05
38	0.11	0.11
39	0.01	0.01

TABLE XLVII

SUMMARY OF PROBABILITIES OF SIGNIFICANT DIFFERENCES OF  
MEANS ON THE LBDQ WITH SCHOOL SYSTEMS CLASSIFIED ON  
THE BASIS OF WHETHER OR NOT THE SUPERINTENDENT IS  
THE CHIEF EXECUTIVE OFFICER

Item	P Two-Tail	Welch T Prime P Two-Tail
1	0.74	0.74
3	0.02	0.02
4	0.00	0.00
6	0.00	0.00
7	0.00	0.00
8	0.13	0.13
9	0.21	0.21
12	0.24	0.24
13	0.02	0.02
14	0.03	0.02
16	0.00	0.00
17	0.00	0.00
18	0.28	0.28
20	0.65	0.65
21	0.10	0.10
22	0.21	0.20
23	0.21	0.21
24	0.17	0.17
26	0.01	0.01
27	0.00	0.00
28	0.78	0.78
29	0.68	0.68
31	0.48	0.48
34	0.72	0.72
35	0.04	0.04
38	0.54	0.54
39	0.06	0.06