An Examination of Relationships of Superintendent's Role Perception, School District Population Size and School District Wealth to Central Office Administrative Staff Size, Organizational Structure, and Staff Utilization

Morven Simon Welton Ngaiyaye
Loyola University Chicago

Recommended Citation
Dissertations. Paper 1543.
http://ecommons.luc.edu/luc_diss/1543
AN EXAMINATION OF RELATIONSHIPS OF
SUPERINTENDENT'S ROLE PERCEPTION,
SCHOOL DISTRICT POPULATION SIZE AND
SCHOOL DISTRICT WEALTH TO CENTRAL OFFICE
ADMINISTRATIVE STAFF SIZE, ORGANIZATIONAL
STRUCTURE, AND STAFF UTILIZATION

by

Morven Simon Welton Ngaiyaye, B.S.; M.A.

A Dissertation Submitted to the Faculty of the
Graduate College of Loyola University of Chicago
in Partial Fulfillment of the Requirements for the
Degree of Doctor of Philosophy
ACKNOWLEDGEMENTS

The author wishes to express his gratitude to Dr. Jasper J. Valenti, Associate Dean, Committee Chairman; and Dr. Robert Monks, Department of Administration and Supervision, Co-Chairman, for the expert guidance, support, understanding and encouragement provided throughout the study and throughout the writer's residency at Loyola University of Chicago.

The author further wishes to acknowledge the invaluable contributions made by the other members of his committee, Dr. Melvin P. Heller, Department Chairman, Administration and Supervision; and Dr. Max Bailey, Department of Administration and Supervision.

The writer feels particularly indebted and appreciative to Dr. Jack Kavanagh, Department of Foundations; and Dr. Jerry A. Jenkins, Research Analyst, Institute for Educational Research, Downers Grove. The suggestions and help provided by these friends in the design of the study, analysis of the data, and interpretation of the statistical results made the completion of this study possible.

For their suggestions and help in the development and validation of the instrument used in gathering data, appreciation is extended to the following: Dr. Edward Rancic, Lecturer in Administration and Supervision and Superintendent of Schools, Palos Heights; Dr. Wesley
Sheppard, Superintendent of Schools, Zion Elementary School District; Dr. Richard Short, Superintendent of Schools, Maine Township High School District; Dr. Earle Wiltse, Superintendent of Schools, St. Charles School System, Dr. Wayne Riggs, Superintendent of Schools, Rich Township High School District; Mr. Dale Love, Business Manager, Rich Township School District, Mr. Stephen Dotty, Executive Secretary, the Illinois Association of School Boards, and Dr. Allan J. Thomas, Midwest Administration Center, University of Chicago.

Special thanks are extended to Sister Demetria Lodge whose patience and expertise in typing can be witnessed on the pages of this document; to Mr. John Cheng, Systems Information Analyst and Manager, Computer Department, Loyola University, for helping with programming and computer work; and to Miss Sharon Green, who provided assistance in key-punching.

Appreciation is extended also to the two hundred sixty-five school superintendents who participated in the study and to the author's students, for helping with the paper work, particularly Georgianne Cerese, Amy Ghetto, Laurie Mullen and Lindsay Wentz of Daniel Wright School in Lincolnshire.

The greatest appreciation is extended to all the relatives, friends, and instructors who have supported and wished the writer well throughout his educational career.
VITA

The author, Morven Simon Welton Ngaiyaye, is the son of Simon Simon Ngaiyaye of Malawi, Africa.

His elementary education was in Malawi schools; secondary education at Solusi, Bulawayo, Rhodesia, where he completed the Joint Board Matriculation Certificate of the South African Universities. His teacher training was at the British Teachers College in Zomba, Malawi.

From 1962 to 1966, he was an ASPAU scholar at the University of Nebraska at Lincoln, where he received the degree of Bachelor of Science in Mathematics. In August, 1968, he was awarded the Master of Arts degree from the University of Nebraska.

The author has been a mathematics instructor in various public schools in Nebraska and Illinois. In 1971-1972, he served as an assistant principal intern at Immaculate Heart of Mary Girls High School, Westchester, Illinois. In 1972-73, he served as an administrative intern in the office of superintendent of public schools in Hinsdale, Illinois.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td></td>
</tr>
<tr>
<td>INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>Purpose of the Study</td>
<td>5</td>
</tr>
<tr>
<td>Hypotheses</td>
<td>6</td>
</tr>
<tr>
<td>Definition of Terms</td>
<td>7</td>
</tr>
<tr>
<td>Limitations of the Study</td>
<td>9</td>
</tr>
<tr>
<td>Methodology of the Study</td>
<td>9</td>
</tr>
<tr>
<td>Organization of the Study</td>
<td>10</td>
</tr>
<tr>
<td>II</td>
<td></td>
</tr>
<tr>
<td>REVIEW OF THE RELATED LITERATURE</td>
<td>12</td>
</tr>
<tr>
<td>Central Office Staffing Patterns</td>
<td>12</td>
</tr>
<tr>
<td>The Role of the Superintendent</td>
<td>24</td>
</tr>
<tr>
<td>Leadership</td>
<td>24</td>
</tr>
<tr>
<td>Policy-Making</td>
<td>27</td>
</tr>
<tr>
<td>Innovation</td>
<td>28</td>
</tr>
<tr>
<td>Decision-Making</td>
<td>31</td>
</tr>
<tr>
<td>Technician-Expert</td>
<td>32</td>
</tr>
<tr>
<td>Organization-Man</td>
<td>33</td>
</tr>
<tr>
<td>Administrative Organization Structure</td>
<td>34</td>
</tr>
<tr>
<td>and Staff Utilization</td>
<td>34</td>
</tr>
<tr>
<td>Organization Structure</td>
<td>34</td>
</tr>
<tr>
<td>Staff Utilization</td>
<td>40</td>
</tr>
<tr>
<td>Summary</td>
<td>45</td>
</tr>
<tr>
<td>III</td>
<td></td>
</tr>
<tr>
<td>THE RESEARCH PROCEDURE</td>
<td>46</td>
</tr>
<tr>
<td>The General Plan and Analytical Methodology</td>
<td>47</td>
</tr>
<tr>
<td>The General Plan</td>
<td>47</td>
</tr>
<tr>
<td>The Interviews</td>
<td>49</td>
</tr>
<tr>
<td>Analysis of Data</td>
<td>51</td>
</tr>
<tr>
<td>Reviewing Related Literature and Developing an Instrument for Measuring Role Perception</td>
<td>52</td>
</tr>
<tr>
<td>Review of the Literature</td>
<td>52</td>
</tr>
<tr>
<td>Developing the Instrument</td>
<td>54</td>
</tr>
<tr>
<td>Part A</td>
<td>55</td>
</tr>
<tr>
<td>Part B</td>
<td>57</td>
</tr>
<tr>
<td>Field Testing</td>
<td>59</td>
</tr>
<tr>
<td>The Investigation</td>
<td>61</td>
</tr>
</tbody>
</table>
IV ANALYSIS OF DATA

Introduction ........................................ 64
Major Analysis of Data ................................. 71
Simple Effects and Interaction
Effects Analysis ........................................ 76
Analysis of Relationship of Role Perception
of the Superintendent on the Size of
Central Office Administrative Staff ............ 78
Analysis of Relationship of Role Perception
of the Superintendent to number of Author-
ity Levels ............................................ 82
Analysis of Relationship of Role Perception
to Span of Supervision ............................... 85
Analysis of Relationship of Role Perception
to Number of Line Officers ......................... 88
Analysis of Relationship of Role Perception
to Number of Staff Officers ....................... 91
Analysis of Relationship of Role Perception
to Number of Vertical Officers .................... 94
Analysis of Role Perception to Number of
Horizontal Officers ................................... 97
Interaction Effects Profiles ......................... 100
  Geometric Profile 1 ................................ 100
  Geometric Profile 2 ................................ 100
  Geometric Profile 3 ................................ 102
  Geometric Profile 4 ................................ 102
  Geometric Profile 5 ................................ 102
  Geometric Profile 6 ................................ 106
  Geometric Profile 7 ................................ 106
Analysis of Results of Interviews ................. 110
  Titles, Functions and Lines
  of Responsibility .................................. 111
  Adequacy of Number of Administrative
  Personnel ........................................... 113
  Criteria Used In Expanding
  Administrative Team ................................ 113
  Factors Preventing School Systems
  from Getting Additional Help .................... 114
  Changes Contemplated by Superintendents .... 114
  Summary ............................................. 116

V SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS .... 121

  Summary ............................................. 121
  Major Findings ..................................... 124
  Recommendations for Further Research ........ 124
  Recommendations for Superintendents
  and School Boards .................................. 147

BIBLIOGRAPHY ........................................ 150

APPENDICES ......................................... 154
  A. Summary of Table of Analysis of
     Variance on Effects of Factor C ...................
### LIST OF TABLES

Table 1. Three-Way Classification of School Systems ........................................ 66

Table 2. Two-Way Classification of School Systems ........................................ 68

Table 3. A Summary of the Analysis of Variance on the Effects of Factor B .............. 73

Table 4. A Summary of the Analysis of Variance on the Effects of Factor A .............. 74

Table 5. Summary Table of Analysis of Variance on Interaction Effects of Factor A with Factor B ................................................................. 75

Table 6. A Summary of Comparisons of Central Office Administrative Size Among Large School Districts ................................................................. 80

Table 7. A Summary of Comparisons of Central Office Administrative Staff Size Among Small Districts ................................................................. 81

Table 8. A Summary of Comparisons of Number of Authority Levels Among Large School Districts ................................................................. 83

Table 9. A Summary of Comparisons of Number of Authority Levels Among Small School Districts ................................................................. 84

Table 10. A Summary of Comparisons of Number of Subordinates Reporting to Superintendent Among Large School Districts ........................................ 86

Table 11. A Summary of Comparisons of Number of Subordinated Reporting to Superintendent Among Small School Districts ........................................ 87

Table 12. A Summary of Comparisons of Line Officers Among Large School Districts ................................................................. 89

Table 13. A Summary of Comparisons of Number of Line Officers Among Small School Districts ................................................................. 90

Table 14. A Summary of Comparisons of Number of Staff Officers Among Large School Districts ................................................................. 92
15. A Summary of Comparisons of Number of Staff Officers Among Large Districts. .......... 93

16. A Summary of Average Number of Officers Holding Vertical Positions Among Large School Districts. .............. 95

17. A Summary of Average Number of Officers Holding Vertical Positions Among Small School Districts. ............... 96

18. A Summary Table of Average Number of Officers Holding Horizontal Positions Among Large School Districts. ......... 98

19. A Summary Table of Average Number of Officers Holding Horizontal Positions Among Small School Systems. ......... 99

LIST OF FIGURES

Chapter 1

II Figure 1: Minimum Number of Individuals Required to Staff Central Offices of School Districts of Various Sizes. ................. 44

III Figure 2: Matrix of Numbers of Entries per Cell. ................ 50

Figure 3: Sketch of Summary of Analysis of Variance. ............. 53

IV Figure 1: Geometric Profile 1. ................. 100
Figure 2: Geometric Profile 2. ................. 100
Figure 3: Geometric Profile 3. ................. 102
Figure 4: Geometric Profile 4. ................. 105
Figure 5: Geometric Profile 5. ................. 107
Figure 6: Geometric Profile 6. ................. 108
Figure 7: Geometric Profile 7. ................. 109
CHAPTER I

INTRODUCTION

One of the crucial needs within the field of educational administration was the development of guidelines for use in determining the number and kinds of administrators and supervisors needed to staff school districts' central office. Fensch and Wilson pointed out, "a superintendent has few standards available to him in deciding the numbers of assistants needed in a school system for adequate performance consistent with efficiency."¹ Knezevich added: "There is a lack of research which specifies at what point in a school district's growth it becomes necessary and practical to establish or expand the central office administrative and supervisory staff."²

Because of the lack of standards a confused situation apparently existed. Knezevich indicated that most boards could discern a need for more clerical and non-professional aides, but the same boards could not discern a need for additional administrative assistants,

¹Edwin A. Fensch and Robert E. Wilson, The Superintendency Team (Columbus, Ohio: Charles E. Merrill Books Inc., 1964), p. 25:

coordinators or supervisors. In the latter case, the boards feared that hiring additional administrative personnel would create a situation in which there were "too many chiefs and not enough Indians."\(^1\) Campbell, Cunningham and McPhee pointed out that some members of the general public and some teachers would strip school organizations of the central office staff and dispense with the administrative hierarchy altogether. The authors identified three concerns voiced by teachers and the general public:

1. **Lack of expertise:**

   To many people it seems strange indeed that the administrator who heads an organization devoted to teaching and learning is often a master of no body of content. He is neither scientist, social scientist, nor humanist. The first grade teacher knows more about reading than the principal. The high school mathematics instructor knows more about mathematics than the superintendent.

2. **Non productive:**

   Many people regard the administrative hierarchy as non-productive. In an organization that exists for teaching and learning, administrators do not teach. . . .

   Even more serious than the feeling some people have that administrators are non-productive is the suspicion that administrators actually hinder teaching and learning. . .

3. **Too much power:**

   A third concern many people have about the administrative hierarchy has to do with excessive power. Administrators do participate in decision making and these decisions often affect

\(^1\) Ibid., p. 255.
other people. With Lord Acton many suspect that, "Power tends to corrupt; absolute power corrupts absolutely."

Liberman is much impressed with the power of school administrators and thinks it inconsistent with the development of a teaching profession. He says:

... Placing the primary responsibility for the quality of professional services on the shoulders of administrators undermines the right of practitioners to make the professional judgments. The practitioners are auxiliaries rather than professional workers in their own right.  

Perhaps a contributing factor to the views expressed and to the situation that existed was the evident growth in size of the central office administrative staffs. Campbell, Cunningham and McPhee noted that in 1965 there were as many as 60,000 central office administrators and supervisors in the nation's schools. These administrators were given a wide variety of titles such as:

Assistant superintendent for instruction, assistant superintendent for business, assistant superintendent for personnel (staff), assistant superintendent for pupil personnel services, administrative assistant to the superintendent, director of elementary education, director of secondary education, director of curriculum, director of special education, director of adult education, director of instructional materials, director of audio-visual education, director of publications and information, director of research, director of finance, director of buildings and grounds, director of health services, director of cafeteria services,

---

director of transportation, elementary supervisor, primary supervisor, physical education supervisor, mathematics consultant, science consultant, and foreign language consultant.¹

The sheer numbers and kinds of administrators and supervisors with many responsibilities and titles, as Campbell, Cunningham and McPhee noted, must have, at times, appeared rather formidable to teachers to whom the actual work of school, teaching, was entrusted. The authors pointed out also that teachers, school board members, and the general public were often ambivalent about administrators; "seeing them as necessary at one point, as detrimental at another."²

The situation where teachers, school board members, and the general public became ambivalent about the administrative hierarchy seems to have been created because of the lack of guidelines for determining the number and kinds of assistants superintendents needed. To suggest remedies for the situation that existed, researchers made a number of studies pertaining to staffing the school central office.³ A host of factors presumed to affect staffing practices were investigated. A determination was made that the size of the central office staffs varied greatly; the employment of central office assistants and the assignment of duties and responsibilities to subordinates varied also. However, no two of the studies

¹ Ibid., pp. 226-227.
² Ibid., p. 229.
³ A review of these studies is provided in Chapter II.
produced identical results; each study pointed to a different set of factors as the cause of variations in staff size, organizational structure or staff utilization.

The lack of general consistency in the findings of previous studies delayed development of guidelines for use in determining the size of the superintendent's team or the structure of the administrative organization; this lack of agreement among the various studies suggested that perhaps the most critical factor or combination of factors responsible for variations in staffing patterns still remained to be identified. One such factor could have been the role perception of the superintendent acting independently or in concert with such factors as school population size and school wealth—factors that were frequently suggested. The relationships that exist between superintendent's role perception and central office administrative staff size, organizational structure or staff utilization had not yet been determined. Hence, more studies were needed.

Purpose of the Study

The purpose of the study was to investigate whether the size of administrative staffs, organizational structure and school central office administrative staff utilization varied significantly and systematically with role perception of the superintendent, school population size and school wealth acting
independently or in concert.

The assumption underlying the study was that superintendents' role perceptions varied according to Knezevich's six "administrator-oriented models": (1) leader model, (2) policy-scientist model, (3) innovator model, (4) decision-maker model, (5) technician-expert model and (6) organization-man model. 1

The Hypotheses

The specific research task centered on verifying or rejecting the following hypotheses:

(1) The size of the central office administrative staffs varies 2 with role perception of the superintendent, district size and school wealth.

(2) The span of control characterizing the organizational structure varies with role perception of the superintendent, district size and school wealth.

(3) The number of authority levels in the administrative organizational structure varies with role perception of the superintendent, district size and school wealth.

(4) The number of line officers in the administrative organization varies with role perception of the superintendent, district size and school wealth.

(5) The number of staff officers in the administrative organization varies with role perception of the superintendent, district size and school wealth.

1 Knezevich, Administration of Public Education pp. 534-535.

2 Direction of variation is immaterial.
(6) The number of vertical positions in the administrative organization varies with role perception of the superintendent, district size and school wealth.

(7) The number of horizontal positions in the administrative organization varies with role perception of the superintendent, district size and school wealth.

**Definition of Terms**

For the purpose of the study, the following terms were used as indicated:

Central administrative staff size -- The number of central office professional staff who had system-wide responsibilities (as distinguished from individual school responsibilities).

Organizational structure -- The organization had utilized (1) a broad or narrow span of control and (2) a relatively tall or short structure. The phrase, span of control, was used to mean the number of persons under the supervision of one administrator; the term, tall or short structure, was used to mean the number of administrative levels between the highest and lowest positions in the administrative hierarchy. Hence, a tall structure was one with relatively many administrative levels while as a short structure had fewer levels.

Staff utilization -- Staff utilization included: (1) types of positions assigned to subordinates and (2) nature of responsibilities. Staff utilization included (a) proportion of subordinates utilized as line officers
and number of those assigned as staff officers; (b) number of subordinates assigned along the vertical organization and number of those assigned along a horizontal organization. The term, vertical organization, pertained to responsibility assigned along some function or subject field irrespective of grade levels; the term horizontal organization, was used to mean responsibility assigned along grade levels irrespective of subject field.

Line and Staff Officers -- Line officer was used to indicate a professional who had authority over subordinates while a staff officer was similar to a resource person, consultant or advisor and had no authority over subordinates.

Administrator-Oriented Models:

(1) Leader model -- regards the administrator as one who can help a group define or attain its goals.

(2) Policy-scientist model -- focuses on the role of the administrator as an architect of policy or a mediator among various groups influencing policy formulation.

(3) Innovator model -- stresses the role of the administrator as a change agent.

(4) Decision-maker model -- emphasizes the role of the administrator as a determiner of the course of action or the one responsible for making the choice among alternatives.

(5) Technician-expert model -- sees the administrator in a traditional practice-oriented role as an expert in human relations, finance, school plant, personnel employment, etc. The administrator possesses certain technical competencies in order to succeed.
Organization-man model -- commits the administrator to organizational objectives with special stress on such qualities as loyalty, harmonious relations, and getting the job done.1

Limitations of the Study

Delimiting the Study

The investigation was planned and conducted within the limits set forth below:

1. The study was limited to public school systems in the state of Illinois.

2. The study was concerned only with unit school systems, that is systems that had both elementary and secondary schools.

3. The population for the study did not include the city of Chicago School System.

Methodology of the Study

Procedures

The procedures of the study conformed to the format outlined below:

1. Review of the literature -- the writer reviewed books, dissertation abstracts and magazine articles. The material provided insights into various theories and principles pertaining to the administrative organization-purposes and structure. The review provided also a knowledge of previous studies - procedures and findings - in the area of central office staffing patterns.

2. Collection of Data -- from the review of the literature six role-definitions of the superintendent were identified. Identical role-definitions were incorporated in a questionnaire

1 Knezevich, Administration of Public Education pp. 534-535.
appearing in the appendices. The questionnaire was mailed to all unit school systems, except the city of Chicago school system, in the state of Illinois. The superintendent of each system was requested to check one of six role descriptions which the superintendent perceived to be the most important role of the chief school administrator. Along with the questionnaire was an inventory sheet to be used by superintendents to report certain information requested in Part B of the questionnaire (See Chapter III).

Interview -- a representative sample of school districts was selected for an indepth study of the aspects treated only superficially in the questionnaire. The sample of twenty-two was chosen from respondents to the questionnaire on the basis of school size, wealth and superintendent's role perception. The sample procedure is further explained in Chapter III.

Statistical Treatment -- A factorial design utilizing multivariate analysis of variance (MANOVA) procedures was used in testing the seven hypotheses. A complete description of the procedure and statistical tests employed appear in Chapter III.

Organization of the Study

The study consists of five chapters, a selected bibliography, and appendices.

Chapter I includes an introduction to the study, the purpose of the study, definition of terms, methodology and procedures.

Chapter II contains a review of the related literature and research relative to central office staffing patterns, roles of the superintendent, organizational structure and staff utilization.

1 A description of the questionnaire, its development and field testing appears in Chapter III.
Chapter III covers the description of the questionnaire and data sheet used in the study, methods used to administer the instruments, statistical tests and procedures.

Chapter IV includes an analysis of the data derived from the questionnaires, and results of the statistical tests.

Chapter V provides an overview of the study. A summary of the study along with conclusions, implications and recommendations are included in Chapter V.
CHAPTER II

REVIEW OF RELATED LITERATURE

The purpose of the study was to investigate whether the size of administrative staffs, organizational structure and school central office administrative staff utilization varied significantly and systematically with role perception of the superintendent, school population size and school wealth independently or in concert.

Chapter one contains an introduction to the study, definitions of terms, methodology and procedures.

The purpose of Chapter two is to present a review of the related literature and research relative to central office staffing patterns, roles of the superintendent, organizational structure and staff utilization.

Central Office Staffing Patterns

Previous studies on the subject of central office staffing patterns had been reported by the American Association of School Administrators, Bahner, Madigan, Murray, Snead and Spencer.¹

The American Association of School Administrators prepared and distributed to 300 nation-wide school

¹American Association of School Administrators.
systems a questionnaire on organizational structure, levels of decision making, composition of superintendent's cabinet, trends in increase or decrease of central office staffs, reasons for changes and organizational charts.  

In the study, the association reported: (1) 86 percent of the responding systems indicated a centralized structure where the source of most administrative decisions and actions was the central office. Prime importance was put upon the development of a strong central staff of specialists in as many areas as the system could provide; the central office staff was charged with the primary responsibility for designing educational programs and transmitting the required directives to operational administrators and supervisors; (2) three commonly used processes in decision making were; (a) central office consultation with local schools (in 48% of the schools), (b) decisions made in the central office and then transmitted to local schools (in 25% of the


1 Administrators, The Administrative Team, p. 18.
schools) and (c) some decisions made exclusively at the central office level while others were made at the local school level (in 20% of the schools); and (3) the bigger the system, the larger the superintendent's cabinet. In addition, three factors were discovered that were responsible for increasing size of central office staff. In order of importance, the factors were as follows: (1) increase in educational services for all pupils, (2) increase in compensatory educational programs, and (3) larger school enrollments due to population growth. 1

An interesting point made in the AASA study was that when the size of the school system was taken into account, the pointing to any one cause for the increased number of central office personnel was difficult. 2

Bahner studied the administrative staff organization in Northern Illinois School Systems. A two-page questionnaire was sent to all members of the Northern Illinois Superintendents' Round Table. The Chicago School System was excluded. The purpose of the study was to show relationships between the size of the school system and the patterns of more complex administrative arrangements. The results of the study indicated that the chief school executive began to obtain administrative aides as the number of certified employees in the system

1 Ibid., p. 27.
2 Ibid., p. 27.
exceeded forty.¹

In comparing the Illinois survey to the literature on the theory of organization, Bahner discovered that many of the Northern Illinois Schools rejected the theory that emphasizes the assigning of central office assistants to staff (rather than line) positions, or the theory that requires building principals report directly to the superintendent. Of the five most commonly found administrative staff positions, the author found that 45 of the 94 persons described had authority over building principals or classroom teachers. In the same study, Bahner observed also the likelihood that "the unity of command principle, expressed by Simon, Gulick, and others," was being violated in the school systems. The author noted that "teachers might be expected to obey both the principal and a member of the administrative staff in certain matters."²

Madigan studied central administrative staffing in Michigan School Districts. The purpose of the study was to explore relationships of school district size and local tax base to professional staffing of central administrative school offices for the school districts of the state of Michigan. The local tax base measure used in the study was district wealth as reflected in state

¹ Bahner, Administrative Staff Organization, p.2.
equalized valuation per pupil.\textsuperscript{1}

The procedure included all public school systems. A random sample of 11\% was taken. An interview instrument and a supplementary list of administrative functions was developed through a study of previous research.\textsuperscript{2}

In the study, Madigan observed exceptional variability in the size of central office staffs in seemingly comparable districts. The author suggested that the variability was caused by such factors as: (a) unperceived district circumstances of the normal individuality of human affairs, (b) lack of sufficient theory, sufficient principle, or sufficient data to provide standards of administrative staffing, (c) lack of formulas, or tables able to serve as determiners of the number and kinds of administrators that should be present within the individual school system. In the same study Madigan concluded that wealth in the form of state equalized valuation did not appear to be a significant factor in the size of structure of central administrative staffs. Pupil population, however, was seen to be closely related to central office staff determination. The evidence indicated central staff growth as the district population grew.\textsuperscript{3}

\textsuperscript{1}Madigan, Administrative Staffing in Michigan School Districts, Dissertation Abstracts, Volume XXIX, p. 2486 A.

\textsuperscript{2}Ibid.

\textsuperscript{3}Ibid.
Murray studied the deployment of professional staff in Pennsylvania public schools. The focus of that study was evident from the following questions:

1. Are the public school administrative units of Pennsylvania adequately staffed?
2. How are professionals deployed?
3. What is the relationship between size of population and professional staff deployment?
4. To what extent is density of pupil population related to professional staff deployment?
5. To what extent is financial capacity related to professional staff deployment? ¹

The procedure of the study included the following:

1. data were obtained from individual school systems and the Pennsylvania Department of Public Instruction;
2. to determine numerical staff adequacy, each employee was allocated to a specific position category and assignment level; (a) administrators and supervisors, (b) classroom teachers, (c) central office, (d) elementary school, and (e) secondary school; (3) current criteria were utilized for making comparisons. ²

The findings of the study were as follows:

1. Pennsylvania School districts included in the sample were not adequately staffed.
2. Schools with the highest pupil enrollment had the highest number of professionals in central office elementary education.
3. Systems with lowest pupil populations had

¹Murray, Staff Deployment in Pennsylvania Public Schools, Dissertation Abstracts, Volume XXXI, p.975 A.
²Ibid.
highest percentage of professionals assigned to central office. No significant relationships were found to exist between size of pupil population and percentages of specialists, classroom teachers and secondary school personnel.

(4) Higher densities of pupil population implied higher percentages of professional personnel assigned to administrative, supervisory and specialist positions.

(5) The higher the financial capacity the higher the percentage of professional personnel assigned to administrative, supervisory and specialist positions; the lower the financial capacity the higher the percentage of classroom teachers.¹

A study of central office administrative staffing patterns in urban schools was made by Snead. The study limited to selected school systems in the State of Ohio, sought to determine alterations in central office administrative staffing patterns with respect to efforts to improve the quality of the education of inner city youth.²

The author found that the thirteen schools under the study had responded to the demands of urban education by making some changes in the size of central office administration. The changes affected staff positions particularly in the areas of school community relations, human relations and federal programs.³

Spencer made a study of central office staffing in

¹Ibid.


³Ibid.
Kansas school systems. The purpose of the study included:

1. To determine prevailing practices concerning number and responsibilities of certified central office personnel.

2. To report recommendations of authorities in the field of educational administration concerning employment and duties of central office staff.

3. To make recommendations for staffing of central office personnel.

The procedure consisted of a questionnaire distributed to 136 superintendents in schools of 50-450 certified teachers.¹

In the study, the author arrived at the following conclusions:

(1) The superintendency has grown in complexity until it has become very difficult for one administrator to perform adequately all the jobs of the superintendency.

(2) There were wide variations of practice in the employment of central office assistants and in the assignments of duties and responsibilities to them.

(3) The titles of central office assistants varied greatly.

(4) The number of central office assistants varied greatly.

(5) The majority of the respondents indicated general planning needed more attention in their schools:

(6) Superintendents indicated that instructional leadership needed more attention in their schools.

(7) There is no evidence that additional assistants were needed on the majority of central office staffs.

(8) Most of the superintendents responding preferred to spend less time with the administrative functions of supply purchasing, buildings and grounds supervision, finance, and non-certified personnel management.

(9) The major criteria for employing certified central office staff personnel were the number of teachers, curriculum changes, and increasing number of special programs.

(10) Economics and a lack of school board understanding of the complexities of the administrative function were the prime factors in preventing the employment of additional administrative assistants.

Based on the findings of the study, Spencer made the following recommendations:

(1) Superintendents in systems of 40 to 450 certified teachers should be freed from most technical duties to allow them to spend more time with functions of instructional leadership, general planning, and research.

(2) Superintendents should delegate more of the operational functions of supply purchasing, buildings and grounds supervision, finance, and non-certified personnel management.

(3) The superintendent's span of control should be reduced.

(4) Minimum teacher-central office personnel ratios should be established.

(5) The duties and responsibilities of each staff officer should be clearly defined.

(6) No certified personnel should be responsible to more than one administrative officer.

(7) There should be no dual control in the superintendency.

(8) The district employing between 50 to 100 certified teachers should employ one full time assistant superintendent.
(9) The school district employing between 101 and 200 certified teachers should consider employing two full time assistant superintendents.

(10) The school district employing between 201 and 450 certified teachers should consider employing three full time assistant superintendents.

(11) Additional funds should be provided for employing certified central office assistants.

(12) Uniform titles should be established relative to central office assistants.¹

Additional studies on the subject of factors affecting increase in central office staffs were made by Furno, Roesch, Wilson, Carson, and Manla.²

Furno, in a study of how school systems allocate funds, observed that the use of professional administrators was related to the wealth of the district - the richer the district the more professional administrators were likely to be employed.³

Roesch, in a study entitled, "Staffing for School Management - The Legal Factor," identified eight factors seen to affect central office staff increase. Some of the factors were identical to those discovered by other

¹ Ibid.


³ Furno, School Management.
researchers referred to in the preceding discussion.

The eight factors identified by Roesch were as follows:

1. Size of school population.
2. Wealth of the school district.
3. Quality of the staff.
4. Type of district.
5. Kind and extent of cooperative services.
6. Location of the schools.
7. Management policies.
8. School Law.

Roesch stressed the fact that state law determines at least one administrative position - that of the superintendent.

Wilson, in a study of the Superintendency Team, revealed five other factors related to the size of the school central office administrative staffs. The factors were:

1. The superintendent's personal philosophy - his scale of values determines which functions are sufficiently important to warrant a full time officer... or he may hold on to functions which he regards so important that he won't entrust their performance to a subordinate.

2. The superintendent's own competence or incompetence -- he may delegate a function in which he does not feel confident, to assure its successful achievement.

3. The neglect of a function -- this may signal a need for an assistant.

4. Pressure groups -- local pressures may influence the number and kinds of assistants and

---

Availability of qualified personnel.¹

The effect of change in leadership was the subject of investigation by Carson. In a study of 100 California school systems, Carson found that most of the increase in the central office staffs were made by newly appointed superintendents in the first two years of office. Consequently the author concluded that change in leadership appeared to be a variable significantly related to expansion of the administrative hierarchy.²

In contrast to the studies by Wilson and Madigan, Manla, in a nation-wide study found little correlation between the number of central office administrative personnel and pupil enrollment. The author reported that there was evidence suggesting that the extent of services provided by the school district determined the size of the central office staff.³

In analyzing the studies reviewed on the subject of central office staffing patterns it became evident that no one single factor or set of factors had emerged consistently as the determiner or determiners of central office administrative staff size or utilization. Although some researchers pointed to differences in school district wealth, type of district, number of certified

¹Wilson, The Superintendency Team, pp. 24-25.
²Carson, School Superintendents, pp. 111-113.
³Manla, American School and University, pp. 145-161.
personnel or scope of the program as the critical factors in staff size, other researchers suggested that variations existing in administrative staff size might be related to such factors as lack of theory or principle, lack of school boards' understanding of the complexities of the superintendent's job or differences among school systems in management policies.

The lack of general consistency in the findings of previous studies seemed to suggest that perhaps the most critical factor or combination of factors responsible for variations in staffing patterns still remained to be identified. One such factor might be the role perception of the superintendent in conjunction with the other factors mentioned.

The Role of the Superintendent

A review of administrative theories and concepts revealed that the role of the superintendent might be variously perceived as (a) leadership, (b) policy-making, (c) innovation, (d) decision-making, (e) similar to that of a technician-expert and (f) similar to that of an organization-man.¹

Leadership

The purpose of leadership or the leadership role was discussed by the American Association of School

¹ Knezevich, Public Education, pp. 534-535.
Administrators, Halpin, Castetter and Burchell, Knezevich, Fensch and Wilson, Saunders, Phillips and Johnson.  

The American Association of School Administrators charged school superintendents with the responsibility for guiding the destiny of America. In a declaration, the AASA said:

To a very great degree, America's destiny is in the hands of school superintendents. If the superintendents rise to the occasion and courageously lead the people forward, the public schools will have the quality they need, individual fulfillment will continue to be the crowning achievement of democracy, and the genius of the American people will continue to flourish.

What leadership does entail was the subject of interest to Halpin. In leadership studies of aircraft commanders, school superintendents and business executives, Halpin discovered that leaders tended to have similar strengths in initiating new structures. Along with showing consideration for subordinates, structure reorganization appeared to be the hallmark of leadership. Consequently Halpin stated:

---


2 American Association of School Administrators, Theory and Practice of School Administration, p. 31.
Practical men know that the leader must lead - must initiate action and get things done. But because he must accomplish his purposes through other people and without jeopardizing the intactness or integrity of the group, the skilled executive knows that he also must maintain good "human relations" if he is to succeed in furthering the purpose of the group. In short, if a leader - whether he be a school superintendent, an aircraft commander, or a business executive is to be successful, he must contribute to both major group objectives of goal achievement and group maintenance. . . this means that the leader should be strong in initiating structure and should also show consideration for the members of his group. 1

Initiating action and getting things done seemed to entail what Castetter and Burchell described as goal-setting and goal attainment. According to the authors:

Administration is an essential organizational activity. It is a means to ends; it is useless unless it is actively related to goal setting and goal attainment. . . educational administration exists to guide individuals and groups toward achievement of educational goals.2

The argument that administration, hence leadership, was essential to organizational existence received further impetus from other authors. Knezevich said "every institution requires a pattern of administration to propel it efficiently and effectively toward a realization of goals."3 In underlining the same point, Fensch and Wilson maintained that "preparations for the fulfillment of people's expectations from their schools rest largely on the shoulders of administration."4

1 Halpin, Theory and Research in Education, p. 87.
2 Castetter and Burchell, Educational Administration. P.3.
3 Knezevich, Administration of Public Education, p. 8.
4 Fensch and Wilson, The Superintendency Team, p. 237.
In summarizing the review on leadership, the various authors stressed the point that leadership rested on the shoulders of the superintendent. Many of the authors would agree with Saunders, et al., that leadership was "any act which facilitates the achievements of educational objectives."\(^1\)

**Policy-Making**

The role of the superintendent as an adviser to the board in the realm of policy-making was the point of emphasis in discussions by Walton and Shafer.\(^2\)

Walton viewed administration as an activity concerned basically with giving directions to people in order to maintain and to insure the survival of an organization. Walton said:

> Whatever else administration may be, it is at least the activity that concerns itself with the survival and maintenance of an organization and with the direction of the activities of people working within the organization in their reciprocal relations to the end that the organization's purposes may be attended.\(^3\)

Walton seemed to be suggesting that the administrative process entailed policy-making. According to

---

\(^1\) Saunders, Johnson and Phillips, *Educational Leadership*, p. 5


\(^3\) Walton, *Policy Making in Education*, p. 41.
Shafer, participation in policy-making was a legitimate function of the administration with respect to the advisory role. The author believed:

It is not sufficient to regard administration as simply policy-execution. It is also inaccurate to imply that in a democracy the "representative boards" make all major policies.

Policy making today has two distinct aspects - formulation and determination. The former is a proper... aspect for administrative and staff participation; whereas the latter is the exclusive responsibility of representative boards...

Administration is a service function which deals with participation in the formulation of major goals, purposes and policies relating to the existence of the enterprise, and to the carrying out, or execution, of those which are ultimately determined by the representative body.¹

The need for the administration to participate in policy-making was evident because board members did not always have the knowledge or experience necessary to make policy decisions. As Shafer pointed out "sometimes truly-known, competent, representative 'lawmakers' are... not selected to certain of the complex positions represented in modern institutions." Shafer went on to say that "administration can help materially in the formulation of policy, whereas the representative board or legislature still holds the final responsibility for policy determination."²

Innovation

Holders of one school of thought ascribed to the

¹Shafer, School Administration, p. 218.
²Ibid., p. 215.
superintendent the role of modernizing the educational program. The superintendent was committed to developing significant new ways of using professional talent, drawing upon instructional resources, allocating physical facilities, scheduling instructional time or altering physical space; the superintendent was an initiator of new programs, new methods and new ideas. Brickell, Lazarsfeld, Griffiths, Benne and Chin all published information that substantiates this theory.¹

Brickell believed that administrative initiative meant bringing about the following:

Instructional changes which call for significant new ways of using professional talent, drawing upon instructional resources, allocating physical facilities, scheduling instructional time or altering physical space — rearrangement of the structural elements of the institution.²

Lazarsfeld felt the duty of the administration was to build into the organization provisions for systematic change so that people would get used to steady progress rather than be subjected to sudden disruptive innovation. The author's argument was as follows:


²Brickell, Organizing New York State for Educational Change. p. 23
The administrator must try to build into his organization provisions for innovation, for change, and for development. In a changing world people and organizations must adjust to changing conditions. The conditions for change must be incorporated into the organization so that there may be a steady process of development rather than a series of sudden, disruptive innovation.  

Apparently failure, on the part of the administration to provide for innovation, change and development had serious implications for the organization. Griffiths warned:

The essence of leadership is innovation. The superintendent who understands the issues of the day will not change for the sake of change, but will introduce new ideas as they are generated if they meet the needs of the school system. He weighs each suggested change with an educator's view of what the innovation will do for young people. He keeps constantly before him the belief that the great need is for education which is modern. A superintendent must remember the admonition that "Education which is not modern shares the fate of all organic things that are kept too long."  

A number of techniques a superintendent could use to bring about change, to modernize and to keep the educational program from going the way of organic things that were kept too long, were suggested by Benne and Chin. Four suggestions were made as follows: (a) encouraging knowledge building and diffusing the results of research into the minds and thinking of men and women, (b) securing or developing persons fit enough to occupy positions with job responsibilities for improving practice, (c)

---

1Lazarsfeld, Social Sciences and Educational Administration. pp. 3-4.

2Griffiths, The School Superintendent, p. 103.
employing experts in the analysis of systems and in the laying out of more efficient systems, and (d) attempting to link activities of researchers in education with activities of practitioners in the classroom.¹

Decision-Making

Whether the administrator was setting new goals or seeking new and imaginative ways of achieving goals, a series of decisions were constantly being made. This fact gave rise to the theory of administration as decision-making. Griffiths was the chief proponent of such a theory.²

Griffiths theorized that of all the roles that an administrator performed, none could equal, in importance, that of directing and controlling the decision-making process. In a statement of theory Griffiths argued:

It is not only central in the sense that it is more important than other functions, as some writers have indicated; it is also central in that all other functions of administration can best be interpreted in terms of the decision-making process.³

Griffiths finalized the argument by contending that "decision-making is becoming generally recognized as the heart of organization and the process of

¹ Chin and Benne, The Planning of Change, pp. 32-34.
³ Ibid.
Traditionally, school administration seemed to have been viewed as a set of activities related to technical functions. The major role of the superintendent appeared to have been regarded as one of selecting, orienting and developing a first rate administrative team. The team in turn would select, orient and develop a first rate teaching staff. The superintendent would be a procurer of resources necessary for the attainment of the organizational goals. As Knezevich observed, the administrator was seen in the practice-oriented role as an expert in human relations, finance, school plant, and personnel employment, and as "one who needs to possess . . . certain technical competencies in order to succeed."  

The American Association of School Administrators summed up the technical aspect as follows:

School administration is developing the school budget, levying taxes, and collecting the money needed to operate the schools. It's bonding the property of the school district to build new school houses; it's planning a school site, designing a new school building, and equipping a school library; it's discovering safer ways of transporting children to and from school, of handling power-driven equipment in the school shop, and of using

1 Ibid.

chemicals in the laboratory.  

Organization-Man

The model of the administrator as an organization-man was discussed in the writings of Knezevich and Whyte. Knezevich's organization-man committed the administrator to organizational objectives and emphasized the qualities of loyalty, harmonious relations, and getting the job done.

The role of an organization-man was viewed by Whyte as one of keeping things going, more than pioneering. The administrator was seen as a professional manager meeting the following qualifications:

The man who knows how to elicit participative consultation, how to motivate groups and individuals, how to enhance job satisfaction. . . how to conduct problem-solving meetings. He will be a generalist who will not think in terms of specific work but in the science of making other people work. . .

He encourages others to work . . . he moderates and adjusts those who do create; he is the balance wheel on the tendency of the professional-type individual to wander into new, unexplored, and perhaps dangerous territory.

In summarizing the research on the subject of the


3 Knezevich, Administration of Public Education, p. 535.

role of the superintendent, the various authors tended to emphasize six categories. Knezevich described the six categories as administrator-oriented models as follows: (1) leader model, where the administrator was regarded as one with the ability to help a group define or attain goals; (2) policy-scientist model, where the administrator was viewed as an architect of policy or a mediator among various groups influencing policy-formulation; (3) innovator-model, where the administrator was seen as a change agent; (4) decision-maker model, where the administrator was viewed as a determiner of the course of action; (5) technician-expert model, where the administrator was seen in the traditional role as an expert in human relations, finance, school plant or personnel employment, and (6) organization-man model, where the administrator was committed to organizational objectives with special stress on such qualities as loyalty, harmonious relations and getting the job done.

**Administrative Organization Structure and Staff Utilization**

**Organization Structure**

A number of writers addressed the subject of administrative organizational structure. However, there appeared to be little agreement among the writers concerning the ideal organizational structure. The problem of determining the ideal structure was confounded by such issues as (1) broad versus limited span of control and
(2) tall pyramidal structure versus flat structure.

The problem of the "ideal span of control" was discussed by Urwick, Fensch and Wilson, Morphet, Johns and Reller, Knezevich, Wynn and Dale.¹

Traditionally, the emphasis was on a limited span of control. Urwick contended that "no superior can supervise directly the work of more than five, or at the most six, subordinates whose work interlocks."² In support of Urwick, Fensch and Wilson stated that having more than six to eight subordinates only invited inefficiency and a spreading of the chief too thinly. Fensch and Wilson argued:

This type of inefficiency is likely to result under conditions of a "flat" organization, under an erroneous concept of democratic administration, or with a superintendent who likes to keep his finger on everything and is reluctant to let responsibility trickle down to assistants.³

Morphet et al., equally embraced the traditional theory and maintained that the effectiveness of an organization was enhanced by assigning to each administrator no greater

---


²Urwick, Elements of Administration, p. 126.

³Fensch and Wilson, The Superintendency Team, p. 37.
a number than he can directly supervise.¹

Although the concept of a limited span of control had once gained wide support, some experts were beginning to have second thoughts. Knezevich said:

There is no optimum span of supervision for all executives. The variety of factors in any given situation may reduce or increase the number of individuals a single administrator in a school system can effectively supervise.²

Challenging the limited span of control theory still further, Wynn pointed out "many authorities now believe that it is possible for an administrator to supervise the work of a larger number of executives, particularly if the supervision need not be too close or too direct."³ A number of reasons for challenging the traditional theory and advocating a broader span of supervision were given by Dale:

1. The desire of executives to have access as high as possible, as a means of advancement and a sign of status.

2. The need for keeping the chain of command as short as possible to avoid more layers of supervision.

3. The natural tendency on the part of executives to take a personal interest in as many aspects of their jobs as possible.

4. The political argument that as many interests as possible should be represented.

¹Morphet, Johns and Reller, Educational Organization and Administration, p. 96.

²Knezevich, Administration of Public Education, p. 46.

³Wynn, Organization of Public Schools, p. 98.
5. The danger of overly-close supervision which may discourage initiative and self-reliance.¹

The span of control issue appeared to be somewhat related to the pyramidal versus flat dilemma. The characteristics of the tall pyramidal structure included:

1. There are a great number of authority levels with several line officers at each level.
2. Individual school units have little or no autonomy.
3. No single administrator can be said to be in direct charge of the education of a child.
4. Although there is a greater number of line officers, administrative responsibilities are centered in the hands of fewer individuals.
5. Specialists are line officers with responsibility for building a program in their field of specialization.
6. Line administrative officers have narrow spheres of responsibility.²

The flat structure was described as having the following characteristics:

1. The number of authority levels and line officers are kept at a minimum.
2. Individual school units are granted greater autonomy.
3. The building principal becomes a key figure in the educational enterprise, since he is the one administrative officer responsible for the total educational program of children in his school.
4. Administrative responsibilities are diffused

¹Dale, Company Organization Structure, pp. 52-53.
among many persons even though the number of line officers may be reduced.

5. Specialists become service arms of the classroom rather than line officers.

6. Line administrative officers become generalists with broad areas of responsibility.¹

Some writers preferred the flat organizational structure over the tall pyramidal structure. These writers listed several reasons to explain this preference:

1. The flat organization reduces problems of communication and places emphasis on the service function of administration.

2. Staff officers in the organization are forced to prove their worth.

3. Levels of structure are reduced, thereby broadening creative potentialities of individuals.

4. The flat organization encourages cooperative approach to evaluation and redirection.²

Arguing in favor of the flat organization, Griffiths and associates believed that flat structure was better suited to diffusion of the function of making decisions within the staff. The authors suggested that hierarchial levels be added to the organization with caution and only when deemed imperative to maintain reasonable control.³

Although the flat structure was likely to overburden top-rank executives, making it impossible to devote

¹ Ibid.
² Ibid., p. 36.
sufficient time and attention to all subordinates, Knezevich recommended that the organization be as flat as possible under existing conditions of personnel and missions.¹

Even though the flat structure may have been favored by some, the tall organizational pattern was not regarded as free of defects. Knezevich pointed out that the long hierarchial distance in the pyramidal organization was no more detrimental than the difficulty of gaining access to superiors in the flat organization. What seemed to be important, Knezevich went on to say, was that those with assigned operational responsibilities have easy access to persons with supervisory responsibility over operational activity.²

Another issue related to the structure of the administrative organization involved the dilemma of horizontal organization versus vertical organization. The dilemma raised the question of whether central office administrative staff should be assigned responsibilities along grade levels or along subject field or function. In discussing the issue Wynn said:

The horizontal organization implies that it is the grade levels of the school organization upon which division of responsibility is logically based. The vertical organization implies that specialization and division of responsibility

¹ Knezevich, Public Education p. 47.
² Ibid., p. 47.
Wynn, however, did not say which of the two organizational patterns was believed to be superior to the other. Presumably both types had advantages. The author pointed out:

The horizontal organization tends to coordinate effort, policy, and practice along the same or neighboring grade lines across various subject fields and functions; the vertical organization tends to coordinate individual subject fields or functions throughout the school system irrespective of grade lines.2

Wynn concluded the discussion on the issue of horizontal versus vertical organization by warning against combining the two systems indiscriminately:

A major difficulty arises when a school system combines vertical and horizontal organization indiscriminately. This often results in overlapping responsibilities and gaps in responsibilities. . .

The author urged caution and pointed out that regardless of the system or combination of systems used one should bear in mind that "clarity of responsibility and its orderly distribution are fundamental imperatives."

Staff Utilization

The question of kinds and numbers of assistants a superintendent needs was dealt with in studies by McKenna and Wynn.3

---

1 Wynn, Organization of Public Schools, p. 96.
2 Ibid.
Applying the theory of administration for adaptability advanced by Mort and extended by Ross, McKenna developed an index for arriving at the appropriate number of professionals needed to serve a given number of pupils. According to McKenna, the numerical staffing adequacy (NSA) or professional staff per 1000 pupils was more accurate than class size in predicting the quality of what will happen in the classroom. McKenna said the quality of education in a school district was wholesome when the NSA measure indicated that there were 68 professionals, (including 18 professional specialists) employed in that district. School districts in which quality education was a priority (as evidenced by highly qualified staff members and strong financial provisions) formed the model for this qualification.¹

Concerning the question of how to deploy the professional specialists, McKenna stated that the number of school district professional specialists who work on the elementary school level and on the secondary school level seemed to be more contributary to quality education than does the number who work on a system wide basis. McKenna's position was in keeping with the theory in the profession that special services should be kept as close to the building as possible.²

Wynn made a study attempting to set up a criteria

¹ McKenna, *Staffing the Schools*, pp. 7-8.
² Ibid., pp. 52-54.
or guidelines for determining the number of administrative and supervisory personnel needed to operate a particular school system. The study was undertaken in cooperation with the Educational Service Bureau of the University of Pennsylvania and twelve public school systems of medium size located in suburban Philadelphia, Pennsylvania. The study was intended to seek answers to such questions as: (1) "How many administrators, supervisors and other specialized personnel are needed in a school system of a given size?" and (2) "What kinds of administrative and supervisory personnel are needed?"¹

In the study, Wynn noted that there were a number of variables, differing from one situation to another, that affected staffing needs. The variables included such factors as:

1. The size of the school system.
2. The size, number, and location of schools in the system.
3. The wealth of the community.
4. The purpose of the school system.
5. The administrative and supervisory services needed to support these services.
6. The pattern of organization staff.
7. The capacity and abilities of individual staff members.
8. The demands placed upon the staff by the public and by the board.²

¹Wynn, Administrative Staffing Problems, pp. 3-4.
²Ibid., p. 5.
The study resulted in suggestions for minimum number of individuals required to staff the central offices of school districts of various sizes as shown in Figure 1.

In summarizing the research on the subject of structure of the administrative organization and staff utilization, the focus was on such issues as (a) broad vs. limited span of control, (b) pyramidal vs. flat structure, and (c) horizontal vs. vertical organizations. The literature showed that experts were beginning to favor a broad rather than a limited span of supervision; a flat rather than a tall organization. A broad span of control was believed to be better suited to diffusion of the decision-making process, while a flat organizational structure permits decentralization of authority. A predominant desire among the experts was for the building principal to become a key figure in the educational program of the child, and to have the principal report directly only to the chief school administrator. Such an arrangement would necessitate the majority of central office administrative subordinates assuming staff rather than line positions. The issue of vertical organization remained undecided. Little evidence was given by experts to indicate which of the two patterns of organization was superior to the other. However, vertical or the vertical-horizontal combination would seem to lend itself to a multiplicity of directors more readily than the horizontal pattern.
<table>
<thead>
<tr>
<th>Enrollment District</th>
<th>Superintendent to Superintendent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Administrative Assistant</strong></td>
<td><strong>Transportation</strong></td>
</tr>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>1.5</td>
<td>2</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>Administrators</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part Time</th>
<th>Full Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>10,000-30,000</td>
<td>10,000</td>
</tr>
<tr>
<td>4,000-10,000</td>
<td>7,500</td>
</tr>
<tr>
<td>2,500-4,000</td>
<td>5,000</td>
</tr>
<tr>
<td>1,500-2,500</td>
<td>2,500</td>
</tr>
<tr>
<td>500-1,500</td>
<td>1,000</td>
</tr>
<tr>
<td>Less than 500</td>
<td>500</td>
</tr>
</tbody>
</table>

Central offices of school districts of various sizes. Minimum number of full-timers required to staff.

Figure 1
Only one or two writers had attempted to set criteria for determining the number of administrative and supervisory personnel needed to operate a particular school system.

**SUMMARY**

First, review of the literature revealed the multiplicity of factors, organizational theories and principles presumed to be associated with the size, organizational structure and staff utilization of the school central office administration; secondly, previous researchers generally omitted to consider the effect of superintendent's role perception. Therein lay the chief distinction between the present and previous studies.
CHAPTER III
THE RESEARCH PROCEDURE

The purpose of the study was to investigate whether the size of administrative staffs, organizational structure and school central office administrative staff utilization varied significantly and systematically with role perception of the superintendent, district size and school wealth acting independently or in concert.

The hypotheses tested were:

$H_{01}$: No significant differences exist in the size of the central office administrative staffs among districts with different superintendents' role perceptions, district size or school district wealth.

$H_{02}$: No significant differences exist in the span of control of the superintendent among districts with different superintendents' role perceptions, district size or school district wealth.

$H_{03}$: No significant differences exist in the number of authority levels in the administrative organizational structure among districts with different superintendents' role perceptions, district size or school district wealth.

$H_{04}$: No significant differences exist in the number of line officers in the administrative organization among districts with different superintendents' role perceptions, district size or school district wealth.
Ho₅: No significant differences exist in the number of staff officers in the administrative organization among districts with different superintendents' role perceptions, district size or school district wealth.

Ho₆: No significant differences exist in the number of vertical positions in the administrative organization among districts with different superintendents' role perceptions, district size or school district wealth.

Ho₇: No significant differences exist in the number of horizontal positions in the administrative organization among districts with different superintendents' role perceptions, district size or school district wealth.

The study consisted of four distinct steps: (1) formulating the general plan and analytic methodology, (2) reviewing the related literature, developing an instrument for measuring role perceptions of superintendents, and developing an inventory data sheet, (3) field testing and (4) conducting the investigation.

I The General Plan and Analytical Methodology

The General Plan

The general plan for conducting the research included the study of unit school districts (school districts with all twelve grades) in the State of Illinois. Because of its complexity and immense size, the city of Chicago school system was not included in the population to be studied.

A list of all unit school districts was obtained from the State of Illinois Office of Education. A two-part questionnaire was mailed to the chief school
administrator of each school system. The superintendent was asked to select one of six role descriptions which best represented the superintendent's administrative style. In addition, superintendents were requested to report information in the following categories: (1) district school population size, (2) school district wealth as indicated by expenditure per pupil, (3) size of the central office administrative staff, (4) number of authority levels between the highest and lowest administrative positions, (5) number of persons who reported directly to the chief executive officer, (6) number of administrators in line positions (positions of authority), (7) number of administrators in staff positions (advisory or resource positions), (8) number of administrators with responsibility along grade lines - like director of secondary education, and (9) number of administrators with responsibility along some function - like Mathematics consultant.

Of the 438 unit school district superintendents, 265 or 65% returned the questionnaire. Twenty-three failed to complete the questionnaire; therefore, the sample of the study was 242.

Each superintendent was assigned to one of twenty-four cells. The cells were formed by considering six levels of role perceptions, two levels of school population size and two levels of school wealth.

The two levels of district size were determined by considering a break down point as the 2,001 mark.
Districts with an enrollment of less than 2,001 were designated "small district" and districts with an enrollment of at least 2,001 were given the designation of "large districts." The 2,001 breaking point was taken to conform to Neagley and Evans' definition of "small district." However, the term "large district," as used in the study, incorporates both "intermediate" and "large" districts according to Neagley and Evans' definition.

It was necessary, for the purpose of the study, to combine the two sizes, intermediate and large, in order to obtain sufficient numbers of observations for the cells in the design.

Different levels of school wealth were determined by first computing mean expenditure level per child for all districts - which came to be $1,108. Districts with an expenditure level above the mean per pupil expenditure were considered "wealthy" and schools with an expenditure below the mean were considered "less wealthy."

In all, there were twenty-four cells, as pictured in Figure 2, with entries ranging from two to thirty-eight observations. Two of the cells had zero entries.

The Interview

A representative sample of superintendents was selected from the cells containing observations. One

---


### Figure 2

**Matrix of Number of Entries Per Cell**

**ABC**

<table>
<thead>
<tr>
<th></th>
<th>$b_1$</th>
<th>$b_2$</th>
<th>$\Sigma n_{js}$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$c_1$</td>
<td>$c_2$</td>
<td></td>
</tr>
<tr>
<td>$a_1$</td>
<td>22</td>
<td>15</td>
<td>5 3 45</td>
</tr>
<tr>
<td>$a_2$</td>
<td>10</td>
<td>7</td>
<td>0 3 20</td>
</tr>
<tr>
<td>$a_3$</td>
<td>8</td>
<td>2</td>
<td>3 0 13</td>
</tr>
<tr>
<td>$a_4$</td>
<td>13</td>
<td>6</td>
<td>4 5 28</td>
</tr>
<tr>
<td>$a_5$</td>
<td>38</td>
<td>19</td>
<td>14 9 80</td>
</tr>
<tr>
<td>$a_6$</td>
<td>31</td>
<td>18</td>
<td>2 5 56</td>
</tr>
</tbody>
</table>

\[ \Sigma n_{js} = 122 67 28 25 242 \]

- $a_1$ = Superintendent's role perception
- $a_1$ = leadership orientation
- $a_2$ = policy scientist
- $a_3$ = innovator
- $a_4$ = decision-maker
- $a_5$ = technician expert
- $a_6$ = organization-man
- $b_1$ = size of school population
- $C_k$ = school wealth
- $b_2$ = large schools
- $C_1$ = less wealthy districts
- $C_2$ = wealthy districts
superintendent was selected randomly from each cell. The twenty-two superintendents selected were interviewed to verify information contained in the questionnaire as a further check on the validity of the instrument. The same superintendents were asked to comment on some aspects of the study that had been treated only superficially through the questionnaire.

Analysis of Data

The data were analyzed in the following manner:

1. a three-way multivariate (and univariate) analysis of variance was run on factors A, B, and C, where factor A represented role perceptions of superintendents, factor B represented school district size and factor C represented school district wealth;
2. having determined the effects of factor C and the interaction of factor C with factor A, A x C, a two-way multivariate analysis of variance test was made on factors A and B. Missing observations in some cells made it necessary to reduce, by collapsing, levels of factor A from six to four. The dependent variables were: (1) central office office administration staff size, (2) number of authority levels in the administrative hierarchy, (3) span of control of the superintendent, (4) number of line officers in the administrative organization, (5) number of staff officers, (6) number of administrators holding vertical positions and (7) number of administrators holding horizontal positions. A sketch of the analysis is shown in Figure 3. The effects of the
different factors are depicted in the linear model below:

\[ X_{ijm} = \mu + \alpha_i + \beta_j + \alpha\beta_{ij} + \varepsilon_{m} \ (ij) \]

where \( \mu \) = grand mean of all sample populations,

\( \alpha_i \) = effects of factor A, i.e. superintendent's role perception.

\( \beta_j \) = effects of factor B, i.e. size of the school population.

\( \alpha_i\beta_j \) = effects of the interaction of factor A with factor B

\( \varepsilon_{m} \ (ij) \) = error term, or within cell variation.

Since the overall multivariate F-tests or the univariate F-tests do not reveal the source or direction of variations, significant values were analyzed through the Duncan's New Multiple Range Test\(^1\) of Contrasts which was used to compare sample means in making a posteriori comparisons. Significant interaction effects were studied through geometric profiles to facilitate interpretation.

II Reviewing Related Literature and Developing an Instrument for Measuring Role Perception

Review of the Literature

The literature reviewed for the study included books, dissertations, dissertation abstracts and magazine articles. The purpose for the review was two fold: (1) to gain an insight into various theories and principles

### Figure 3

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Degrees of Freedom</th>
<th>Degrees of Freedom Calculated</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>(A-1)</td>
<td>3</td>
</tr>
<tr>
<td>B</td>
<td>(B-1)</td>
<td>1</td>
</tr>
<tr>
<td>A X B</td>
<td>(A-1) (B-1)</td>
<td>3</td>
</tr>
</tbody>
</table>

**SUMMARY OF ANALYSIS OF VARIANCE**
pertaining to the administrative organizational structure and purposes and (2) to gain knowledge of previous studies-procedures and findings — in the area of central office staffing patterns.

From the review, six role descriptions of the superintendency were identified. Identical role definitions were incorporated in the questionnaire described in the following subsection.

**Developing the Instrument**

Upon completion of the review of literature, the questionnaire used in the study was developed in the following manner. A rough draft was drawn up by the writer. The draft consisted of role descriptions; each selected according to its applicability to Knezevich's administrator-oriented models: (1) leader model, (2) policy-scientist model, (3) innovator model, (4) decision-maker model, (5) technician-expert model and (6) organization model.¹

The draft was presented to a jury consisting of expert practitioners in the field of educational administration. The jury was selected in consultation with a faculty member from the department of administration and supervision of Loyola University of Chicago. The jury members were chosen for their expertise in some aspect of administration. Upon conferring with the experts, a final draft was drawn utilizing the suggestions made.

¹Knezevich, - p. 534-535.
The instrument developed consisted of parts A and B. While Part A was used for measuring superintendents' role perceptions, Part B contained items for gathering information pertaining to the structure and organization of the administrative organization, school population size and school district wealth. The final draft consisted of the following items:

**Part A**

**Role Perceptions of Superintendents**

(1) **Leader Model:**

The superintendent perceives himself primarily as one charged with the responsibility to initiate action and to establish the goals of the school organization. He regards himself as one who must develop strategies, including long range plans, for use in the attainment of the goals established. He is also, the coordinator of all human effort and a communicator who must clarify the concerns of the organization. He views administration as an essential organizational activity related to goal-setting and goal attainment.

(2) **Policy-Scientist Model**

The superintendent perceives himself to be essentially an adviser to the school board in the realm of policy-making. He is an architect who formulates regulations that guide the organization in its daily operations. He believes that modern administration is a service function
dealing with participation in formulation of policies relating to the existence of the enterprise; and to the carrying out of those which are ultimately determined by the representative body.

(3) **Innovator Model:**

The major role of the superintendent lies in modernizing the educational program. He is committed to developing significant new ways of using professional talent, drawing upon instructional resources, allocating physical facilities, scheduling instructional time or altering physical space. He is primarily an initiator of new programs, new methods and new ideas. He feels administration is an activity that involves seeking new and imaginative ways of enriching the experiences and services provided to pupils.

(4) **Decision-Maker Model:**

The superintendent believes his major role pertains to monitoring and coordinating the decision-making process. He does not make all decisions himself but, creates an organization in which decision-making is facilitated, sees that someone assumes responsibility to make decisions, and prevents certain decisions which deviate too far from overall policy. He feels that decision-making is the central and specific function of administration.

(5) **Technician-Expert Model:**
The superintendent perceives his major role to be one of selecting, orienting and developing a first rate administrative team which in turn would select, orient and develop a first rate teaching staff. He is also a procurer of resources necessary for the attainment of the organizational goals (i.e. financial resources and physical facilities). He views administration as an activity related to marshalling and utilizing human and physical resources affectively.

(6) Organization-Man Model:

The superintendent views his major role as one of keeping things going. He regards himself as the educational program manager who knows how to elicit participation, how to motivate groups and individuals, and how to enhance job satisfaction. He is a generalist who does not think in terms of specific work but in the science of making people work. He feels the crux of his administration lies in reflecting accurately the wishes of the board and getting the job done.

Part B

The School System

1. Total system-wide enrollment

2. Per pupil expenditure level

3. Total number of central office administrators (i.e. administrators with system-wide responsibility) including superintendent, assistant supt., directors,
coordinators, supervisors, etc.____________________

4. Number of authority levels between superintendent and lowest administrative position____________________

5. Does the principal report directly to the superintendent? Yes___________No____________________

6. Number of persons who report directly to the superintendent_______________________________________

7. Number of central office professionals in line positions (i.e. have authority over subordinates including teachers)____________________

8. Number of central office professionals in staff positions (i.e. have no line authority but serve as consultants, advisers or resource persons)__________

9. Number of central office administrators in vertical positions (i.e. are in charge of a function or subject area like Music Supervisor, irrespective of grade levels K-12)____________________

10. Number of central office administrators in horizontal positions (i.e. are in charge of grade levels across subject fields like, director of elementary education, or supervisor of education)____________________

11. Total number of administrative, supervisory, business, advisory, special services, or library positions in the system including building level services but excluding clerical or custodial services (i.e. total number of non-teaching but professional positions)____________________

In Part A, superintendents were requested to select
one role description which best represented the individual's administrative style. In Part B, item 1 measured school district size, item 2 measured school wealth and item 3 measured the size of the central office administrative staff; items 4 through 6 pertained to the structure of the administrative organization; and items 7 through 11 pertained to staff utilization.

III Field Testing

The pilot phase of the investigation was concerned with evaluating the instrument. The questions explored were, (1) does the wording of the items convey the same meaning to all readers? and (2) does the instrument measure what it is stipulated to measure? The first question refers to readability of the instrument. The second question refers to construct validity. The writer was primarily concerned with establishing construct validity because the instrument pertained to assessment of perceptions. Like measures of intelligence and attitudes, primary importance must be placed upon making sure that definitions or the constructs used were commonly understood. To establish construct validity Campbell and Fiske proposed that two kinds of evidence about a measure are needed: "(1) evidence that different measures of the construct yield similar results, and (2) evidence that the construct as thus measured can be differentiated from other constructs."

---

In this study, construct validity was established by the following procedures. The reader will recall that definitions of the constructs used in the study i.e. leader, innovator, policy-scientist, decision-maker, technician-expert and organization-man, were built around Knezevich's administrator-oriented models (see "definition of terms" section, Chapter I) incorporating views from fourteen other authors reviewed in Chapter II. A draft of narratives about the behavior of the six-types of administration was presented to a jury of four experts in the field of educational administrators. The jury was selected in consultation with a member of the writer's reading committee. All four men had earned a doctorate in educational administration, no two of them from the same university; three of them were superintendents for at least ten years of large suburban school districts in the Chicago area; one of them in addition to being a superintendent, was also a lecturer in administration and supervision at Loyola University. The experts were asked to judge the accuracy and adequacy of the narratives in describing each of the six role descriptions. After several drafts unanimity was finally achieved.

It should be pointed out that this method of checking validity is recognized by a number of writers. Engelhart refers to informal ways by which one may gain insight into factors that may influence test scores in his
discussion of construct validity.¹

The second phase in the process of evaluating the instrument was conducted as follows: The instrument was given to six superintendents in a four county area. Three of these superintendents had already the doctorate degree and had been superintendent for several years; three of the superintendents had no doctorates but were at the time enrolled in doctoral programs. The superintendents were given the six descriptions, one for each role, and the six constructs or terms mentioned above. The readers were requested to match terms with their description i.e. the leader was to be matched with a narrative that described behavior of a leader. The results were compared to recommendation of the jury mentioned above and the various authors. The correlation of results of the matching exercises and recommendations of the jury and authors was quite high. Thus validity of the items was established by comparing responses of the two groups - the jury and the practitioners. Readability of the actual instrument was established by presenting final copy of the instrument to two superintendents, a school business manager, and four school teachers.

IV The Investigation

The investigation began the third week of December.

1974, and lasted through February, 1975. A questionnaire was mailed to superintendents of all unit school districts, except the city of Chicago school system, in the State of Illinois. Address labels had been secured through the Illinois Office of Education. A stamped and self-addressed envelope was enclosed to be used in mailing the returns. A cover letter explaining the study and introducing the writer was included. The letter was signed by both Dr. Robert L. Monks, the co-Director of the Study, and assistant professor of school administration at Loyola University, and the writer.

Returns were received from the beginning of the fourth week of December and through the third week of February. After 65% of the questionnaires had been returned, interviews were arranged and conducted during the latter part of February and early March, 1975. It was easy to identify particular superintendents to be interviewed because all respondents had agreed to sign the returns.

As a result of the personal interviews, the author received from a number of the superintendents organizational charts which facilitated the analysis of data.

The data were analyzed through the use of the following techniques:

1. Matrix of Numbers of Entries Per Cell: ABC.
4. Multivariate and Univariate Analysis of Variance
Tests using the Three-Way Classification in #3.

5. Multivariate and Univariate Analysis of Variance Tests using the Two-Way Classification in #3.

6. Duncan's New Multiple Range Test of Contrasts to analyze Simple Main Effects.

CHAPTER IV

ANALYSIS OF DATA

I Introduction

The purpose of the study was to investigate whether the size of administrative staffs, organizational structure and school central office administrative staff utilization varied significantly and systematically with role perception of the superintendent, school population size and school wealth acting independently or in concert. Specifically, the investigation was conducted in order to test seven hypotheses concerning factors thought to affect the size and structure of a school district administrative organization. The hypotheses dealt with:

(1) The relationship of superintendent's role perception, school district population size and school wealth to the size of the school central office administrative staffs.

(2) The relationship of superintendent's role perception, school district population size and school wealth to the number of authority levels between the highest and the lowest positions in the administrative hierarchy.

(3) The relationship of superintendent's role perception, school district population size and school wealth to the span of supervision of the superintendent.

(4) The relationship of superintendent's role perception, school district population size and school wealth to the number of line officers in the administrative organization.
(5) The relationship of superintendent's role perception, school district population size and school wealth to the number of staff officers in the administrative organization.

(6) The relationship of superintendent's role perception, school district population size and school wealth to the number of administrators holding vertical positions.

(7) The relationship of superintendent's role perception, school district population size and school wealth to the number of administrators holding horizontal positions.

A questionnaire was mailed to 438 unit school district superintendents. Two hundred sixty five returns were received and two hundred forty two of these were used in the analysis of data. Each of the 242 respondents was assigned to one of 22 cells based on role perception of the superintendent, size of the district and wealth of the school district. Table 1 shows a three-way classification of the school districts used in the study along with means and standard deviations on seven dependent variables: (1) central office staff size, (2) number of authority levels between the highest and the lowest administrative positions, (3) span of supervision of the superintendent, (4) number of professional specialists in line positions, (5) number of administrators or supervisors in vertical positions, and (7) number of administrators or supervisors in horizontal positions.

A summary of the data in table 1 revealed that:

1. A total of 44 or 18.6% of the superintendents selected role definition number one, or leadership, as the major role of the superintendent. Thirty-six of the
Table 1

Three-Way Classification of School Systems

<table>
<thead>
<tr>
<th>Cell</th>
<th>Factors</th>
<th>No. of OBS</th>
<th>D E P E N D E N T V A R I A B L E</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A B C</td>
<td>OBS</td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>1 1 1</td>
<td>21</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SD</td>
</tr>
<tr>
<td>2</td>
<td>1 1 2</td>
<td>15</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SD</td>
</tr>
<tr>
<td>3</td>
<td>1 2 1</td>
<td>5</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SD</td>
</tr>
<tr>
<td>4</td>
<td>1 2 2</td>
<td>3</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SD</td>
</tr>
<tr>
<td>5</td>
<td>2 1 1</td>
<td>10</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SD</td>
</tr>
<tr>
<td>6</td>
<td>2 1 2</td>
<td>7</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SD</td>
</tr>
<tr>
<td>7</td>
<td>2 2 2</td>
<td>3</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SD</td>
</tr>
<tr>
<td>8</td>
<td>3 1 1</td>
<td>8</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SD</td>
</tr>
<tr>
<td>9</td>
<td>3 1 2</td>
<td>2</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SD</td>
</tr>
<tr>
<td>10</td>
<td>3 2 1</td>
<td>3</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SD</td>
</tr>
<tr>
<td>11</td>
<td>4 1 1</td>
<td>13</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SD</td>
</tr>
<tr>
<td>12</td>
<td>4 1 2</td>
<td>6</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SD</td>
</tr>
<tr>
<td>13</td>
<td>4 2 1</td>
<td>4</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SD</td>
</tr>
<tr>
<td>14</td>
<td>4 2 2</td>
<td>5</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SD</td>
</tr>
<tr>
<td>15</td>
<td>5 1 1</td>
<td>38</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SD</td>
</tr>
<tr>
<td>16</td>
<td>5 1 2</td>
<td>19</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SD</td>
</tr>
<tr>
<td>17</td>
<td>5 2 1</td>
<td>14</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SD</td>
</tr>
</tbody>
</table>
Table 1 (Continued)

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>OBS</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4*</th>
<th>5*</th>
<th>6*</th>
<th>7*</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>5</td>
<td>2</td>
<td>2</td>
<td>9</td>
<td>M</td>
<td>10.55</td>
<td>2.00</td>
<td>8.66</td>
<td>3.66</td>
<td>5.44</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SD</td>
<td></td>
<td>7.81</td>
<td>1.22</td>
<td>6.30</td>
<td>2.23</td>
<td>6.36</td>
</tr>
<tr>
<td>19</td>
<td>6</td>
<td>1</td>
<td>1</td>
<td>32</td>
<td>M</td>
<td>1.25</td>
<td>1.12</td>
<td>3.64</td>
<td>3.03</td>
<td>.38</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SD</td>
<td></td>
<td>.44</td>
<td>.92</td>
<td>2.19</td>
<td>8.78</td>
<td>.76</td>
</tr>
<tr>
<td>20</td>
<td>6</td>
<td>1</td>
<td>2</td>
<td>18</td>
<td>M</td>
<td>1.27</td>
<td>.83</td>
<td>6.11</td>
<td>1.83</td>
<td>.55</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SD</td>
<td></td>
<td>.46</td>
<td>.85</td>
<td>8.61</td>
<td>1.29</td>
<td>1.33</td>
</tr>
<tr>
<td>21</td>
<td>6</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>M</td>
<td>2.00</td>
<td>1.50</td>
<td>8.00</td>
<td>1.50</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SD</td>
<td></td>
<td>.00</td>
<td>2.12</td>
<td>1.41</td>
<td>.70</td>
<td>.00</td>
</tr>
<tr>
<td>22</td>
<td>6</td>
<td>2</td>
<td>2</td>
<td>5</td>
<td>M</td>
<td>7.60</td>
<td>4.00</td>
<td>8.80</td>
<td>1.60</td>
<td>2.20</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SD</td>
<td></td>
<td>7.57</td>
<td>2.23</td>
<td>5.11</td>
<td>1.34</td>
<td>2.04</td>
</tr>
</tbody>
</table>

Factor A = role perception
Factor B = School district population size
Factor C = School wealth

M - cell mean
SD = standard deviation

Levels of Factor A:
1 = Leader
2 = Policy-Scientist
3 = Innovator
4 = Decision Maker
5 = Technician Expert
6 = Organization Man

Levels of Factor B:
1 = Small districts
2 = Large districts
Levels of Factor C:
1 = Less wealthy district
2 = Wealthy districts

* includes building level administrators.
## Table II

### Two-Way Classification of School Systems

<table>
<thead>
<tr>
<th>Cell A</th>
<th>Cell B</th>
<th>No. OBS</th>
<th>DEPENDENT VARIABLE</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 1 1</td>
<td>46</td>
<td>M</td>
<td>1.43</td>
<td>1.26</td>
<td>5.06</td>
<td>1.71</td>
<td>.52</td>
<td>.58</td>
<td>.45</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>SD</td>
<td>.77</td>
<td>1.04</td>
<td>3.76</td>
<td>1.69</td>
<td>1.26</td>
<td>1.90</td>
<td>.86</td>
<td></td>
</tr>
<tr>
<td>2 1 2</td>
<td>11</td>
<td>M</td>
<td>6.72</td>
<td>3.68</td>
<td>14.54</td>
<td>8.00</td>
<td>8.09</td>
<td>3.72</td>
<td>1.45</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>SD</td>
<td>4.05</td>
<td>5.51</td>
<td>11.05</td>
<td>17.35</td>
<td>14.29</td>
<td>4.02</td>
<td>1.50</td>
<td></td>
</tr>
<tr>
<td>3 2 1</td>
<td>36</td>
<td>M</td>
<td>1.50</td>
<td>1.13</td>
<td>6.69</td>
<td>1.36</td>
<td>.63</td>
<td>.63</td>
<td>.22</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>SD</td>
<td>.97</td>
<td>.93</td>
<td>9.46</td>
<td>1.12</td>
<td>1.31</td>
<td>1.19</td>
<td>.48</td>
<td></td>
</tr>
<tr>
<td>4 2 2</td>
<td>12</td>
<td>M</td>
<td>9.66</td>
<td>2.16</td>
<td>6.83</td>
<td>4.00</td>
<td>4.25</td>
<td>2.83</td>
<td>1.66</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>SD</td>
<td>8.37</td>
<td>1.52</td>
<td>3.56</td>
<td>4.70</td>
<td>7.39</td>
<td>3.09</td>
<td>1.96</td>
<td></td>
</tr>
<tr>
<td>5 3 1</td>
<td>57</td>
<td>M</td>
<td>1.64</td>
<td>1.05</td>
<td>5.38</td>
<td>1.78</td>
<td>.33</td>
<td>.54</td>
<td>.56</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>SD</td>
<td>1.28</td>
<td>.95</td>
<td>4.00</td>
<td>1.66</td>
<td>.71</td>
<td>1.08</td>
<td>1.11</td>
<td></td>
</tr>
<tr>
<td>6 3 2</td>
<td>23</td>
<td>M</td>
<td>7.26</td>
<td>2.69</td>
<td>6.82</td>
<td>3.78</td>
<td>3.69</td>
<td>3.52</td>
<td>1.69</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>SD</td>
<td>7.15</td>
<td>2.34</td>
<td>4.67</td>
<td>2.57</td>
<td>5.29</td>
<td>4.67</td>
<td>2.94</td>
<td></td>
</tr>
<tr>
<td>7 4 1</td>
<td>50</td>
<td>M</td>
<td>1.28</td>
<td>1.06</td>
<td>4.54</td>
<td>2.54</td>
<td>1.44</td>
<td>.80</td>
<td>.34</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>SD</td>
<td>.45</td>
<td>.93</td>
<td>5.48</td>
<td>6.94</td>
<td>7.07</td>
<td>1.41</td>
<td>.65</td>
<td></td>
</tr>
<tr>
<td>8 4 2</td>
<td>7</td>
<td>M</td>
<td>6.00</td>
<td>3.28</td>
<td>8.57</td>
<td>1.57</td>
<td>1.57</td>
<td>2.14</td>
<td>2.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>SD</td>
<td>6.75</td>
<td>2.36</td>
<td>4.23</td>
<td>1.13</td>
<td>1.98</td>
<td>2.67</td>
<td>2.88</td>
<td></td>
</tr>
</tbody>
</table>

Factor A = role perceptions  
Factor B = School population size  
M = Cell mean  
SD = Standard deviation  

Levels of Factor A:
1 = Leader or Innovator  
2 = Decision-Maker or Policy Scientist  
3 = Technician Expert  
4 = Organization Man

Factor B Key:  
1 = small  
2 = large

* includes building level administrators.
Superintendents worked in small school systems and eight worked in large systems; 18 were associated with wealthy systems and 26 were associated with less wealthy systems.

2. A total of 20 or 8.3% of the superintendents perceived role definition number two, or the role of policy-scientist, as the most important task of the chief school executive. 17 of the superintendents were associated with large systems; 10 worked in wealthy school systems and 10 in districts that were not considered wealthy.

3. A total of 13 or 5.4% of the superintendents selected the role of innovator, or definition number three, as superintendent's chief role. Of the 13 superintendents, 10 were associated with small school systems while three were associated with large school systems; 2 were in wealthy systems and 11 in non-wealthy school systems.

4. A total of 28 or 11.6% of the superintendents selected decision-making, or definition number four as the major role of the superintendent. 19 of the superintendents worked in small school systems and nine worked in large districts; 17 were associated with non-wealthy and 11 with wealthy systems.

5. A total of 80 or 33.1% of the superintendents selected the role of a technician expert, or definition number five, as superintendent's chief role. Of the 80 superintendents, 57 were in small school systems and 23 were in large systems; 52 were associated with non-wealthy school districts and 28 were associates with wealthy districts.
6. A total of 57 superintendents, or 23.0% of the respondents, selected the role of the organization-man, or definition number six, as the major role of the superintendent. Of the 57, 50 were associated with small school systems and seven were associated with large school districts; 34 were in non-wealthy school systems and 23 were in wealthy school districts.

7. There were 189 small school systems and 53 large systems; 92 of the schools were considered wealthy and 150 were not wealthy.

A summary of the data in table II revealed that:

1. A total of 57 or 24% of the superintendents selected either leadership or innovation as the major role of the superintendent. 46 of the leadership/innovator group were associated with small school systems and 11 with large systems.

2. A total of 48 or 19.9% of the superintendents selected either policy-making or decision-making as the major role of the chief school executive officer. 36 of these worked in small school districts and 12 worked in large districts.

3. A total of 80 or 33.1% of the superintendents selected the role of a technician-expert as the major task of the chief school administrator. 57 of the technician-expert superintendents were in small school systems and 23 were in large systems.
4. A total of 57 superintendents, or 23.0% of the respondents, selected the role of an organization-man as the superintendent's chief role. Of the organization-man group, 50 worked in small school districts and seven worked in large school districts.

5. Altogether there were a total of 189 small school systems and 53 large systems considered in the study.

Section II of Chapter IV was devoted to reporting the results and findings of the over-all effects of factors A, B, and C on the dependent variables.

II Major Analysis of Data

In a three-way multivariate analysis of variance, no sufficient evidence was found to indicate that factor C (school wealth) or the interaction of factor C with factor A (role perception) was related to significant variations among means for each dependent variable. 1 Since there were indications that factors A and B were confounded by factor C, and that factor C was not found to contribute significantly to variations among the dependent variables, the decision was made to increase the statistical power for testing factors A and B through collapsing factor C within A and B thereby gaining greater precision in the statistical test.

1 See tables A and B in the appendix section.
A summary of the analysis is shown in tables III, IV, and V.

The analysis revealed that the effects of school size were significant for each dependent variable as shown in table III; the effects of role perception, factor A (table IV), were declared significant only with respect to central office administrative staff size-variable 1.

The analysis revealed also, according to Table V, a significant interaction of A x B. The occurrence of such significant interaction signaled caution in interpreting the effects of both role perception and school size; the presence of interaction meant that outcomes could not be predicted on the basis of either factor alone because one factor affected the effects of the other factor. Therefore, it became imperative to examine the data further and to conduct simple effects as well as interaction effects analyses. These analyses became the most important comparisons for they indicated exactly where significant differences occurred among the main effects. The results of the analyses are described in section III.
### Table III

A Summary of the Analysis of Variance on the Effects of Factor B

#### Multivariate F - Test

F - ratio for Multivariate Test of Equality of Mean Vectors = 22.2808

Degrees of Freedom = 7 and 228

P less than .0001

#### Univariate F - Tests

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean Square</th>
<th>F Ratio</th>
<th>Probability Less Than</th>
<th>Step Down Probability Less Than</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1442.56</td>
<td>135.09</td>
<td>.0001</td>
<td>135.09</td>
</tr>
<tr>
<td>2</td>
<td>124.51</td>
<td>44.32</td>
<td>.0001</td>
<td>6.529</td>
</tr>
<tr>
<td>3</td>
<td>442.82</td>
<td>12.78</td>
<td>.0005</td>
<td>3.562</td>
</tr>
<tr>
<td>4</td>
<td>279.32</td>
<td>10.70</td>
<td>.0013</td>
<td>.009</td>
</tr>
<tr>
<td>5</td>
<td>599.21</td>
<td>23.76</td>
<td>.0001</td>
<td>3.208</td>
</tr>
<tr>
<td>6</td>
<td>271.16</td>
<td>54.23</td>
<td>.0001</td>
<td>.033</td>
</tr>
<tr>
<td>7</td>
<td>63.46</td>
<td>33.81</td>
<td>.0001</td>
<td>1.959</td>
</tr>
</tbody>
</table>

Degrees of Freedom for hypothesis = 1

Degrees of Freedom for error = 234
Table IV

A Summary of the Analysis of Variance on the Effects of Factor A

Multivariate F - Test

F - ratio for Multivariate Test of Equality of Mean Vectors - 1.0104
Degrees of Freedom = 21 and 655
P less than .4477

Univariate F - Tests

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean Square</th>
<th>F Ratio</th>
<th>Probability Less Than F</th>
<th>Step Down</th>
<th>Probability Less Than</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>33.5522</td>
<td>3.1422</td>
<td>.0261</td>
<td>3.1422</td>
<td>.0261</td>
</tr>
<tr>
<td>2</td>
<td>1.6318</td>
<td>0.5809</td>
<td>.6282</td>
<td>0.8847</td>
<td>.4499</td>
</tr>
<tr>
<td>3</td>
<td>42.1641</td>
<td>1.2178</td>
<td>.3039</td>
<td>1.0626</td>
<td>.3656</td>
</tr>
<tr>
<td>4</td>
<td>7.5364</td>
<td>0.2890</td>
<td>.8334</td>
<td>0.1250</td>
<td>.9453</td>
</tr>
<tr>
<td>5</td>
<td>5.3868</td>
<td>0.2136</td>
<td>.8870</td>
<td>0.8433</td>
<td>.4715</td>
</tr>
<tr>
<td>6</td>
<td>2.1166</td>
<td>0.4233</td>
<td>.7365</td>
<td>0.5121</td>
<td>.6744</td>
</tr>
<tr>
<td>7</td>
<td>1.6597</td>
<td>0.8844</td>
<td>.4499</td>
<td>0.5951</td>
<td>.6189</td>
</tr>
</tbody>
</table>

Degrees of Freedom for hypothesis = 3
Degrees of Freedom for error = 234
Table V

Summary Table of Analysis of Variance on Interaction Effects of Factor A with Factor B

Multivariate F - Test

F-ratio for Multivariate Test of Equality of Mean Vectors = 3.2159

Degrees of Freedom = 7 and 228; P less than .0029

Univariate F - Tests

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean Square</th>
<th>F Ratio</th>
<th>Probability Less Than</th>
<th>Step Down</th>
<th>Probability Less Than</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5.3023</td>
<td>0.4966</td>
<td>.4819</td>
<td>0.4966</td>
<td>.4819</td>
</tr>
<tr>
<td>2</td>
<td>4.3737</td>
<td>1.5569</td>
<td>.2133</td>
<td>2.3619</td>
<td>.1257</td>
</tr>
<tr>
<td>3</td>
<td>433.0552</td>
<td>12.5077</td>
<td>.0005</td>
<td>10.9386</td>
<td>.0011</td>
</tr>
<tr>
<td>4</td>
<td>151.8408</td>
<td>5.8217</td>
<td>.0166</td>
<td>2.7223</td>
<td>.1003</td>
</tr>
<tr>
<td>5</td>
<td>157.2801</td>
<td>6.2374</td>
<td>.0132</td>
<td>3.9335</td>
<td>.0486</td>
</tr>
<tr>
<td>6</td>
<td>3.4380</td>
<td>0.6876</td>
<td>.4080</td>
<td>0.5101</td>
<td>.4759</td>
</tr>
<tr>
<td>7</td>
<td>0.7414</td>
<td>0.3951</td>
<td>.5305</td>
<td>1.1390</td>
<td>.2869</td>
</tr>
</tbody>
</table>

Degrees of Freedom for Hypothesis = 1;

Degrees of Freedom for error = 234
III Simple Effects and Interaction

Effects Analysis

The simple effect analysis was omitted for factor B due to the fact that there were only two levels of this variable - large size and small size. An inspection of the data in Table II revealed that large systems were associated with small means in each of the dependent variables. And, as shown in Table III, for each variable, the differences existing between the means of large systems and those of small systems were statistically significant beyond .99.

The effects of factor A were studied through the use of the Duncan's New Multiple Range tests of contrasts. The test provided a procedure for carrying out all pairwise comparisons among means. The difference, \( W_r \), that a comparison was required to exceed in order to be declared significant according to Duncan's test was given by the following equations:

\[
W_r = q_r, \alpha, r, v \sqrt{\frac{MS \text{ error}}{n}}
\]

where \( W_r \) = difference between means, \( q_r \) = a value obtained from special tables prepared for this test by Duncan.

\( \alpha \) = level of significance.

\( r \) = the number of steps separating ordered means.

MS error = unbiased estimate of the population error
variance,
V = degrees of freedom, which equals total
number of observations less number of
samples
n = sample size.

In the process of computing the difference, Wr,
between means, the harmonic mean was used as a substitute
for n. This practice was necessary because of the unequal size among the samples. The procedure itself was
developed and recommended by Winer\textsuperscript{1} as an extension of the Duncan's test for the case of unequal sample size. The
formula used for deriving the harmonic mean was given by
Winer as
\[ \bar{n} = \frac{k}{\frac{1}{n_1} + \frac{1}{n_2} + \ldots + \frac{1}{n_k}} \]
where \( \bar{n} \) represents the harmonic mean, \( k \) represents the number of samples
and \( n_k \) represents the size of each sample.

Pairwise comparisons were conducted on all possible combinations of A - effects. Because of the presence of a significant interaction, the effects of A were analyzed at each level of factor B. Hence, large school systems were analyzed separately from small school systems. The results of these contrasts are described in
the following subsection.

\textsuperscript{1} Winer, B.J. Statistical Principles in
Analysis of the relationship of role perception of the superintendent to the size of central office administrative staff

The hypothesis of no significant differences in the size of central office administrative staff among school systems with different superintendents' role perceptions was rejected beyond the .95 level of significance as shown in Table IV. An analysis of simple effects and interaction effects revealed the following results:

1. Among large school systems, Table VI, districts associated with decision-makers and policy-scientists had the largest mean central office staff size. The mean of this group was significantly different from the mean of districts associated with either organization-man superintendents or leadership-oriented and innovator superintendents.

2. All other comparisons among the large school systems showed no significant differences. It was found, however, that districts with smaller means were associated with either organization-man superintendents or leadership-oriented and innovators. Districts associated with technician-experts had a moderately high mean.

3. Among small school systems, table VII, no comparisons showed significant differences. However, the tendency persisted for districts associated with technician-experts and decision-maker/policy scientists to have
larger mean size of central office staff; and for districts associated with organization-man superintendents or leader-ship-oriented and innovators to have relatively smaller size of central office staff.
### Table VI

A Summary of Comparisons of Central Office Administrative Staff Size Among Large School Districts Associated with Different Superintendents' Role Perceptions

<table>
<thead>
<tr>
<th>Reject</th>
<th>Accept</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\text{Ho: } \mu_4 = \mu_2$ (p &gt; .95)</td>
<td>$\text{Ho: } \mu_4 = \mu_1$</td>
</tr>
<tr>
<td>$\text{Ho: } \mu_1 = \mu_2$ (p &gt; .95)</td>
<td>$\text{Ho: } \mu_4 = \mu_3$</td>
</tr>
<tr>
<td>$\text{Ho } \mu_1 = \mu_3$</td>
<td>$\text{Ho: } \mu_3 = \mu_2$</td>
</tr>
</tbody>
</table>

$\bar{x}_4 = 6.00 \quad \bar{x}_1 = 6.72 \quad \bar{x}_3 = 7.26 \quad \bar{x}_2 = 9.66$

$\bar{x}_4 = \text{Organization Man} \quad \bar{x}_3 = \text{Technician Expert}$

$\bar{x}_1 = \text{Leader/Innovator} \quad \bar{x}_2 = \text{Decision Maker/Policy-Scientist}$
### Table VII

**A Summary of Comparisons of Central Office Administrative Staff Size Among Small School Districts Associated with Different Superintendents' Role Perceptions**

<table>
<thead>
<tr>
<th>Reject</th>
<th>Accept</th>
</tr>
</thead>
<tbody>
<tr>
<td>$H_0: \mu_4 = \mu_1$</td>
<td>$H_0: \mu_1 = \mu_3$</td>
</tr>
<tr>
<td>$H_0: \mu_4 = \mu_2$</td>
<td>$H_0: \mu_1 = \mu_3$</td>
</tr>
<tr>
<td>$H_0: \mu_4 = \mu_3$</td>
<td>$H_0: \mu_2 = \mu_3$</td>
</tr>
</tbody>
</table>

- $\bar{x}_4 = 1.28$
- $\bar{x}_1 = 1.43$
- $\bar{x}_2 = 1.50$
- $\bar{x}_3 = 1.64$

$\bar{x}_4 =$ Organization Man  
$\bar{x}_1 =$ Leader/Innovator  
$\bar{x}_2 =$ Decision-Maker/Policy-Scientist  
$\bar{x}_3 =$ Technician Expert
Analysis of the relationship of role perception of the superintendent to the number of authority levels between the highest and the lowest administrative positions in the administrative hierarchy. - The hypothesis of no significant differences in the number of authority levels among school systems with different superintendents' role perceptions was accepted as shown in Table IV. Likewise, an analysis of interaction effects revealed no significant differences either among comparisons of large school districts or among comparisons of small school districts. Table VIII and IX showed a summary of the comparisons conducted among the two types of systems.

Although no statistically significant differences were declared, the results of the analyses showed that:
(1) among large school systems, districts associated with leadership-oriented/innovators or with organization-man superintendents had relatively large mean numbers of authority levels than districts associated with either technician experts or decision-maker and policy-scientists;
(2) among small school systems, the reverse of the trend among large systems appeared to be the case - districts associated with either decision-makers and policy-scientists or with technician experts seemed to have smaller mean numbers of authority levels.
Table VIII

A Summary of Comparisons of Number of Authority Levels among Large School Districts Associated with Different Superintendents' Role Perceptions

<table>
<thead>
<tr>
<th>Reject</th>
<th>Accept</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ho: $\mu_4 = \mu_1$</td>
<td>Ho: $\mu_1 = \mu_2$</td>
</tr>
<tr>
<td>Ho: $\mu_4 = \mu_2$</td>
<td>Ho: $\mu_1 = \mu_3$</td>
</tr>
<tr>
<td>Ho: $\mu_4 = \mu_3$</td>
<td>Ho: $\mu_2 = \mu_3$</td>
</tr>
</tbody>
</table>

$x_2 = 2.16$  $x_3 = 2.69$  $x_4 = 3.28$  $x_1 = 3.63$

$x_2$ = Decision-Maker/Policy-Scientist  $x_4$ = Organization Man
$x_3$ = Technician Expert  $x_1$ = Leader/Innovator
Table IX

A Summary of Comparisons of Number of Authority Levels among Small School Districts Associated with Different Superintendents' Role Perceptions

<table>
<thead>
<tr>
<th>Reject</th>
<th>Accept</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ho: ( \mu_4 = \mu_1 )</td>
</tr>
<tr>
<td></td>
<td>Ho: ( \mu_4 = \mu_2 )</td>
</tr>
<tr>
<td></td>
<td>Ho: ( \mu_4 = \mu_3 )</td>
</tr>
</tbody>
</table>

\( \bar{x}_1 = 1.26 \quad \bar{x}_4 = 1.28 \quad \bar{x}_2 = 1.50 \quad \bar{x}_3 = 1.64 \)

\( \bar{x}_1 = \text{Leader/Innovator} \quad \bar{x}_2 = \text{Decision-Maker / Policy-Scientist} \)

\( \bar{x}_4 = \text{Organization Man} \quad \bar{x}_3 = \text{Technician Expert} \)
Analysis of the relationship of role perception of the superintendent to the span of supervision of the superintendent - The hypothesis of no significant differences in the span of supervision of the superintendent among school systems with different superintendents' role perceptions was accepted as shown in Table IV. However, the same hypothesis was rejected upon analysis of interaction effects as shown in Table V. Using the Duncan's test the results summarized in Tables X and XI were revealed. The results showed that:

1. Among large school systems, Table X, districts associated with leadership-oriented and innovators had the largest mean span of supervision size. The mean for this group of schools was significantly different from the means of the three other groups.

2. All other comparisons among the large school systems showed no significant differences.

3. Among smaller school systems, Table XI, no comparisons showed significant differences. However, districts associated with decision-makers and policy-scientists had the largest mean and districts associated with either organization-man superintendents or leader/innovators had smaller mean span of supervision sizes.
Table X

A Summary of Comparisons of Number of Subordinates Reporting to Superintendent among Large School Districts Associated with Different Superintendents' Role Perceptions

<table>
<thead>
<tr>
<th>Reject</th>
<th>Accept</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ho: $\mu_3 = \mu_1$ ($p &gt; .95$)</td>
<td>Ho: $\mu_3 = \mu_2$</td>
</tr>
<tr>
<td>Ho: $\mu_2 = \mu_1$ ($p &gt; .95$)</td>
<td>Ho: $\mu_3 = \mu_4$</td>
</tr>
<tr>
<td>Ho: $\mu_4 = \mu_1$ ($p &gt; .95$)</td>
<td>Ho: $\mu_2 = \mu_4$</td>
</tr>
</tbody>
</table>

$\bar{X}_3 = 6.82$  $\bar{X}_2 = 6.83$  $\bar{X}_4 = 8.57$  $\bar{X}_1 = 14.54$

$\bar{X}_3$ = Technician Expert  $\bar{X}_4$ = Organization Man
$\bar{X}_2$ = Decision-Maker/Policy-Scientist  $\bar{X}_1$ = Leader/Innovator
Table XI

A Summary of Comparisons of Number of Subordinates Reporting to Superintendent among Small School Districts Associated with Different Superintendents' Role Perceptions

<table>
<thead>
<tr>
<th>Reject</th>
<th>Accept</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ho: $\mu_4 = \mu_1$</td>
<td>Ho: $\mu_1 = \mu_3$</td>
</tr>
<tr>
<td>Ho: $\mu_4 = \mu_3$</td>
<td>Ho: $\mu_1 = \mu_2$</td>
</tr>
<tr>
<td>Ho: $\mu_4 = \mu_2$</td>
<td>Ho: $\mu_3 = \mu_2$</td>
</tr>
</tbody>
</table>

$\bar{x}_4 = 4.54 \quad \bar{x}_1 = 5.06 \quad \bar{x}_3 = 5.38 \quad \bar{x}_2 = 6.69$

$\bar{x}_4$ = Organization Man $\bar{x}_3$ = Technician Expert

$\bar{x}_1$ = Leader/Innovator $\bar{x}_2$ = Decision-Maker/Policy-Scientist
Analysis of the relationship of role perception of the superintendent to the number of line officers in the administrative organization - The hypothesis of no significant differences in the number of line officers among school systems with different superintendents' role perceptions was accepted according to Table IV. But, upon analysis of interaction effects, Table V, the hypothesis of no differences was rejected for large districts. Using the Duncan's test of multiple comparisons among large school systems and among small school systems the results summarized in Tables XII and XIII were evident. It was found:

1. That among large school systems, districts that were associated with leadership-oriented and innovator superintendents had the largest mean number of line officers. The mean number of these districts was significantly different from the mean number of districts associated with organization-man superintendents.

2. That any other comparisons, among large school systems, did not show significant differences.

3. That among small school systems, no significant differences existed among the comparisons as shown in table XIII. However, the reverse of the tendency among large school districts appeared to be the case for small districts - systems associated with organization-man superintendents had the highest mean number while districts associated with leadership-oriented/innovators had one of the smallest mean numbers of line officers.
Table XII

A Summary of Comparisons of Number of Line Officers Among Large School Districts Associated with Different Superintendents' Role Perceptions

<table>
<thead>
<tr>
<th>Reject</th>
<th>Accept</th>
</tr>
</thead>
</table>
| $H_0: \mu_4 = \mu_1$ | $H_0: \mu_4 = \mu_3$ $H_0: \mu_4 = \mu_2$
| $H_0: \mu_3 = \mu_2$ $H_0: \mu_3 = \mu_1$ | $H_0: \mu_2 = \mu_1$

$\bar{x}_4 = 1.57$ $\bar{x}_2 = 3.78$ $\bar{x}_2 = 4.00$ $\bar{x}_1 = 8.00$

$\bar{x}_4 = \text{Organization Man}$ $\bar{x}_2 = \text{Decision-Maker/Policy-Scientist}$ $\bar{x}_3 = \text{Technician Expert}$ $\bar{x}_1 = \text{Leader/Innovator}$
Table XIII

A Summary of Comparisons of Number of Line Officers Among Small School Districts Associated with Different Superintendents' Role Perceptions

<table>
<thead>
<tr>
<th>Reject</th>
<th>Accept</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ho: $\mu_1 = \mu_3$ Ho: $\mu_1 = \mu_2$</td>
</tr>
<tr>
<td></td>
<td>Ho: $\mu_1 = \mu_4$ Ho: $\mu_2 = \mu_3$</td>
</tr>
<tr>
<td></td>
<td>Ho: $\mu_2 = \mu_4$ Ho: $\mu_3 = \mu_4$</td>
</tr>
</tbody>
</table>

$\bar{x}_2 = 1.36$  $\bar{x}_1 = 1.71$  $\bar{x}_3 = 1.78$  $\bar{x}_4 = 2.54$

$\bar{x}_2$ = Decision-Maker/Policy-Scientist  $\bar{x}_3$ = Technician/Expert

$\bar{x}_1$ = Leader/Innovator  $\bar{x}_4$ = Organization Man
Analysis of the relationship of role perception of the superintendent to the number of staff officers in the administrative organization - Although the hypothesis of no significant differences in the number of staff officers among school districts with different superintendents' role perceptions was accepted as shown in Table IV, a significant interaction between role perception and size of the school district was evidenced - Table V. An analysis of interaction effects was conducted to determine source of variations. The result of the analysis was summarized in Tables XIV and XV. The results showed that:

1. Among large school systems, districts that were associated with leadership-oriented and innovator superintendents had the largest mean numbers of staff officers. The mean for these districts was significantly different from the mean of districts associated with organization-man superintendents.

2. That no other comparisons, among large school systems, showed significant differences.

3. That no significant differences existed among small school systems with respect to the number of staff officers. However, like in the case of line officers, the reverse of the tendency among large school districts appeared to be the case for small districts. Systems associated with organization-man superintendents had the highest mean while districts associated with leadership-oriented/innovators had one of the smallest means.
Table XIV

A Summary of Comparisons of Number of Staff Officers among Large School Districts Associated with Different Superintendents' Role Perceptions

<table>
<thead>
<tr>
<th>Reject</th>
<th>Accept</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \text{Ho}: \mu_4 = \mu_1 )</td>
<td>( \text{Ho}: \mu_4 = \mu_3 ) ( \text{Ho}: \mu_3 = \mu_1 ) ( \text{Ho}: \mu_4 = \mu_2 ) ( \text{Ho}: \mu_2 = \mu_1 ) ( \text{Ho}: \mu_3 = \mu_2 )</td>
</tr>
</tbody>
</table>

\( \bar{x}_4 = 1.50 \) \( \bar{x}_3 = 3.69 \) \( \bar{x}_2 = 4.25 \) \( \bar{x}_1 = 8.09 \)

\( \bar{x}_4 \) = Organization-Man \( \bar{x}_2 \) = Decision-Maker/Policy-Scientist

\( \bar{x}_3 \) = Technician Expert \( \bar{x}_1 \) = Leader/Innovator
Table XV

A Summary of Comparisons of Number of Staff Officers among Small School Districts Associated with Different Superintendents' Role Perceptions

<table>
<thead>
<tr>
<th>Reject</th>
<th>Accept</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ho: $\mu_1 = \mu_2$</td>
<td>Ho: $\mu_1 = \mu_3$</td>
</tr>
<tr>
<td>Ho: $\mu_1 = \mu_4$</td>
<td>Ho: $\mu_2 = \mu_3$</td>
</tr>
<tr>
<td>Ho: $\mu_2 = \mu_4$</td>
<td>Ho: $\mu_3 = \mu_4$</td>
</tr>
</tbody>
</table>

$\bar{X}_3 = .33$  $\bar{X}_1 = .52$  $\bar{X}_2 = .63$  $\bar{X}_4 = 1.44$

$\bar{X}_3$ = Technician Expert  $\bar{X}_2$ = Decision-Maker Policy-Scientist

$\bar{X}_1$ = Leader/Innovator  $\bar{X}_4$ = Organization Man
Analysis of the relationship of role perception of the superintendent to the number of administrators in vertical positions - The hypothesis of no significant differences in the number of administrators holding vertical positions among school systems with different superintendents' role perceptions was accepted as shown in table IV. Likewise, the effect of the interaction of role perception and size of the school system was found to be non-significant as Table V showed. Therefore, no simple effects or interaction effects analyses were conducted.

Although no significant differences were declared in the number of officers holding vertical positions among the various groups of school systems, the mean numbers of vertical officers themselves were by no means identical as shown in Tables XVI and XVII. Among large school districts, Table XVI, systems associated with leadership-oriented/innovator superintendents had the largest mean number of vertical officers while districts associated with organization-man and innovators had the smallest mean number; among small school districts, table XVI, systems associated with organization-man superintendents had the largest mean number while districts associated with leadership-oriented and innovators had one of the smallest mean number of vertical officers. This was almost a reverse of the situation existing among large school systems.
Table XVI

A Summary Table of the Average Number of Officers Holding Vertical Positions Among Large School Districts Associated with Different Superintendents' Role Perceptions

<table>
<thead>
<tr>
<th>( \bar{x}_4 )</th>
<th>( \bar{x}_2 )</th>
<th>( \bar{x}_3 )</th>
<th>( \bar{x}_1 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.14</td>
<td>2.83</td>
<td>3.52</td>
<td>3.72</td>
</tr>
</tbody>
</table>

\( \bar{x}_4 \) = Organization Man  \( \bar{x}_3 \) = Technician Expert  
\( \bar{x}_2 \) = Decision-Maker/ Policy-Scientist  \( \bar{x}_1 \) = Leader/Innovator
Table XVII

A Summary Table of the Average Number of Officers Holding Vertical Positions Among Small School Systems Associated with Different Superintendents' Role Perceptions

<table>
<thead>
<tr>
<th></th>
<th>( \bar{X}_3 = .33 )</th>
<th>( \bar{X}_1 = .58 )</th>
<th>( \bar{X}_2 = .63 )</th>
<th>( \bar{X}_4 = 1.44 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \bar{X}_3 )</td>
<td>Technician Expert</td>
<td>( \bar{X}_2 )</td>
<td>Decision-Maker/Policy-Scientist</td>
<td></td>
</tr>
<tr>
<td>( \bar{X}_1 )</td>
<td>Leader/Innovator</td>
<td>( \bar{X}_4 )</td>
<td>Organization Man</td>
<td></td>
</tr>
</tbody>
</table>

Analysis of the relationship of role perception of the superintendent to the number of administrators in horizontal positions - Like in the case of vertical positions, the hypothesis of no significant differences in the number of administrators holding horizontal positions among school systems associated with different superintendents' role perceptions was accepted as shown in Table IV. Likewise, the effect of the interaction of role perception and size of the school system was found to be non-significant as Table V showed. Therefore, the simple effects as well as interaction effects were not conducted.

Although no significant differences were declared among mean numbers of horizontal officers for the various groups of schools, the mean numbers themselves varied among the school groups. A summary of the variations was presented for large school systems in Table XVIII and for small school systems in Table XIX. Among large systems, districts that were associated with organization-man superintendents had the largest mean number of horizontal positions and districts that were associated with leadership-oriented and innovators had the least mean number; among small school systems, the largest mean number was that of districts associated with technician-experts while the smallest mean number was that of districts associated with decision-maker and policy-scientists.
Table XVIII
A Summary Table of the Average Number of Officers Holding Horizontal Positions among Large School Districts Associated with Different Superintendents' Role Perceptions

<table>
<thead>
<tr>
<th></th>
<th>( \bar{X}_1 )</th>
<th>( \bar{X}_2 )</th>
<th>( \bar{X}_3 )</th>
<th>( \bar{X}_4 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.45</td>
<td>1.66</td>
<td>1.69</td>
<td>2.00</td>
</tr>
</tbody>
</table>

\( \bar{X}_1 = \) Leader/Innovator  \( \bar{X}_2 = \) Technician Expert

\( \bar{X}_2 = \) Decision-Maker/Policy-Scientist  \( \bar{X}_4 = \) Organization Man
Table XIX

A Summary Table of the Average Number of Officers Holding Horizontal Positions among Small School Systems Associated with Different Superintendents' Role Perceptions

\[ \bar{x}_2 = .22 \quad \bar{x}_4 = .34 \quad \bar{x}_1 = .45 \quad \bar{x}_3 = .56 \]

\[ \bar{x}_2 = \text{Decision-Maker/Policy-Scientist} \quad \bar{x}_1 = \text{Leader/Innovator} \]

\[ \bar{x}_4 = \text{Organization Man} \quad \bar{x}_3 = \text{Technician Expert} \]
In order to clarify the nature of the interaction operating between factors A and B - role perception and school-size - the results of Section III were studied through geometric profiles. Section IV was devoted to these graphic representations which showed how role perception influenced each dependent variable at the different levels of school size. Figures 1 through 7 illustrate interaction effects on each dependent variable. The Y-axis on each drawing represented the means of the groups being compared. The X-axis in each case represented the different levels of role perceptions. The lines of the graphs connect the means of factor B across levels of factor A.

**Geometric Profile 1** Figure 1 indicated significant variation of central office staff size among large school systems with different superintendents' role perceptions. Although the interaction of role perception by school size, in the case of central office staff size, was declared not significant according to Table V, yet it could be seen that the two graphs, b₁ and b₂, were not quite parallel. While the means of b₂ varied significantly, those of b₁ did not vary very much.

**Geometric Profile 2** Figure 2 indicated that the rate of variation of the number of authority levels among large school systems with different superintendents' role perceptions was not identical to a corresponding rate
Figure 1

Geometric Profile Illustrating Effects of Role Perception on Central Office Staff Size for Large and Small School Systems.
among small systems. However, with respect to the number of authority levels, the effect of interaction was found to be non significant.

**Geometric Profile 3.** Figure 3 indicated a significant interaction effect of role perception and school size on the span of supervision of the superintendent. The two graphs $b_1$ and $b_2$ were far from being parallel indicating that the number of subordinates supervised directly by a superintendent was determined by both the size of the school system and by the superintendent's role perception. Generally, large school size generated a broader span of supervision.

**Geometric Profile 4.** Figure 4 indicated a significant interaction between role perception and school size. Clearly, large school size did not imply larger numbers of line officers for all cases. The effect of role perception was such that in some cases large school systems had fewer numbers of line officers than small school systems.

**Geometric Profile 5.** Figure 5 gave an indication that the number of staff officers in the administrative organization was a function of both school size and role perception of the superintendent. The effects of school size on the number of staff officers were modified by the effects of the superintendent's role perception. Hence, while significant differences existed among large school systems in the number of staff officers no such
Mean Number of Authority Levels

Role Perception

1 = Leader/Innovator
2 = Decision-Maker/Policy-Scientist
3 = Technician Expert
4 = Organization Man

b₁ = small school system
b₂ = large school system

Figure 2

Geometric Profile Illustrating Effects of Role Perception on Number of Authority Levels for Large and Small School Systems
Figure 3
Geometric Profile Illustrating Effects of Role Perception on Span of Supervision of the Superintendent for Large and Small School Systems
Figure 4

Geometric Profile Illustrating Effects of Role Perception on Number of Line Officers for Large and Small School Systems
differences existed among small systems.

**Geometric Profile 6.** Figure 6 indicated that while the interaction of school size and role perception was not a crucial factor in effecting differences among school systems in the number of vertical positions, yet some variation did exist especially in the case of large school size. The two graphs were not the same distance apart at all points.

**Geometric Profile 7.** Figure 7 indicated that the number of horizontal positions was strictly a function of school size. Large school districts had more horizontal positions than small school districts irrespective of the superintendent's role perception.
Mean Number of Staff Officers

Role Perception

1 = Leader/Innovator
2 = Decision-Maker/Policy-Scientist
3 = Technician Expert
4 = Organization Man

$b_1$ = small school systems
$b_2$ = large school systems

Figure 5

Geometric Profile Illustrating Effects of Role Perception on Number of Staff Officers for Large and Small School Systems
Figure 6

Geometric Profile Illustrating Effects of Role Perception on Number of Vertical Positions for Large and Small School Systems

1 = Leader/Innovator
2 = Decision-Maker/Policy-Scientist
3 = Technician Expert
4 = Organization Man

b₁ = small school systems
b₂ = large school systems
Mean Number of Horizontal Positions

1 = Leader/Innovator
2 = Decision-Maker/Policy-Scientist
3 = Technician/Expert
4 = Organization Man

b₁ = small school systems
b₂ = large school systems

Figure 7

Geometric Profile Illustrating Effects of Role Perception on Number of Horizontal Positions for Large and Small School Systems
V Analysis of Results of Interviews

The purpose for conducting interviews was two-fold: (a) to verify validity of information obtained through the survey; and (b) to provide an opportunity for an in-depth discussion of some selected topics dealing primarily with the effects of superintendents' role perceptions on administrative organizational structures. To this end, superintendents were asked to comment on the following questions:

1. What titles and duties are given to the incumbents of various central office administrative positions?

2. Do you feel your system has enough central office administrative personnel?

3. What criteria are normally used in making additions to the administrative team?

4. What factors, if any, have prevented your system from getting additional administrative help?

5. If you were to alter the make-up of your administrative team, what changes would you introduce?

The comments of superintendents to the questions listed above were subsequently analyzed. In making the analyses additional information was sought from organizational charts depicting various forms of structure. The results of the analyses are presented in the following paragraphs.
Analysis of titles, functions and lines of responsibility of Central Office administrative officers. The analysis revealed that:

1. The titles of second echelon officers and other subordinates reporting directly to the superintendent included the following: assistant superintendent, assistant superintendent for elementary education, assistant superintendent for secondary education, assistant superintendent for business affairs, assistant superintendent for academic personnel, assistant superintendent for instruction, director of finance and administrative services, business manager, director of instructional programs, director of elementary education, senior high school principal, elementary school principal, director of athletics and physical education, coordinator of school information, and supervisor of curriculum.

2. The titles of third echelon officers, or officers reporting to second echelon administrators, included the following: director of buildings, consultants, director of pupil personnel, director of vocational and technical education, director of music, district athletic director, director of instructional materials and library services, director of finance and administrative services, elementary principal, secondary principal, supervisor for accounting and purchasing, supervisor for data processing, supervisor for physical plants, supervisor for school lunch, supervisor for personnel services, supervisor for curriculum, coordinator and department head.
3. On the basis of a title alone, it was not always possible to determine whether the subordinate belonged to second or third echelon - whether he reported directly to the chief school administrator or to some other administrator. Titles meant different things in different systems. Titles of second level administrators in one system belonged to third level administrators in another system. The assignment of a title and the nature of responsibility that accompanied it appeared to depend on the chief school executive. In a number of cases studied, it appeared decision-makers and policy-scientists tended to require the building principal report directly to the superintendent; leadership-oriented superintendents and innovators tended to have the building principal report to an assistant superintendent. This seemed to explain why, in Table VIII, leadership-oriented and innovators were associated with an extended line of authority while decision-makers and policy-scientists were associated with a short authority structure.

4. On the basis of title alone, the function of an individual administrator was not always possible to determine. Holders of similar titles performed different functions in different systems. A job description pertaining to a position in one district varied with a job description for a similar position in another district. The assignment of functions to individual administrators in the central office seemed to depend on the chief school administrator's role perception. For instance Leadership-
oriented superintendents tended to assign to an assist-
ant superintendent the function of supervising building
principals while decision-makers preferred to keep that
function for themselves.

Analysis of superintendents' comments on the ade-
quacy of the number of central office administrative
personnel. The question of whether there were enough
personnel in the central office administrative organiza-
tion evoked varied responses. The response seemed to
depend on the size of the school district and on the in-
dividual superintendent in case of large districts.
Almost to a man small school district superintendents
did not feel there was a need in the district for addi-
tional central office administrators. Large school dis-
trict superintendents differed in the response to the
same question. Some superintendents needed additional
administrators while other superintendents did not feel
the need to expand the administrative team. The need to
expand was felt more by those chief administrators con-
sidering to expand programs and services to pupils.

Analysis of criteria used in making additions to
the administrative team. The analysis revealed that al-
though some superintendents claimed that there were no
set criteria used in making additions or deletions to the
administrative team, yet many revealed that they were
guided by such conditions as (1) the size of the district
and duties to be performed, (2) changes in the mode of
operations, and (3) failure of a function when indicated by curriculum assessment, standardized testing or teacher evaluations. It appeared the judgement of the superintendent weighed heavily in determining whether to expand or reduce the administrative team.

Analysis of factors preventing school systems from getting additional help. Some superintendents declared that they had faced no difficulties in getting additional help - "when we've asked for additional help, we've been given what we need... as far as the board is concerned." Other superintendents claimed that they were unable to get additional administrators because of the attitude of the board or because of the superintendent's inability to convince the school board to see the need for additional administrative help. Still others pointed to the work-load claiming that the size of the district or the duties to be performed often determined whether additional help was necessary.

When shortages existed, money was not always seen as the real problem. Rather the factors cited above were claimed as the real culprits.

Analysis of changes contemplated by superintendents in the make-up of the administrative team. In replying to the question, "If you were to alter the make-up of your administrative team, what changes would you introduce?" superintendents' responses varied in such a way that clearly indicated the effect of role-perception upon
the size and structure of the administrative organization. The point is supported in the instances cited below:

(1) One superintendent was contemplating addition of an administrator solely for the purpose of getting to know more about what was going on in the classrooms. The administrator was to provide a direct link in communication between the classroom and the superintendent's office: "he would be in touch with teachers and the learning process; so close to the situation to tell us if we are effectively teaching youngsters."

(2) Restructuring the entire organization for the purpose of establishing a dual approach was an idea being contemplated by a superintendent in one school system. The new structure was to be characterized by two divisions; (a) programs and (b) support services. There were to be a deputy superintendent and two directors heading the two divisions. According to the superintendent, the restructured organization would mean "cutting down on central office staff but expanding line positions." (3) A superintendent in a small district was thinking of making an addition to the staff in the area of finance. This was to have the effect of permitting the superintendent "more time to be the educational leader of the district and give more time to the importance of the instructional program." (4) The effect of role perception in the arrangement of the physical space was indicated in the desire of a superintendent to move the superintendent's office away from any of the schools. The superintendent
was planning on doing this because, "I tend to become involved and embroiled in situations that really should not involve this office."

SUMMARY

The analysis of data led to the findings summarized in the following section.

In phase I of the analysis, the three-way multivariate analysis of variance indicated that neither school wealth independently, nor school wealth in concert with role perception were significantly related to the expansion of the central office administrative team or to the structure of the administrative organization. Indications were given, however, that variations existing in both size and structure might be a function of the following variables: (a) role perception of the superintendent, (b) size of the school population and (c) role perception in concert with size of the school population.

In phase II of the analysis, the two-way multivariate analysis revealed the following results:

1. The size of a school district's central office administrative staff varied significantly with role perception of the superintendent and the size of the school population.

2. The number of authority levels in the administrative organization varied directly with the size of the school population. Significant variations were declared between large systems and small systems.
3. The span of control of the superintendent varied significantly with both role perception of the superintendent and the size of the school population.

4. The number of line officers in the administrative organization varied significantly with both role perception of the superintendent and the size of the school population.

5. The number of staff officers in the administrative organization varied significantly with role perception of the superintendent and the size of the school population.

6. The number of vertically assigned officers in the administrative organization varied directly with the size of the school population.

7. The number of horizontally assigned officers in the administrative organization varied directly with the size of the school population.

In phase III of the analysis, the Duncan's New Multiple Range Test revealed that:

1. Among large school systems, decision-makers and policy-scientists tended to be associated with large central office administrative staffs; technician-experts tended to have moderately large or moderately small staffs, and organization-man or leadership-oriented and innovator superintendents tended to be associated with smaller administrative staffs.

2. Among small school systems, no comparisons showed significant differences. However, the tendency
persisted for technician-experts, decision-makers and policy-scientists to be associated with larger administrative staffs and for organization-man or leadership-oriented superintendents and innovators to have smaller staffs in the central office.

3. With respect to number of authority levels, no significant differences were detected either among large school systems or among small school systems. However, among large school systems, districts associated with leadership-oriented and innovators or with organization-man superintendents had relatively more authority levels than did districts associated with either technician-experts or decision-makers and policy-scientists; among small school systems, the reverse was true - districts associated with either decision-makers and policy-scientists or with technician-experts seemed to have less authority levels than did districts associated with organization-man, innovators and leadership-oriented superintendents.

4. Among larger school systems, the span of supervision of the superintendent was significantly large for superintendents in the categories of leadership and innovation than it was for superintendents in all other categories of role perception; among small school systems, no significant differences existed in the superintendent's span of control among various role perception categories.

5. Among large school systems, the number of line officers was significantly larger in districts
associated with superintendents oriented towards leadership and innovation than it was in districts associated with superintendents oriented towards other categories of role perception; among small school systems, no significant differences were observed.

6. Among large school systems, the number of staff officers was significantly larger in districts associated with leadership-oriented and innovator superintendents than it was in districts associated with superintendents in other categories of role perception; among small school systems, no significant differences existed with respect to the number of staff officers.

7. The number of vertically assigned officers did not vary significantly either among large school systems or among small school systems.

8. The number of horizontally assigned officers did not vary significantly either among large school systems or among small school systems.

Thus, the seven hypotheses tested were all upheld for various reasons. Specifically, it was found:

Hypothesis 1: The size of the central office administrative staffs varies with role perception of the superintendent and district size but not with school wealth.

Hypothesis 2: The span of control of the superintendent varies with role perception of the superintendant and district size but not with school wealth.
Hypothesis 3: The number of authority levels in the administrative organizational structure varies only with district size and not with role perception or school wealth.

Hypothesis 4: The number of line officers in the administrative organization varies with role perception and district size but not with wealth.

Hypothesis 5: The number of staff officers in the administrative organization varies with role perception and district size but not with wealth.

Hypothesis 6: The number of vertical positions in the administrative organization varies only with district size but not with role perception or district wealth.

Hypothesis 7: The number of horizontal positions in the administrative organization varies only with district size but not with role perception or wealth.
CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The Problem

The ever increasing numbers and kinds of administrators and supervisors in school districts central offices aroused concerns on the part of teachers, school board members and the general public. The public saw them as lacking in expertise; teachers felt administrators and supervisors possessed too much power and even hindered teaching; and school boards feared a point might be reached where there would be "too many chiefs and not enough Indians."

The situation indicated a need for developing guidelines for use in determining the number and kinds of assistants a superintendent needed for adequate efficient performance. To gain sufficient knowledge that would aid in developing the guidelines needed, researchers made studies investigating the effects of school population size, school wealth, scope of the school program and other factors upon the size of the central office.
staff. A determination was made that the size of the central office staffs varied greatly; the employment of central office assistants and the assignment of duties and responsibilities to subordinates varied also. However, no two of the studies produced identical results; each study pointed to a different set of factors as the cause of variations in staff size, organizational structure or staff utilization.

The lack of general consistency in the findings of previous studies suggested that perhaps the most critical factor or combination of factors responsible for variations in staffing patterns still remained to be identified. One such factor could have been the role perception of the superintendent acting independently or in concert with such factors as school population size and school wealth - factors that were frequently suggested. The relationships that exist between superintendent's role perception and central office administrative staff size, organizational structure or staff utilization had not yet been determined. Hence more studies were needed.

**Purpose of the Study**

The purpose of the study was to investigate whether the size of administrative staffs, organizational structure and school central office administrative staff utilization varied significantly and systematically with role perception of the superintendent,
school population size and school wealth acting independently or in concert.

The Hypotheses

The specific research task centered on verifying or rejecting the following hypotheses:

(1) The size of the central office administrative staffs varies with role perception of the superintendent, school population size and school wealth.

(2) The span of control of the superintendent varies with role perception of the superintendent, school population size and school wealth.

(3) The number of authority levels in the administrative organizational structure varies with role perception of the superintendent, school population size and school wealth.

(4) The number of line officers in the administrative organization varies with role perception of the superintendent, school population size and school wealth.

(5) The number of staff officers in the administrative organization varies with role perception of the superintendent, school population size and school wealth.

(6) The number of vertical positions in the administrative organization varies with role perception of the superintendent, school population size and school wealth.

(7) The number of horizontal positions in the administrative organization varies with role perception of the superintendent, school population size and school wealth.

The Procedure

The study consisted of five phases: (1) a review of pertinent literature; (2) designing the study, developing an instrument, validating the instrument and conducting a survey to obtain primary data; (3) interviews
with a representative sample of the respondents to verify information gathered through survey; (4) analysis of the data utilizing multivariate and univariate analysis of variance procedures and followed by analysis of simple main effects and interaction effects; and (5) drawing up conclusions and recommendations.

Questionnaires were mailed to all superintendents of unit school districts, except for the city of Chicago school system, in the State of Illinois. Two hundred sixty-five or sixty-five percent, returned the questionnaire, but twenty-three failed to complete the questionnaire. The sample, therefore, consisted of two hundred forty-two superintendents.

**Major Findings**

An important assumption underlying the study was that superintendents' role perceptions varied according to Knezevich's administrator-oriented models: (1) leader-model, (2) policy-scientist model, (3) innovator model, (4) decision-maker model, (5) technician-expert model, and (6) organization-man model.¹

The study indicated: (1) 18.6% of the superintendents perceived themselves to be in the leadership category. A superintendent in this category perceived himself primarily as one charged with the responsibility to initiate action and to establish the goals of the school.

---

organization. He regarded himself as one who must de­
velop strategies, including long range plans, for use in
the attainment of the established goals. He was also,
the coordinator of all human effort and a communicator
who must clarify the purposes of the organization. He
viewed administration as an essential organizational
activity related to goal-setting and goal-attainment.

(2) 8.3% of the superintendents perceived them­selves in the role of a policy-scientist. A superintend­
ent in this role perceived himself to be essentially an
adviser to the school board in the realm of policy-making.
He was an architect who formulated regulations that
guided the organization in its daily operations. He
believed that modern administration is a service function
dealing with participation in formulation of policies
relating to the existence of the enterprise, and to the
carrying out of those which are ultimately determined
by the representative body.

(3) 5.4% of the superintendents perceived them­selves to be in the role of innovators. As an innovator
a superintendent focused attention mainly on modernizing
the educational program. He was committed to developing
significant new ways of using professional talent, draw­
ing upon instructional resources, allocating physical
facilities, scheduling instructional time or altering
physical space. He was primarily an initiator of new
programs, new methods and new ideas. He felt
administration is an activity that involves seeking new and imaginative ways of enriching the experiences and services provided to pupils.

(4) 11.6% of the superintendents perceived themselves to be in the decision-makers category. As a decision maker a superintendent emphasized the role of monitoring and coordinating the decision-making process. The superintendent did not necessarily make all decisions himself but, created an organization in which decision-making was facilitated, saw that someone assumed responsibility to make decisions, and prevented certain decisions which deviated too far from overall policy. He felt that decision-making was the central and specific function of administration.

(5) 33.1% of the superintendents perceived themselves in the role of technician-experts. In this traditional role, the superintendent perceived his major role to be one of selecting, orienting and developing a first rate administrative team and teaching staff. He was a procurer of resources necessary for the attainment of the organizational goals (i.e. financial resources and physical facilities). He viewed administration as an activity related to marshalling and utilizing human and physical resources effectively.

(6) 23% of the superintendents viewed their major role as one of keeping things going. This was the role of an organization-man. A superintendent emphasizing this role regarded himself as the educational program
manager who knows how to elicit participation, how to motivate groups and individuals, and how to enhance job satisfaction. He was a generalist who did not think in terms of specific work but in the science of making people work. He felt the crux of his administration lay in reflecting accurately the wishes of the board and getting the job done.

Over half of the superintendents viewed their major role as being that of "technician expert" or "organization man." This perception of role is possibly the result of the actual role the superintendents fulfill at this point in time. The tight money situation and the accountability movement have caused superintendents to be more concerned not only in the procuring of resources but in their efficient utilization.

Surprisingly less than one fourth of the superintendents viewed their major role to be leadership or innovation. Being in leadership positions, superintendents might be expected to place greater emphasis on leadership functions such as initiating new goals, establishing long range plans for the attainment of the goals and modernizing the educational program to ensure that people's expectations from their schools are fulfilled. This, however, did not appear to be the case. On being asked why the majority of superintendents appeared to shy away from viewing themselves in the role of leadership/innovation, one superintendent commented that leadership implies that one had the answers, and the foresight, pertaining to
questions of the future. Few superintendents feel they have such answers.

With respect to the hypotheses tested in the study the results given in the following subsections were indicated.

**HYPOTHESIS I**

The size of the central office administrative staffs varies with role perception of the superintendent, school district population size and school wealth.

It was found that the size of the central office administrative staffs varied with (1) school district population size, and (2) the interaction between school district population size and role perception of the superintendent. School wealth was not found to be significantly related to variations existing in the administrative staffs size among school districts. Specifically, it was found that:

1. Large school systems had larger administrative staffs than small school systems. The difference between large systems and small systems in mean staff size was statistically significant ($p > .99$). This finding was not surprising. Large school systems provide a variety of services to a large number of students. Such provision requires a large number of administrative and supervisory positions.

2. As size of the school district population increased, significant differences occurred in staff size among school districts of similar size. This was a
significant finding. In a previous study by the American Association of School Administrators, discussed in Chapter II, it had been pointed out that when the size of the school district was controlled, pointing to any one cause for variations in administrative staff size was difficult. The present study provides additional information. The evidence indicates that as size of the school district population increases, variations existing among school districts, in the size of the central office administrative staffs, can be accounted for largely by differences in role perceptions among superintendents. This fact was borne out not only in the multivariate statistical tests carried out, but in the interviews as well. Superintendents confirmed that most of the additions or deletions made in the administrative staffs were at the discretion of the superintendent as he saw what duties were to be performed - p. 117. The statistical tests revealed that superintendents perceiving their role to be that of a decision-maker/policy-scientist tend to have, on the average, a significantly larger central office administrative staff size than superintendents holding other role perceptions - p. 83; technician-experts follow with the next large mean staff size, while leadership oriented, innovators, and organization-man superintendents tend to have smaller mean staff sizes.

The reasons for the existence of the above conditions seem to be, (1) decision-makers/policy-scientists tend to build large central office staffs in order to have
a strong focal point from which most major decisions would emanate; (2) technician-experts tend to centralize technical functions and therefore need subordinates in these areas to be in one location closer to the supervision of the superintendent; (3) leader-type superintendents and innovators are likely to stress more expansion of programs and trying out new ideas and hence tend to build an organization in which technical functions and decision-making are decentralized, and in which there is greater emphasis of placing professional specialists at the school building level rather than on a central office basis; and (4) organization-man superintendents, perhaps, feeling that their role involves merely motivating people to work, moderating and adjusting those who do innovate and generally keeping things going, feel no need for amassing large numbers of administrators at the central office level; there is a likelihood also that organization-man superintendents, being more inclinde to emphasize harmonious relations in order not to rock the boat, attach a great deal more attention to the wishes of the organization and are least likely to request that the school board create new administrative positions.

Among small school systems, no significant differences were observed in the size of administrative staffs. This is not to say, however, that small school districts had identical staff sizes. Almost the same pattern of differences observed among large systems was seen to exist among small systems only to a lesser degree (see Tables
VI and VII, pp. 80-81). Although the comparisons among small systems were not statistically significant, the trend in the data indicated that role perception of a superintendent in a small district is just as important as in large districts but the superintendent has no option to exercise his perception (i.e. he is limited by the size of the district).

3. No significant differences in staff size were observed among school systems with different expenditure levels. This finding was surprising. As stated in Chapter II, Furno, in his study, arrived at a different conclusion (see page 21). In that study, Furno observed that the richer the district the more professional administrators were likely to be employed. Such, however, was not the case in the present study. Wealth was not a significant factor in determining the size of the administrative staffs. One reason for this lack of significant difference might be that two school systems might provide the same services to students and thus employ staffs of similar size but have different expenditure levels because of regional cost, differences in salaries, transportation cost and fixed charges.

HYPOTHESIS II

The span of control of the superintendent varies with role perception of the superintendent, school district population size and school wealth.

This hypothesis deals, indirectly, with the question of whether in a school district organization, a
superintendent can supervise only a certain fixed number of subordinates. The evidence showed that the number of subordinates under direct supervision of the superintendent varied among school districts. The range of mean numbers of subordinates reporting to a single superintendent was anywhere from 4.54 to 14.54 (see Tables X and XI). The differences in the means themselves were statistically significant. Probable causes for such variations are given below.

1. The evidence indicated that the number of subordinates reporting to a superintendent was larger in large school systems than it was in small school systems. The difference between large and small systems in the mean number of subordinates reporting directly to the superintendent was statistically significant \( p > .99 \). One reason for such a wide variation between large and small systems in the superintendent's span of supervision (control) appears to be the difference in staff size. As indicated earlier, large school systems have larger central office administrative staffs and therefore superintendents have larger number of people to supervise. However, when school district size is controlled variations persist among districts of similar population size. The probable cause for this condition is discussed below in number 2.

2. As size of the school district population increased, significant differences occurred in the mean number of subordinates reporting to the superintendent among
school systems with different superintendents' role perceptions. Specifically, leaders and innovators were associated with the largest span of supervision, organization-man superintendents were associated with a medium span and decision-makers/policy-scientists were associated with a smaller span of supervision. The least span of supervision was that associated with technician-experts.

The finding above is interesting in that there seems to exist an inverse relation in the span of control between role perceptions associated with large staffs and role perceptions associated with smaller staffs. Superintendents with larger central office staffs, like decision-makers/policy-scientists and technician-experts, had a smaller span of supervision than superintendents with smaller central office staffs, like leadership-oriented/innovators and organization-man superintendents. The reasons for this might be as follows: (1) although leadership-oriented superintendents and innovators tend to maintain small staffs at the central office level, they, nevertheless, make themselves accessible to as many people as possible in order to exchange information on new ideas, new goals to be established, and new programs in the pilot stage; (2) organization-man superintendents are likely to have many people report to them in order to keep a close check on the work being done and the manner in which objectives are accomplished; (3) decision-makers/policy-scientists and technician-experts are more likely to build an organization characterized by a
pyramidal structure and in which few people make most of the decisions.

Among small school systems, no significant differences existed in the mean span of control among school districts. As noted earlier, this lack of significant differences can be attributed to the fact that superintendents of small schools are limited by size to exercise perceptions.

3. Wealth was seen to have no bearing at all on the span of supervision of the superintendent. This result was identical to findings concerning staff size discussed under hypothesis I above.

HYPOTHESIS III

The number of authority levels in the administrative organizational structure varies with role perception of the superintendent, school district population size and school wealth.

This hypothesis dealt with the number of authority levels between the superintendent and the lowest administrative position. The statistical tests showed that the number of authority levels varied significantly only with school district population size. The difference between large school systems and small school systems was statistically significant (p > .99). The reason for such a significant difference must be inherent in the difference in administrative staff size between large and small systems as noted earlier.

It was interesting to note that role perception had
no influence on the number of authority levels either among large school systems or among small school systems. This was the case in spite of significant differences existing in staff sizes associated with various role perceptions particularly among large school districts. Like in the cases noted earlier, wealth, again had no bearing at all on the height of the administrative organization.

HYPOTHESIS IV

The number of line officers in the administrative organization varies with the role perception of the superintendent, school district population size and school wealth.

Hypothesis IV deals with the total number of administrators with line authority in the administrative organization. The purpose was to determine whether the number of line officers among school systems varied and whether the variation could be attributed to any factor or factors. It was found that two variables were responsible for significant variation among school systems in the number of line officers. The variables were, (1) school district population size and (2) the interaction between superintendent's role perception and school district population size. Specifically it was found that:

1. The number of line officers in large school districts was significantly higher than that of small school districts. The level of statistical significance was greater than .99 (i.e. p > .99). This finding was
not surprising since large school districts have larger administrative staffs than small school districts.

2. As size of the school district population increased, the number of line officers varied significantly among districts of similar size. The multivariate statistical tests indicated that variations existing among the large schools in the number of line officers were attributable to differences in the role perceptions among superintendents. Specifically, it was found that (i) leaders/innovators had a significantly larger mean number of line officers than organization-man superintendents; (ii) the second large mean was that associated with decision-makers/policy-scientists; (iii) technician-experts were associated with a smaller mean number of line officers; and (iv) organization-man superintendents had the least mean. These results may be interpreted as follows in the next paragraphs.

Leaders/innovators are the most liberal of all in delegating authority to subordinates. This is necessary since as noted earlier, leaders/innovators are more likely to (1) keep larger numbers of professional specialists at the school building level and (2) to decentralize the decision-making process. Therefore, the necessary authority to implement decisions is delegated to subordinates entrusted with the responsibility to make those decisions at the local level and closer to the scene of action.
Decision-makers/policy-scientists tend to have larger numbers of line officers because they need subordinates invested with the necessary authority to implement policies made higher up the administrative hierarchy. Technician-experts and organization-man superintendents keep fewer line officers because they tend to emphasize functions that require fewer persons with authority.

3. No significant differences existed in the mean number of line officers among school systems with different expenditure levels. The reason for this appears to be the same as in the cases discussed above (hypotheses I-III).

4. No significant differences existed in the mean number of line officers among small school systems with different superintendents' role perceptions. Here, again, like in previous cases, the reason for the lack of significance stems from the fact that small districts do not differ significantly in the size of the administrative staffs.

**HYPOTHESIS V**

The number of staff officers in the administrative organization varies with role perception of the superintendent; school district population size and school wealth.

This hypothesis dealt with those administrators utilized as resource persons or advisory personnel like, curriculum coordinator, assistant superintendent for personnel, assistant superintendent for instruction and the
like. The purpose here was to determine whether superintendents with various role perceptions differ in the utilization of administrative personnel either as staff or line officers. The statistical data revealed an interesting phenomenon taking place. Not only were the findings pertaining to hypothesis V similar to the findings of hypothesis IV dealing with line officers, but almost identical mean numbers were found to exist for staff and line positions. For example, the mean number of line officers associated with leader/innovator superintendents was eight but the mean number of staff officers for the same group was also eight. An examination of the data and other evidence from the interviews lead to the conclusion that in the majority of cases the same administrators occupying staff positions also exercised line authority. For instance, it was observed in several cases that an assistant superintendent in charge of instruction also had line authority over principals and/or teachers.

The practice of delegating authority to subordinates in staff positions resulted in a problem of trying to distinguish line officers from staff officers. Thus the results of hypothesis V were identical to those of hypothesis IV. It was found:

1. Like in the case of line officers, the number of staff officers was significantly larger in large school systems than it was in small school systems (p > .99)
2. As size of the school district population increased, significant differences in the number of staff officers occurred among systems with different superintendents' role perceptions. For instance leader/innovator superintendents were associated with the largest mean number of staff officers. The difference in mean number of staff officers between leader/innovator and organization-man superintendents was statistically significant ($p > .95$). Decision-makers/policy-scientists were associated with the next largest mean number of staff officers. Technician-experts had a medium number of staff officers and organization-man superintendents had the least mean.

Among small school systems, no significant differences were evident among systems with different superintendents' role perceptions.

3. No significant differences existed in the mean number of staff officers among school systems with different expenditure levels.

**HYPOTHESIS VI**

The number of vertical positions in the administrative organization varies with role perception of the superintendent, school district population size and school wealth.

This hypothesis deals with administrators assigned along a specific function covering all grade levels, like coordinator of mathematics, supervisor of music, director of English education and the like. The purpose of this
hypothesis was to investigate the determinants of the number of administrators assigned vertically. It was found the number of vertical positions was a function of no other factor other than size of the school district population. The statistical tests showed that large school systems had larger numbers of vertical positions on the average. The difference between the two types of systems, large and small, was statistically significant \( p > .99 \).

The reason for large school systems to have larger numbers of administrators in vertical positions is clearly due to the scope of programs offered. Coordination of activities, registration of students and assignment of teachers within a single function often requires the services of a full-time administrator.

The other factors investigated, namely, wealth and role perception appeared to have no significant influence. In the case of wealth, this was merely a continuation of the pattern established with other variables; in the case of role perception, the trend was towards different mean numbers of vertical positions even though statistically the differences were non-significant. (Table XVI).

The most prevalent titles carried by administrators in vertical positions were reported as: general assistant superintendent, assistant superintendent for business affairs, assistant superintendent for academic personnel, assistant superintendent for instruction, director of finance and administrative services, business manager,
director of instructional progress, director of athletics and physical education, coordinator of school information, director of pupil personnel, director of buildings, director of vocational and technical education, director of music, director of instructional materials and library services, supervisor for accounting and purchasing, supervisor for physical plants, supervisor for school lunch and supervisor of curriculum.

The number of administrators in vertical positions appears to exceed the number of administrators in horizontal positions according to Table II. One reason for this might be that superintendents tend to perceive functions more on a district wide basis than on a specific grade level or school basis.

**HYPOTHESIS VII**

The number of horizontal positions in the administrative organization varies with role perception of the superintendent, school district population size and school wealth.

In this hypothesis, the term horizontal positions refers to responsibilities along grade levels across subject fields such as director of elementary education, or director of secondary education. The statistical tests performed revealed that, like in the case of vertical positions - hypothesis VI, the number of horizontal positions is strictly a function of school district population size. The effect of role perception is minimal and that of wealth is nil.
The difference in the number of horizontal positions between large school systems and small systems was statistically significant (\( p > .99 \)). One reason for the existence of such a significant difference might be the difference in the number of school buildings between large systems and the small systems or in the number of professional personnel. Large systems often have a number of school buildings offering similar programs. Therefore they end up having a number of principals of similar grades and a large number of personnel working at the same grade levels. The work of principals and large numbers of teachers of similar grades often requires the coordination of a full-time administrator.

The most common titles carried by administrators in horizontal positions were reported to be: assistant superintendent for elementary education, assistant superintendent for secondary education, elementary principal, and director of elementary education, elementary principal, and high school principal.

As noted earlier, the number of horizontal positions in school systems appears to be less than the number of vertical positions in the same systems.

Conclusions

The findings of the study indicate that role perception of the superintendent, size of the school district population and the interaction of role perception with size are the factors to consider in the development
of guidelines for use in determining the number and kinds of administrators and supervisors needed to staff school districts' central office. Central office administrative staff size, organizational structure and staff utilization depend upon these factors. Specifically, the following conclusions are reached.

1. The size of the central office administrative staffs is a function of two factors; school population size and role perception of the superintendent.

Size of the school district population is merely a necessary condition but not a deciding factor in the expansion of central office administrative staffs. When the size of the school district population is large enough, the determinant of staff size becomes the role perception of the superintendent. The lack of standards, or guidelines, leaves the superintendent no alternative but to rely on his role perception in determining the number and kinds of assistants needed.

In small districts, the role perception is just as important as in large districts but the superintendent has no option to exercise his perception.

The factor of wealth, as measured by expenditure per pupil, does not appear to be significantly related to the size of the central office administrative team. School districts that are not as wealthy as other districts do not necessarily employ fewer administrators and supervisors. Probably they just pay their administrators
lower salaries than wealthy districts.

2. No evidence exists to indicate an optimum span of supervision for superintendents. The number of subordinates reporting directly to the superintendent increases with the size of the school district population. But, when the size of the district is controlled, significant variations exist among school systems with different superintendents' role perceptions. For example, leaders/innovators and organization-man superintendents tend to be associated with a large span of supervision while decision-makers/policy-scientists and technician-experts are associated with a limited supervisory span.

3. The number of authority levels in the administrative organization is a function of the size of the school district population and not of role perception nor school wealth. For example, bigger systems have more authority levels than small systems. But among school districts of similar size or similar expenditure level, no significant differences exist.

4. The number of line officers increases as the size of the school district population increases, but varies significantly among large school systems with different superintendents' role perceptions. For example, leaders/innovators have a tendency of having larger numbers of line officers than other role perceptions.

5. The distinction between staff and line officers appears to exist in theory only. In practice, school districts make little distinction between the two types of
positions. Administrators said to be in staff positions appear very often to have line authority over other personnel. For example, an assistant superintendent for instruction frequently has line authority over building principals.

6. In general, the differences existing among superintendents concerning the major role of the chief school administrator have important implications for school districts' administrative organizations. For example,

a. Some superintendents like decision-makers and policy-scientists tend to build large and strong central office staffs from which most major decisions emanate. However, the same type of superintendents tend to keep to a minimum the number of authority levels in the organizational structure. The latter practice is in keeping with Griffith's theory that emphasizes keeping the organizational structure as flat as possible. In this way, it is believed the decision-making function is diffused within the staff. ¹

b. Superintendents like leaders and innovators tend to keep smaller central office staffs but increase the number of line and staff officers at the building level. Such superintendents tend also to make themselves accessible to as many people as possible by having a large span

¹Griffiths, Carter and Sergiovanni, Organization and Human Behavior, p. 62.
of supervision. The practice by these superintendents of keeping professional services closer to the building level was stressed by McKenna in the belief that the number of school district professional specialists who work at the elementary school level and on the secondary school level is more contributory to quality education than does the number who work on a system wide basis.\(^1\)

c. Superintendents like technician-experts, tend to build moderately large central office staffs, but maintain a relatively limited span of supervision. Such superintendents seem to agree with Urwick's contention that "no supervisor can supervise directly the work of more than five, or, at most six, subordinates."\(^2\)

d. Superintendents like organization-man type tend to have relatively small central office staffs, maintain a moderately tall organizational structure and a relatively broad span of control.

Recommendations for Further Research

The conclusions stated above suggest that there are areas of concern which were beyond the scope of this study but that could be explored by other researchers. The following are such areas:

1. The study of the effects of superintendents' role perception upon the quality and outcome of the

\(^1\)McKenna, *Staffing the Schools*, p. 8.

\(^2\)Urwick, *Elements of Administration*, p. 126.
educational program.

2. The study of the relationship of role perception to district-wide management of the school program.

3. A study of the way a superintendent manages the district in terms of curriculum, finance and personnel resources.

4. The study be replicated with other unified districts in other states to find if the results are consistent.

5. A study of why superintendents differ in role perception: i.e. the effects of different approaches taught by different universities on role perceptions of superintendents or the effect of personal background of the superintendents themselves on role perceptions.

The present study dealt with the effects of role perception of the superintendent upon size, structure and utilization of the administrative staff, but the areas mentioned above were not explored.

Recommendations for Superintendents and School Boards

As a result of the study several recommendations are made:

1. It is recommended that superintendents evaluate their position concerning the major role of the chief school administrator. Superintendents need to be aware that the destiny of the schools lies in their hands and,
therefore, leadership in goal-setting and goal-attainment becomes the paramount role of the superintendent.

2. Seeing that a superintendent's role perception tends to affect the entire organizational structure of a school district's administration, it is recommended that school boards weigh carefully a candidate's role-orientation. Specifically,

(a) boards need to be aware that if they hire a superintendent who sees his role in the category of decision-making/policy-making or technician-expert they can expect to hire additional central office staff assistants.

(b) if school boards desire participatory decision-making they should hire superintendents whose role perception is consistent with participatory decision-making.

(c) school boards need to be aware that conflicts between board and superintendent can be partially avoided if the board identifies its perception of the role of a superintendent and hire a man whose role perception is complimentary.

(d) if boards believe that the quality of education is related to number of specialists working at building level rather than district wide they should employ a man who perceives his role to be leader or innovator.

(e) if boards desire to maintain a minimum size of
the central office administrative staff, they should hire a man who sees his major role in the following categories; organization-man, leadership or innovation.

(f) if boards wish to have personnel closely supervised, they should hire a man who is oriented towards technical functions, decision-making or policy-making.

(g) if boards wish to have a man who will modernize the educational program and establish long range and short range plans, they should hire a man who perceives his major role to be one of leadership or innovation.

(h) if boards desire to have a man who will maintain the status quo, rather than pioneer, and keep the organization at equilibrium, they should hire an organization-man.

(i) boards can identify the different types of superintendents by administering to candidates a role perception inventory.
BIBLIOGRAPHY


APPENDICES
APPENDIX A

SUMMARY TABLE OF ANALYSIS OF VARIANCE ON THE EFFECTS OF FACTOR C
### Multivariate F - Test

F - ratio for Multivariate Test of Equality of Mean Vectors - 1.4348

Degrees of Freedom = 7 and 230

P less than .1922

### Univariate F - Tests

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean Square</th>
<th>F Ratio</th>
<th>Probability Less Than</th>
<th>Step Down Probability</th>
<th>Probability Less Than</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>8.5333</td>
<td>0.7988</td>
<td>.3722</td>
<td>0.7988</td>
<td>.3724</td>
</tr>
<tr>
<td>2</td>
<td>6.3797</td>
<td>2.2678</td>
<td>.1335</td>
<td>3.4260</td>
<td>.0655</td>
</tr>
<tr>
<td>3</td>
<td>46.3452</td>
<td>1.2735</td>
<td>.2603</td>
<td>2.4081</td>
<td>.1220</td>
</tr>
<tr>
<td>4</td>
<td>96.3066</td>
<td>3.6384</td>
<td>.0577</td>
<td>2.1007</td>
<td>.1486</td>
</tr>
<tr>
<td>5</td>
<td>34.5601</td>
<td>1.3436</td>
<td>.2476</td>
<td>0.6057</td>
<td>.4375</td>
</tr>
<tr>
<td>6</td>
<td>0.5581</td>
<td>0.1142</td>
<td>.7357</td>
<td>0.1173</td>
<td>.7324</td>
</tr>
<tr>
<td>7</td>
<td>1.5582</td>
<td>0.8444</td>
<td>.3590</td>
<td>0.5897</td>
<td>.4435</td>
</tr>
</tbody>
</table>

Degrees of Freedom for hypothesis = 1

Degrees of Freedom for Error = 236

Variable Mean
APPENDIX B

SUMMARY TABLE OF ANALYSIS OF VARIANCE ON INTERACTION EFFECTS OF FACTOR A WITH C
Multivariate F - Test

F - ratio for Multivariate Test of Equality of Mean Vectors = 1.7944

Degrees of Freedom = 7 and 235

P less than .0892

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean Square</th>
<th>F Ratio</th>
<th>Probability Less Than F</th>
<th>Probability Less Than F</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.2551</td>
<td>0.0103</td>
<td>.9195</td>
<td>.9197</td>
</tr>
<tr>
<td>2</td>
<td>15.5204</td>
<td>2.8219</td>
<td>.0943</td>
<td>5.1971</td>
</tr>
<tr>
<td>3</td>
<td>187.8104</td>
<td>2.5335</td>
<td>.1128</td>
<td>0.9967</td>
</tr>
<tr>
<td>4</td>
<td>11.5657</td>
<td>0.3466</td>
<td>.5567</td>
<td>0.6101</td>
</tr>
<tr>
<td>5</td>
<td>15.2562</td>
<td>0.5043</td>
<td>.4784</td>
<td>3.353</td>
</tr>
<tr>
<td>6</td>
<td>3.8141</td>
<td>0.5072</td>
<td>.4771</td>
<td>0.9911</td>
</tr>
<tr>
<td>7</td>
<td>2.9559</td>
<td>0.8881</td>
<td>.3469</td>
<td>1.3300</td>
</tr>
</tbody>
</table>

Degrees of Freedom for Hypothesis = 1;

Degrees of Freedom for Error = 241
APPENDIX C

COVER LETTER TO THE SUPERINTENDENTS

EXPLAINING THE PURPOSE

OF THE STUDY
Dear Superintendent,

This is to introduce Mr. Morven Ngaiyaye who is studying administration in the United States. Mr. Ngaiyaye is interested in the roles of the superintendent and in various patterns of organizing the school office administration.

In the study he is conducting, Mr. Ngaiyaye is seeking to determine (a) roles considered crucial or most important by various superintendents and (b) organization of the central office with respect to kinds and numbers of administrators employed to assist the superintendent.

Such information will be very valuable in helping a new superintendent organize his office particularly in the new developing countries.

We would appreciate you taking 20 minutes of your valuable time to complete the enclosed questionnaire. A self-addressed return envelope is enclosed for your convenience.

No names of superintendents or school systems will be made public in the compilation of these data. If you yourself would like to know what your fellow superintendents consider to be the most important role of the superintendent, please let us know and a summary sheet of the study will be mailed to you.

Thank you very much for your cooperation, it is greatly appreciated and most helpful.

Yours very truly

____________
Morven Ngaiyaye

____________
Robert Monks,
Adviser
APPENDIX D

QUESTIONNAIRE DEVELOPED FOR
USE IN THE STUDY
PART A

Role Perception of Superintendent

INSTRUCTIONS: Each of the six narratives given below describes a probable major role of the superintendent in the administrative process of the public school system. Although every superintendent may operate in each of six roles at one time or another, frequently the superintendent operates in a style described by only one of the six roles. Please select the one role description which best represents your administrative style, and place a check (√) after it. Only one of the six roles may be selected.

STYLE 1 The superintendent perceives himself primarily (√) as one charged with the responsibility to initiate action and to establish the goals of the school organization. He regards himself as one who must develop strategies, including long range plans, for use in the attainment of the goals established. He is also, the coordinator of all human effort and a communicator who must clarify the concerns of the organization. He views administration as an essential organizational activity related to goal-setting and goal-attainment.

STYLE 2 The superintendent perceives himself to be ( ) essentially an adviser to the school board
in the realm of policy-making. He is an architect who formulates regulations that guide the organization in its daily operations. He believes that modern administration is a service function dealing with participation in formulation of policies relating to the existence of the enterprise; and to the carrying out of those which are ultimately determined by the representative body.

**STYLE 3**
The major role of the superintendent lies ( ) in modernizing the educational program. He is committed to developing significant new ways of using professional talent, drawing upon instructional resources, allocating physical facilities, scheduling instructional time or altering physical space. He is primarily an initiator of new programs, new methods and new ideas. He feels administration is an activity that involves seeking new and imaginative ways of enriching the experiences and services provided to pupils.

**STYLE 4**
The superintendent believes his major role ( ) pertains to monitoring and coordinating the decision-making process. He does not make all decisions himself but, creates an
of the board and getting the job done.

PART B

THE SCHOOL SYSTEM

Please supply the information requested below by filling in the blank spaces.

1. Total system-wide enrollment

2. Per pupil expenditure level

3. Total number of central office administrators (i.e. administrators with system-wide responsibility) including superintendent, assistant supt., directors, coordinators, supervisors, etc.

4. Number of authority levels between superintendent and lowest administrative position

5. Does the principal report directly to the superintendent? Yes No

6. Number of persons who report directly to the superintendent

7. Number of central office administrators in line positions (i.e. have authority over subordinates including teachers)

8. Number of central office professionals in Staff positions (i.e. have no line authority but serve like consultants, advisers or resource persons)
organization in which decision-making is facilitated, sees that someone assumes responsibility to make decisions, and prevents certain decisions which deviate too far from overall policy. He feels that decision-making is the central and specific function of administration.

STYLE 5

The superintendent perceives his major role to be one of selecting, orienting and developing a first rate administrative team which in turn would select, orient and develop a first rate teaching staff. He is also a procurer of resources necessary for the attainment of the organizational goals (i.e. financial resources and physical facilities). He views administration as an activity related to marshalling and utilizing human and physical resources effectively.

STYLE 6

The superintendent views his major role as one of keeping things going. He regards himself as the educational program manager who knows how to elicit participation, how to motivate groups and individuals, and how to enhance job satisfaction. He is a generalist who does not think in terms of specific work but in the science of making people work. He feels the crux of his administration lies in reflecting accurately the wishes
9. Number of central office administrators in Vertical positions (i.e. are in charge of a function or subject area like Music Supervisor, irrespective of grade levels K - 12)

10. Number of central office administrators in horizontal positions (i.e. are in charge of grade levels across subject fields like, director of elementary education, or supervisor of elementary education)

11. Total number of administrative, supervisory, business, advisory, special services, or library positions in the system including building level services but excluding clerical or custodial services (i.e. total number of non-teaching but professional positions)

Signed: ____________________________  School district ______________
       Superintendent                       County ________________

I would like to receive a summary sheet of the findings: Yes  No
The dissertation submitted by Morven Simon Welton Ngaiyaye has been read and approved by the following Committee:

Dr. Robert L. Monks, Chairman, Assistant Professor, Educational Administration, Loyola.

Dr. Jasper J. Valenti, Professor and Associate Dean, School of Education, Loyola.

Dr. Melvin P. Heller, Professor and Chairman, Educational Administration, Loyola.

Dr. Max A. Bailey, Associate Professor, Educational Administration, Loyola.

Dr. Phillip M. Carlin, Associate Professor, Educational Administration, Loyola.

The final copies have been examined by the director of the dissertation and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the dissertation is now given final approval by the Committee with reference to content and form.

The dissertation is therefore accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

1-12-76

Date

[Signature]

Director