AN ANALYSIS OF THE RELATIONSHIP OF THE ORGANIZATIONAL
SETTING TO SUCCESS RATE ON THE LICENSURE
EXAMINATION IN FORTY NURSING SCHOOLS

DISSERTATION

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By

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An exploratory study was undertaken to develop an organizational profile of forty nursing schools in the midwest and southern regions and to provide useful data for planning decisions. Data were obtained through mailed questionnaires and telephone interviews. The dependent variable is success rate on the licensure examination; the independent variables are ten organizational characteristics of nursing schools. The data were examined by descriptive statistics, Pearson correlations, and multiple regression analysis, using a .05 level of significance.

The findings are as follows.

1. A profile of nursing schools includes the following characteristics: a GPA of 2.32 is required to progress to the upper division; 46 per cent of upper division enrollment complete the program; average faculty size is twenty-seven; 22 per cent of the faculty have doctorates; 45 per cent offer only the baccalaureate degree; one administrative level separates the faculty from the dean; four subunit heads report to the dean; faculty participate in decision-making...
at the advice-only level; the faculty-student ratio is 1:11; the success rate on the licensure examination is 88.48 per cent.

2. Midwest, publicly supported, and higher-success rate schools have higher GPA requirements; higher-success rate schools have lower percentages of upper-division enrollment students who complete the program, and lower faculty-student ratios; publicly supported schools are larger, have higher percentages of faculty who have doctorates, and higher success rates on the licensure examination.

3. There is a statistically significant relationship between faculty-student ratio and success rate.

4. Size of faculty, number of faculty who have doctorates, one-degree program, and control have significant relationships with each other and various other variables.

5. Faculty-student ratio and percentage of upper division enrollment are the only variables that have significant multiple relationships with success rate; together they account for 31 per cent of the variance of success rate.
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CHAPTER I

INTRODUCTION

Nursing education, over the past few decades, has experienced a growth and expansion which is comparable to that in other areas of postsecondary education. Nursing education has evolved from apprenticeship-type training in a service setting to formalized education in postsecondary institutions. A notable aspect of the growth phenomenon in nursing education is related to the various basic nursing programs that prepare individuals to practice as registered nurses. At the present time, there are hospital based three-year programs that lead to a diploma in nursing, community college based two-year programs that lead to an associate degree, and college or university based four-year programs that lead to a baccalaureate degree. In general, there has been a trend away from diploma programs in favor of degree programs (27, p. 1) in which education rather than service is the focus.

These programs differ in a variety of ways (18, p. 124; 31, pp. 12-14) including the success rate of their graduates on the licensing examination (32, p. 164). In addition, a recent study of students' performance on
the licensing examination found that the differences were greater within each of the three types of programs rather than among the programs (23, p. 308). Program differences have been examined primarily from the viewpoints of student characteristics and curriculum; there has been little focus on analyses of nursing schools as formal organizations (13). One study examined the differences in associate degree programs by comparing effectiveness ratings to performance on the licensure examination (1). Another compared baccalaureate programs in relation to their organizational patterns (15). No studies were found that examine the relationships of various organizational characteristics of nursing schools to the performance rate on the licensure examination, or which use the rate as a measure of organizational effectiveness.

There is a trend, although controversial within the profession, toward a strong emphasis on the preparation of professional nurses through baccalaureate degree programs (26, p. 1). Currently, approximately 27 per cent of nursing schools offer the baccalaureate degree (27, p. 2). From an organizational standpoint, these nursing schools are academic units within institutions of higher education and, as such, share their privileges and responsibilities (11, p. 140).

Colleges, universities, and their academic units are described as bureaucratic organizations, although their
bureaucratic nature is different from other types of organizations (34, pp. 3-86). In addition, institutions of higher education have a traditional characteristic of diversity, both among and within institutions (2, p. 9; 9, p. 12; 33, p. 9). Such diversity suggests that the environment of higher education is dynamic (9, p. 12) and that a contingency approach is appropriate to the design of academic units within such institutions (7, p. 352). Concerning the organizational framework of academic departments, Hobbs and Anderson present a general organization model for academic units that is based on various purposes, although they state that other composite models could be designed (16, p. 259). Such a study implies also the appropriateness of a contingency approach.

Apparently, little effort has been made to examine baccalaureate nursing schools as formal organizations within varying settings. The nature of the organizational setting and the educational outcome of such schools will be examined in this study.

Statement of the Problem

The problem with which this study is concerned is an analysis of the relationship of organizational setting to success rate on the licensure examination in forty nursing schools or divisions that offer a baccalaureate program.
Purposes of the Study

The purposes of this study are twofold. The first is to develop a profile of the organizational setting of the typical nursing school or division that offers a baccalaureate degree. The second purpose is to obtain data that will be useful in making planning decisions regarding the organization of nursing schools.

Research Questions

For the purposes of this study, answers to the following questions were sought.

1. What are the specific organizational characteristics of the typical nursing school that offers a baccalaureate degree?

2. What are the specific organizational characteristics of the typical nursing school when schools are grouped according to region, control, academic requirements, and success rate?

3. To what extent do certain aspects of the organizational setting of nursing schools relate to their success rate on the licensure examination?

4. To what extent do certain aspects of the organizational setting relate to success rate on the licensure examination when nursing schools are grouped according to region, control, academic requirements, and success rate?
5. What are the relationships among the various aspects of the organizational setting of nursing schools?

6. What are the relationships among the various aspects of the organizational setting of nursing schools when schools are grouped according to region, control, academic requirements, and students' success rate?

7. To what extent do the combined aspects of the organizational setting relate to the success rate of nursing schools?

Definition of Terms

For the purposes of this study, the following definitions are used.

Academic requirements are high school graduation or the completion of one or more years of college for entry into a baccalaureate nursing program.

A nursing school is an academic unit within a college or university that exists for the purpose of providing a program in nursing which leads to a Bachelor of Science degree, regardless of its official title as college, school, division, or department. In addition, such a school may offer the master's or doctoral degrees in nursing.

The organizational setting of an institution is the nature of the organization as characterized by the following ten independent variables:
(a) **Vertical differentiation** refers to the number of organizational levels between the faculty and the dean of the nursing school;

(b) **Horizontal differentiation** refers to the number of academic subunits or divisions whose heads report directly to the dean; there must be two or more persons in a unit for it to be considered a unit;

(c) **Complexity** refers to the number of nursing programs offered (see questionnaire); one indicates baccalaureate only, two includes baccalaureate and master's, and three includes baccalaureate, master's, and doctoral degrees;

(d) **Faculty decision-making score** refers to the mechanism for determining faculty participation in academic decision-making (see Chapter IV);

(e) **Control** refers to a dummy variable wherein one indicates public control and zero indicates private control;

(f) **Size** refers to the number of full-time-equivalent faculty;

(g) **Selectivity** refers to the grade-point average required for progression to the upper division level of the nursing program;

(h) **Completion index** refers to the number of graduations for 1978 divided by the undergraduate enrollment for that year;
(i) **Faculty qualifications** refers to the total number of nursing school faculty who hold a doctoral degree as the highest earned degree;

(j) **Faculty-student ratio** refers to the number of full-time equivalent faculty divided by the enrollment for the current year.

**Regions** refer to the midwest and southern divisions of the United States as defined by the National League of Nursing.

The **success rate** on the licensure examination which is used as the dependent variable, is equal to the number of graduates of a nursing school who passed the licensure examination in the first attempt in July, 1978, divided by the total number of that school's graduates who took the same examination.

A typical **nursing school** is a profile drawn from the schools in the study sample as characterized by the composite of the mean scores on all variables.

**Conceptual Framework**

Carlisle's (7) contingency model will be used as the framework for this study. According to Carlisle, organizations may be described according to two sets of variables, internal and external. Each set is characterized by certain key variables that may blend in a variety of
ways to define the nature of a particular organizational setting (7, p. 61).

Internal factors (or internal contingency variables) are (1) the purpose of the organization, (2) the tasks involved in performing the operations required to attain the purpose of the organization, (3) technical content or the technology of the tasks and operations, (4) the nature of the people who perform the tasks, and (5) the structure of the organization. External factors (or those external forces to which the effective organization must adjust) include forces and institutions that are (1) political and legal, (2) technological, (3) sociocultural, and (4) economic (7, p. 61).

According to Carlisle, the significance of external variables becomes relevant at the higher levels of decision making, where the concern is more with external factors. In contrast, lower level decision makers are more concerned with the impact of their decisions on internal factors (7, p. 61). For this study, the primary focus will be on certain internal factors in the organizational setting, although some consideration will be given to external factors.

Background and Significance of the Study

Nursing schools, like their parent institutions, are facing a future of uncertainties—one that holds great
implications for administrative decision-making. The trends indicate that there will be a decline in the growth rate of enrollments and a tightened financial situation (9, pp. 1, 8). These events follow an accelerated growth pattern for higher education in general, especially in graduate and professional schools (22, p. 21). Among the issues that must be faced, in addition to financial austerity, are the demands by faculty and students for increased participation in decision-making and by the public for accountability (6, pp. 78-79). The accountability demand is related to both academic and financial performance (25, p. 22). Such issues are organizational in nature.

There is a trend toward centralization in educational institutions that causes the decision-making process to become less academic in its orientation (8, p. 7). Such a refocusing of policy leads to concerns about (a) sacrificing quality for quantity, (b) a decrease in the traditional diversity in higher education that accompanies the closings of small and private schools, and (c) the development of an authority structure that would not be conducive to academic innovation and creativity (8, p. 131).

Nursing school administrators are confronted with additional, more specific pressures. Such pressures result from the requirements of state licensing agencies,
the national nursing voluntary accrediting agency, the profession's demand for an increased performance quality in new graduates, and the continuing shortage of nurses in the health care settings.

Educational institutions must respond to these internal and external pressures by providing organizational settings that will fulfill the educational mission. Duryea suggests that the organizations which were effective in the past will be inappropriate by the year 2000 (12, p. 37). Consequently, administrative decisions must reflect a comprehensive study and understanding of the organizational setting in which academic activities take place.

The responsibilities of higher education include the effective organization of the academic activities which lead to the accomplishment of purposes. Nursing schools are professionally oriented units of academic institutions that exist for the purpose of preparing individuals for the practice of nursing. Although all baccalaureate nursing schools have the same basic purpose, there are differences in their organizational characteristics (28). The financial control of nursing schools is both public and private; the schools are incorporated into institutions that vary from liberal arts colleges to multiuniversities; some nursing schools, which are headed by a dean, are autonomous, while others are departments or divisions within another academic unit of the institution.
The number of degree offerings also varies. It was reported for 1980 that there were 385 baccalaureate programs, 137 master's programs, and 22 doctoral programs (27, pp. 2, 79, 85). Schools offering baccalaureate and higher degrees vary in size of student enrollment, from fewer than 100 (391 schools) to over 400 (77 schools) (27, p. 8).

Nursing schools appear to differ in certain aspects from other academic units (5, p. 27). Nursing faculty members, all of whom are professionally oriented, usually have expertise in some specialty area of the profession. It has been said that nursing faculty members lack experience in the academic role, and that their educational credentials and academic rankings do not compare favorably with those of faculty in other professional schools (5, p. 7; 30, p. 28). Approximately 13 per cent of the baccalaureate program faculty hold an earned doctoral degree (27, p. 98). For 1980, there were 11,489 full- and part-time faculty in baccalaureate nursing programs, and 437 unfilled budgeted positions (27, p. 96). In addition, since approximately 50 per cent of nursing-program courses are clinical, greater strains are imposed upon limited faculty to maintain faculty-student ratio requirements (24).

Nursing schools that offer a baccalaureate degree are professional schools in a higher education setting.
Not only are they required to meet institutional standards, they must meet standards set by state law and registration board rules (28, p. iii). Approximately 83 per cent of the nursing schools that offer baccalaureate programs also are accredited by meeting the standards of the profession's voluntary accrediting agency (27, p. 12).

One measure of the extent to which these schools meet the various standards is their success rate on the licensing examination required for graduates. While it is recognized that the purpose of the examination is to assure the public of a minimum competency of the beginning nurse, the examination results also may be considered a reflection of the organizational quality of a school as viewed through its product (4, p. 26; 20, p. 164; 21, p. 107). It is in this latter context that examination results will be assessed for this study.

Surveys have been conducted for the purpose of rating higher education institutions and their various academic units, including, in some instances, nursing and other professional schools (3, 10, 14). While concern has been expressed regarding the validity of using peer judgment for rating schools, the surveys are considered to have some merit (3, p. 42; 17, p. 50). Basic criteria for institutional ratings included organizational characteristics in addition to performance of students and graduates (10, p. 44; 14, p. xi; 22, p. 21). The focus of
these surveys is on the quality of educational institutions, with recognition being given to the fact that the organizational setting is an aspect to be considered in the assessment of institutional quality.

The importance of understanding the organizational nature of nursing schools is acknowledged by the emphasis that is placed on the need for specific information in order to make decisions regarding future events. In addition, the way in which human resources are utilized is an important issue in effective and efficient administration (30, p. 267). A contingency theory (19, p. 208) suggests a way of understanding the differences in the academic units being examined in this study. On the basis of such a theory, the success rate of nursing school graduates on the licensure examination is a function of the interaction among the various internal and environmental elements of the organizational setting.

The significance of this study lies in the identification of those elements in the organizational setting of nursing schools that show a relationship to success in providing the public with needed, qualified health care personnel. Such empirical data should be of value to deans and directors who are involved in long-range planning and must make decisions regarding the optimum organizational setting for goal attainment.
Summary

Chapter I stated the problem and gave a theoretical framework for the study. The chapter presented purposes, the research questions, the background and significance, and defined terms pertinent to the study.

Chapter II provides a review of related literature. Chapter III states the methods and procedures followed in the study, including a description of the population and discussions of the variables, the research instrument, data collection, and the analysis and treatment of the data.

Chapter IV presents the data findings. Chapter V contains a summary of the findings, conclusions drawn from the findings, implications based upon the findings, and recommendations for further study.
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CHAPTER II

REVIEW OF RELATED LITERATURE

A review of research and other related literature pertinent to an analysis of the characteristics of organizational design is presented in Chapter II. The topics include theoretical background, organizational structure, decision making, other organizational characteristics, and organizational performance.

Theoretical Background

An understanding of the constant problems that face organizational administrators is the best basis through which to arrange groups within the organization, to assign organizational work efficiently, and to delegate responsibility appropriately. Through the years, numerous attempts have been made to provide answers to the many questions about organizational design. A review of the various theories regarding the nature of organizations reflects such efforts toward understanding organizations. These theories are categorized into the formal approach, the informal approach, the systems approach, and the contingency approach to organizational design.
The Formal Approach

Traditionally, there are two basic approaches to the design of organizations, formal and informal. The formal approach focuses on the structural aspects of organizations. Leading proponents of this school of thought are Fayol (30), Taylor (103), and Weber (108).

Taylor's (103, pp. 115-116) scientific management theory emphasizes that tasks should be performed according to the scientific method, rather than on the basis of worker judgment, for greater efficiency and productivity. There is specialization among the trades and division of work between management and the worker, with management having the greater responsibility for task performance. Fayol (30, pp. 19-41), who identifies the universal principles upon which design and management should be based, maintains that there is division of work at all levels in the organization as a part of the natural order, positional authority, and specialization according to the various objectives.

Weber (108, pp. 92-333) describes the rational, logical, ideal-type organization as a bureaucracy that is characterized by hierarchical levels, division of work according to specialization, impersonal positional authority, and standardization by written policies, rules, and procedures. According to Weber, this ideal-type organization is understandable and unambiguous. In general,
the formal approach to organizational design focuses upon hierarchical levels, division of work at all levels, the source of authority, and standardization.

The Informal Approach

The informal approach to the design and management of organizations focuses upon the human behavior aspects of an organization. According to this approach, the effective organization demonstrates concern for the feelings, attitudes, and motivation of the worker. Some of the major advocates of this approach are Argyris (4), Barnard (7), Likert (56), Mayo (61), McGregor (62), and Simon (98).

Mayo (61, p. 67) and his colleagues in the Hawthorne studies found that the quality of the work day, rather than the number of days themselves, is related to increased work output. According to McGregor's (62, pp. 47-48) Theory Y, the worker needs less control and is motivated by opportunities for creativity and self-fulfillment. Barnard (7, p. 82) sees the effective organization as one that is characterized by cooperation between management and the worker and a willingness to serve on the part of the worker.

Likert's (56, p. 100) System 4 (Participative Group) type of organizational design reflects the emphasis on worker compliance through motives of self-fulfillment,
security, and creativity, as well as economic incentives. Simon (p. xvii) also sees organizations as patterns of communication and relationships in groups of human beings. Argyris (4, pp. 143-151) emphasizes the significance of the interaction between the characteristics of the person and the characteristics of the organization. He suggests that the lack of congruence between the various characteristics leads to the unintended consequences of frustration and conflict. To him, the ideal organization is one based upon the open systems concept.

Other authors suggest that the formal approach to organizational design, which is without concern for the aspects of human behavior, leads to organizational dysfunction or unintended consequences. According to March and Simon (59, p. 35), under certain circumstances, individuals respond to hierarchical action in an unanticipated way, thus limiting the organization's ability to reach its goals. Merton (64, p. 199) perceives that following a set of rules tends to result in the rules becoming the end rather than the means. While Gibson (31, p. 275) says that Gouldner suggests that the consequence of bureaucratic rules is only a minimally accepted level of performance. According to Selznick (97, p. 257), the unanticipated effect of authority delegation is a greater force on the subunit goals rather than on the goals of the organization.
These two traditional approaches, when viewed as separate entities, are basically antagonistic and polarized at the extreme ends of a continuum. The rational approach emphasizes predictable behavior, and the human relations approach is primarily concerned with the unpredictable human aspects of behavior. Neither incorporates as a major consideration the environment that is external to the organization, although the human relations writers do recognize a relationship between environment and organizational function (3, p. 149; 7, p. 165; 82, p. xxxviii).

The Systems Approach

General systems theory provides a broader perspective for understanding organizational design and management. It incorporates both the internal and environmental aspect of organizations. Early supporters of this perspective include Hall (34), Katz and Kahn (52), and Thompson (105).

Katz and Kahn (52, p. 111) view organizations as social systems, open to and in continuous interaction with the environment. They describe the organization as being dependent upon the environment for input, which includes personal feelings and attitudes. Since this input or energy is not constant, there is an unpredictable aspect to the organization's relationship with its
environment. Integration and control are viewed as mechanisms for adjustment to the environment (52, p. 26).

Thompson (105, pp. 6-9) views organizations as consistent with both the open-system and the closed-system concepts. He perceives the environment as an influencing factor, but he also sees performance and deliberate decisions as important concerns. According to Thompson, organizations attempt to be rational and exert control over both internal and external forces, but they never completely attain a closed rational system.

Hall (34, pp. 53-60) suggests that organizations are being forced to move away from the rational model in order to buffer themselves from environmental influences, to anticipate those influences against which they could not buffer, and to ration resources when the environmental influences cannot be controlled. The extent to which the organizations attain a closed system depends upon the various influences and the organization's ability to control them.

The Contingency Approach

A more current approach to organizational design is the contingency theory, which may be considered as a mechanism for implementing the systems approach (17, p. 106) and as an approach that incorporates both of the traditional ones (55, p. 184). In general, the contingency
theory holds that organizational design varies according to situational characteristics (17, p. 106); there is no one universal organizational design. The performance of an organization is a function of the goodness of fit between the internal characteristics and the environmental variables (55, p. 209).

Several situational conditions have been examined within the contingency perspective. Lawrence and Lorsch (55, pp. 187-208) identify from the literature three types of factors that they perceive as contingents which influence organizational design. The first type contains task and environmental variables, which include rates of change in markets and scientific techniques, production technology, the availability of resources, and the types of communication networks. Second are the organizational differences, which they perceive as contingencies, that have an impact on the choice between two conflict resolution strategies. Finally, studies that use human predispositions as situational characteristics are viewed as lending support to their conclusion that there are no universal answers.

Additional situational variables have been examined in recent contingency studies. Lorsch and his colleagues conclude that organizations should be designed to fit not only the specific task and the motivation of the members (66, p. 62), but also the manager's perception of the
nature of the task and its demand upon the organization (107, p. 245).

Langdale (53, p. 200) indicates that organizations tend to be either "bureaucratic or human relations in their nature" according to particular goals, tasks, organizational members, and stress. According to Harrison (36, p. 128), organizations should be designed to fit the organizational ideology which is dependent upon the environmental characteristics for viability.

Scott (95, p. 252) emphasizes that the management model must change as value shifts occur in changing circumstances. He suggests that as the environment changes in regard to resources, expectations, and confidence, so do the value systems change. Consequently, the operational premises of management also must change. Child (19, p. 17) believes that organizations are designed to fit the contingent circumstances of environmental variability, size, and technology.

There are those who hold the view that the contingency theory, in its present status, does not provide all the answers for organizational design. On the basis of their study of the same organizations that were studied by Lawrence and Lorsch (55), Tosi and his colleagues (106, p. 31) question the method used by Lawrence and Lorsch for measuring environmental uncertainty. Pennings (75, p. 393) challenges the use of the structural-contingency
model in explaining organizational effectiveness. In his study of the influence of the consistency between the environment and structure on organizational effectiveness, he found that only two of ten environmental characteristics seem to explain the structural variables. In addition, he found little influence of the goodness-of-fit between the environmental and structural variables on organizational effectiveness (75, pp. 403-405).

Mealiea and Lee (63, pp. 335-343) indicate that the existing contingency theories are inadequate because a comprehensive model has not been developed that includes both behavioral and environmental aspects. They suggest that organizations should be designed not only to match the demands of the environment, but also to match the worker.

Organizational Structure

A major component of the internal aspect of an organization is its formal or structural nature. Structure may be viewed as the differentiation of the organization into subunits that provide for the various organizational tasks as well as the authority and communication patterns (51, p. 110). Structure is a vehicle for "bounded rationality" or the response to various situational contingencies (105, p. 66); it is a mechanism for resource allocation and decision making (21, p. 9). The complexity of an organization is
reflected in the extent to which it is differentiated (15, p. vii).

The examination of organizational structure tends to follow along the bureaucratic lines of vertical and horizontal differentiation. In the bureaucratic model, vertical or hierarchical differentiation reflects control, while horizontal differentiation (or division of labor) reflects the functional aspect of the organization (108, p. 333). Vertical differentiation is the managerial structure of the organization (20, p. 50), which is pyramid in shape with the base reflecting the span of control (51, p. 79); in addition, the shape of the pyramid is the core of the structure of the organization (13, p. 27). Horizontal differentiation is the subdivision of the organization into units that carry out the work of the organization (34, p. 132). Task, function, location, and product are the bases for horizontal differentiation (20, p. 72).

The organization structures of various social systems have some characteristics that are similar and others that are different. Included in this section is a review of representative works on organizational structure in business and industry, higher education, and nursing education.

Organizational Structure in Business and Industry

Various investigators of organizational structure in business and industry have examined the bureaucratic nature
of organizations. Some focus their studies on the inter-relationships among the bureaucratic attributes of organizations, while others emphasize the investigation of the multidimensional nature of organizational structure. Still other studies focus on the structural determinants of organizations.

The bureaucratic attributes of structure.—Certain investigators suggest that organizations vary in their bureaucratic nature. Hall (35, pp. 303-307) examined the structure of ten organizations, five profit-making and five governmental, on six bureaucratic dimensions of structure. Upon the basis of his findings, he concludes that departments which handle non-routine tasks are less bureaucratic than those which handle routine tasks in the dimensions of hierarchy of authority, division of labor, and the presence of external procedural qualifications. Hall also concludes that the executive levels in the hierarchy are less bureaucratic than the non-executive levels in the dimensions of hierarchy, division of labor, procedures, and impersonality. In general, the author suggests that there are differences in the degree of bureaucratization.

According to Hage (33, pp. 297-310), there are eight means and ends variables that are characteristics of formal organizations. In a theoretical examination of the
relationships among the variables, he suggests that his axiomatic theory is useful for predicting two ideal-type organizations—the production-oriented and the adaptiveness-oriented. However, he indicates that most organizations are actually somewhere between the two types.

Blau and Schoenherr (13, p. 325) examined fifty-three public personnel agencies and their various divisions and local units to determine the relationships between their structural elements as well as the influence on the elements of other variables, particularly size. Although the focus of the study was on structural differentiation and the influence of size on the organizational characteristics, other bureaucratic variables (formalization, decentralization, standardization, and the administrative component) were also examined (13, p. 170).

Blau and Schoenherr found variations among the agencies studied regarding size and regional characteristics (13, p. 168). They also found variations in the influence of size on the structural characteristics (13, p. 57) and in terms of the internal characteristics and their interrelationships (13, pp. 170-172). Upon the basis of their findings, Blau and Schoenherr formulated several conclusions. The internal influences on organizational characteristics predominate over the external ones (13, p. 166); organizational size is the variable with the broadest scope of influence over the other characteristics (13, p. 202); the
various organizational characteristics are interdependent (13, p. 170).

The multidimensional nature of structure.—The unidimensional or Weberian version of organizational structure suggests that an increase in the degree of the various structural components means an increase in bureaucratization (84, p. 462). However, Reimann states that some investigators challenge this view on the basis of empirical findings which suggest that organizational structure has more than one independent basic dimension (84, p. 462).

Pugh and others (82, pp. 66-89) in their Aston studies of British work organizations, examined structural differentiation across diverse organizations. Using structural dimensions from Weberian-oriented literature, they identified four mutually independent structural dimensions. Upon the basis of their findings, they conclude that bureaucracy is not unitary and therefore not an organization type. According to these researchers, bureaucracy is a variable that is multidimensional in nature, and an organization's structure may vary along any of four empirical dimensions.

From these studies, Pugh and others suggest that there are several bureaucratic profiles which may be used to describe a given organizational structure (80, p. 115). Using the independent dimensions that they identify, they
developed profiles of various combinations of variables and examined the studied organizations in terms of the profiles and certain contextual variables (80, p. 115). Upon the basis of their findings, the authors conclude that bureaucracy takes on different forms in different settings (80, p. 125).

Replications of the original Aston study resulted in similar findings that support a multidimensional approach to organizational analysis. Inkston and others (45, p. 322) examined two dimensions, structuring of activities and concentration of authority, and found that the extent to which they varied among the forty different organizations was related to the environment. Hinings and Lee (41, pp. 87-90) examined the same two major groups of variables in a study of nine manufacturing firms, and they conclude that their findings support those of the original Aston study, which indicates that the bureaucratic type of structure is not unitary and that there is a relationship between structure and organizational environment.

In his replication of the Aston study, Child (21) questioned the findings of the Aston group regarding the multidimensional structure of organizations. Upon the basis of his findings in the examination of eighty-two British work organizations, he concludes that although the structural profiles identified are similar to those of Pugh and his associates, his findings are supportive of
Weber's concept of the unitary nature of organizational structure. He further concludes that his findings do not support either the Aston taxonomy or the wholesale rejection by other investigators of Weber's analysis of bureaucracy (21, pp. 172-176).

Other works are supportive of the multidimensional concept for describing and comparing organizations. According to Reimann (84, p. 463), the use of the multidimensional approach is necessary in a general sense, as compared to describing a particular organization in a specific environment. Upon the basis of his findings in a study of nineteen American manufacturing firms, he indicates that organizations may be classified on the basis of their positions in the structure space, and that the structure space has several independent dimensions, each related to a different aspect of the organization's environment. Reimann concludes that his findings confirm those of the Aston group concerning the multidimensional nature of organizations. In addition, he suggests that the results of his study extend those of the Aston group by indicating that the number of dimensions that are necessary to describe a bureaucratic structure may be a function of the organization's environment (84, pp. 470-474).

Samuel and Mannheim (92) support the multidimensional approach in their study of thirty industrial plants in Israel. Upon the basis of their analysis of structural
and contextual variables, they describe six bureaucratic profiles. They emphasize that no one profile is highly bureaucratic in all structural areas and suggest that the ideal-type construct of bureaucracy is unsuccessful for comparative studies (92, p. 216).

**Determinants of organizational structure.**—Certain factors, some broader in scope than others, are said to be influential in determining the way in which organizations are structurally differentiated. According to Kast and Rosenweig (51, p. 180), organizations most often are differentiated by function, with the advantage of grouping by specialization but with the disadvantage of coordination problems. Thompson (105, p. 57) sees the location and interdependence of departments as priorities for differentiation. He believes that the cost of coordination, which increases with complexity, must be considered. According to Thompson, cost is minimized with small homogenous local groups.

Child (20, p. 53) sees managerial choice as a major factor in organizational structuring. He indicates that as organizations grow, there is an attempt to hold down managerial levels, with the consequence of an increased span of control. According to Child, there are implications for managerial decisions with the use of a widened span of control, and there must be a strategic choice
between a tall, narrow structure and a short, wide one.

In their study of the formal structure of the public employment agencies, Blau and Schoenherr (13, p. 57) found that large agencies are more differentiated, have more people in the subunits, and have more formalized personnel procedures. In addition, salaries are larger in the large agencies, and automation is used. Upon the basis of the findings, the authors conclude that size is the most important condition affecting structure.

In his study of the internal structure of public personnel agencies, Blau (10, p. 233) also notes a relationship between structure and professionalism. He found that this type of agency with its professional staff tends to have a high managerial ratio. His interpretation is that the high ratio provides greater opportunity for frequent communication in both directions.

In a search for variables that could be predictors of structure, Child (22, p. 185) developed a model of organizational structure based upon the relationships among the concepts of organizational context, complexity, and bureaucratic control. Using the model, he compared the findings of five different studies in relation to the bureaucratic nature of organizational structure (22, p. 169).

Upon the basis of his findings, Child concludes that large complex organizations are bureaucratic, that
complexity and other variables are not necessarily more significant than size, and that it has not been demonstrated that size, in itself, is the major determinant of bureaucratic control. He suggests also that specialization and employee expertise are important intervening variables between an organization's context and its formalization. In general, Child concludes that the term structure is "too gross and indiscriminant," and that the characteristics used in the studies examined could have masked other variations in the organizations' control measures (22, p. 183-185).

Pugh and others state that "the structure of an organization is closely related to the context within which it functions, and much of the variation in organizational structures might be explained by contextual factors" (81, p. 91). On the basis of their findings in the examination of the fifty-two work organizations, the authors conclude that size, technology, dependence, and location are critical factors in the prediction of the two major dimensions of organizations (81, p. 110).

Inkson and his colleagues (46, p. 361) examined national culture as well as size, technology, and dependence in a comparison of British and American manufacturing organizations. They indicate that the findings support their conclusion that differences in organizations are
due more to variation in the contextual variables of size, technology, and dependence than to national origin.

In a study on levels and rates of change in sixteen social service organizations, Dewar and Hage (25, p. 131) examined size and technology for their relationship to complexity and structural differentiation. Upon the basis of their findings, they conclude that while size is a key contextual variable, technology (defined as changes in task scope) is the major determinant for differentiation.

Beyer and Trice (9, pp. 48-62) examined the relationship of size and technology to complexity to determine if their findings were the same as those of Blau and Schoenherr (13). They found differences between the two sets of findings in relation to size, but there are significant patterns between the two sets of findings in relation to technology. On the basis of their findings, the authors conclude that the interrelations of size and complexity are more complicated than previously suggested. They suggest that a search for a primary cause of organizational complexity is no longer appropriate and that attention needs to be focused on a strategic approach to deal with the various situational constraints which are occurring (9).

Organizational Structure in
Higher Education

The system of higher education in the United States is large, complex, and carried out by formal organizations
(11, p. vii). However, its purposes and activities are different from those of other work organizations, which suggests that the structural characteristics also may be different. The literature to be reviewed in this section relates to the bureaucratic aspects of higher education institutions, the multidimensional nature of their structure, and the institutional organization as a loosely coupled system.

The bureaucratic aspects of higher education institutions.—Blau (11, p. 2) describes the structure of higher education institutions as increasing in bureaucratization, and with respect to the growth in recent years of American universities and colleges. Blau suggests that there is a need for increased bureaucratization in order to organize and coordinate the activities of the many people who are working toward a common purpose. He points out that bureaucracy is characterized by rigidity and discipline, while scholarship requires flexibility and imagination in teaching and freedom and creativity in the pursuit of knowledge. Thus, the way in which academic institutions are able to cope with the incompatibility between bureaucracy and scholarship is an important consideration.

Institutions of higher education are described as being structurally differentiated into diverse departments that are further differentiated according to the various
specialties (5, p. 147; 11, p. 250). The administrative hierarchy in academic institutions is perceived as being different from that in a typical work organization, except at the senior administrator level. The faculty are at the operational or bottom level, and the chairmen, deans and other administrators, vice-presidents, and president follow upward in order. In addition, the major line functions are teaching and research, as performed by the specialists on the faculty, while the supportive staff services are performed by administrators (11, pp. 48-49).

In an investigation of the administrative structure of 115 American colleges and universities, Blau (11, pp. 49-59) sought to determine whether or not the structure is basically homologous to that of other types of organizations. He notes that academic institutions are differentiated into administrative levels, schools, colleges, and departments, and he suggests that these measures of differentiation are comparable to measures of vertical differentiation, horizontal differentiation, and division of labor in other organizations. Using these measures, he examined the administrative structure of the academic institutions and found variations in the degree of differentiation as well as certain interrelationships among the structural variables.

According to Blau, the president's span of control is inversely related to the number of hierarchical levels.
There is a relationship between the vertical levels and the horizontal subdivisions, if administrative units are included. Finally, there is a relationship between the administrative use of technology and vertical differentiation. Upon the basis of his findings, Blau concludes that the complex responsibilities of universities are reflected in a complex structure that is more differentiated along all three lines examined than that of colleges, and these effects are parallel to, though independent of, those of large size (11, p. 57).

The author also concludes that the findings on colleges and universities are homologous to the previous research on employment security agencies (11, pp. 57-65).

The multidimensional approach.--Although educational institutions are said to be different in their structure from the typical organization, there is evidence that they also may be viewed as multidimensional in nature. Holdaway and others (44, p. 37) view the ideal-type unidimensional structure as a "conceptualized construct of utopia" rather than a description of the empirical world. Using a multidimensional approach, they examined the structure of twenty-three Canadian postsecondary educational institutions that represent four types of public service organizations. In their examination, Holdaway and his group used the variables that are identified by the Aston group as measurements of the structural dimensions of structuring of activities, concentration of authority, and line control.
of workflow (44, p. 41). In addition, they added the variable of centralization.

Holdaway and his colleagues found wide variations among the institutions in the structural variable scores. They also noted certain prominent characteristics of the educational institutions, such as wide spans of the chief executives and narrow subordinate ratios. In addition, they noted that formalization, role specialization, recording of performance, standardization, autonomy, and specialization form a relatively tight cluster. Certain other relationships were seen among the various structural variables. From a factor analysis, they identify the major structural dimensions as bureaucratic control and administrative configuration (44, pp. 45-53).

Upon the basis of their findings, Holdaway and others conclude that the two major structural dimensions differ from the major components found in the Aston study. According to them, educational organizations are capable of wide variations on both characteristics, and one is not necessarily dependent on or an alternative to the other (44, p. 53).

The Holdaway group also suggest that in any one sector organizations have a limited number of main structural components, and that these components differ from one sector to another. In addition, in the business sector, organizations may have alternatively structured
activities or concentrated authority, while in the education sector, institutions may have either alternately increased bureaucratic control, or increased administrative hierarchy, or both, or neither (44, p. 53).

Heron and Friesen (40, pp. 337-339) examined the multidimensional nature of the organizational structure of five community colleges on the basis of the ten bureaucratic variables identified by the Aston group. Using a factor analysis, they identified three structural dimensions and inferred mechanisms for the control of employees by the college organization.

According to Heron and Friesen (40, pp. 338-339), the college that scores high on factor one controls its employees through specific task requirements, impersonal reporting arrangements, and formal mechanisms for processing personnel. The college that scores low on factor two controls its employees through a concentration of decision-making at the upper levels of administration, while the college that scores high on factor three controls through closely reporting relationships and small spans of control. On the basis of their findings, Heron and Friesen conclude that the structure of colleges is three-dimensional in nature. In addition, organizational control over employee behavior is expressed in at least three ways at the same time.
Educational institutions as loosely coupled systems.—Weick (109, p. 12) describes the structure of educational organizations as a loosely coupled system. He perceives the shape of the organizational structure as determined by the nature of the task, which in educational institutions is considered to be diffuse with uncertain technology. On the basis of this viewpoint, he questions whether or not one of several organizational forms might suffice in educational institutions or whether a specific form, a diffuse type, might be the appropriate one. He indicates that educational institutions have form and that most forms appear identical, in contrast to what is expected when tasks are diffuse. He suggests that loose coupling might exist in educational institutions to explain the fact that such organizations do not accomplish their work by heavily rationalized practices (109, p. 1).

According to Weick (109, pp. 1-2), organizations rarely go about doing what they do through completely rational practices. They have many elements that are loosely connected and yet retain "recognizable and nameable" characteristics. Such loose couplings may be weak in effect, infrequent, unimportant, slow to respond, impermanent, dissolvable, and tacit.

Weick (109, pp. 3-16) describes coupling on the basis of the activity of the variables that are shared by the systems involved. Systems that share few or weak variables
are independent of each other, and the variables are considered loosely coupled elements. In addition, these elements or building blocks could be added to or removed from the organization with little disturbance to it or to the elements themselves. The author suggests that the typical organizational coupling mechanisms of authority of office and logic of the task are not operational in educational systems, although this view should be validated by research.

Organizational Structure in Nursing Education

Only a few research reports on the nature of the organizational structure of nursing education units in higher education were found in the literature review. The studies, which are varied in nature, are comprehensive examinations of the nature and scope of nursing and of nursing education at the institutional level at critical times in nursing history, or are more specific investigations of the structural patterns of nursing education at the unit and institutional levels.

Organizational patterns at the institutional level.—A nationwide survey was done by Brown to study the problem of "who should organize, administer, and finance professional schools of nursing" (14, p. 10). While the data and conclusions in this study focus on the nursing school
as a unit in a college or university, there is implied reference to the school and its organizational nature in relation to some bureaucratic characteristics such as a hierarchical arrangement, formalization, and standardization.

According to Brown (14, p. 138), there is general agreement that the teaching of professional nursing belongs within institutions of higher education. She examines the characteristics of professional nursing schools in terms of organizational structure, facilities, faculty, and financial structure. The investigator found that the structure is, commonly, one of two forms—either an independent administrative unit on a parity with other professional schools in the institution or a separate department or school within the college of liberal arts, medical college, or other division. Upon the basis of her findings and conclusions, Brown recommends that nursing school administrators seek academic and clinical facilities comparable to those provided for the other professional schools within the parent institution, and that formalized arrangements for clinical facilities be made through written contracts (14, pp. 151-159).

Brown investigated faculty characteristics of the surveyed schools in terms of faculty organization, competence and qualifications, number, academic status, and teaching load. Her findings indicate that there is a lack
of qualified faculty in the various schools. However, no data were reported regarding academic status or teaching load. Upon the basis of her findings, Brown made recommendations regarding standards to be followed for faculty appointments, status, qualifications, and teaching and administrative load in professional schools (14, pp. 159-163).

In an early study of the organizational patterns in sixteen collegiate schools of nursing, Thielbar (104, p. 53) sought to determine desirable patterns in the organization and administrative relationships of the schools. According to the author, desirable patterns are those that are (a) deemed so by individuals associated with the schools, (b) in consonance with generally accepted administrative organization principles, and (c) meeting criteria relating to faculty competence, differentiated curricula for students of different backgrounds, protection of students from nursing service demands, and use of evaluation devices.

Thielbar (104, pp. 56-77) examined organizational patterns according to the relationships of the nursing school to the college or university and to the associated hospital and the boards of control for both the university and the hospital. According to the investigator, the findings show that the organizational pattern types are generally either primary autonomous units or subordinate
ones within the college or university structure. The subordinate type is a department in a medical school or a school of education. In a primary type, the dean reports to the college or university president, while in the subordinate ones, the administrative head normally reports to the academic head of the school. The two types of schools show differences in the findings regarding desirability in relation to the various criteria. In some instances, there is a lack of consonance with the administration principles of homogeneity, line of command, and span of control. There are fewer primary units whose students receive classes and experience with students from different types of programs. The hospitals whose control is different from that of the nursing school tend to provide more staff in the practice setting, and the primary units use different evaluation devices than the subordinate units.

Upon the basis of the findings, Thielbar (104, p. 77) concludes that although there is no single organizational pattern associated with excellence, those schools which are primary units appear to have advantages over those which are subordinate units. In addition, those schools which are under different control from that of the hospital also appear to have advantages.

Lysaught (68, pp. 14-101) directed a nationwide study which sought to investigate nursing and nursing education as a means of determining current practices and future
needs. In the area of nursing education, the study group examined institutional patterns and problems and current trends.

The Lysaught group (68, pp. 102-107) found that over the fifteen-year period of the study, there had been a steady move of nursing programs into the collegiate setting. The findings also show that (a) there is little disagreement that the future institutional pattern for nursing education is collegiate in nature, (b) the students have more positive perceptions about the collegiate environment, and (c) the baccalaureate students score higher on the registered professional nursing examination. Upon the basis of these findings, the investigators conclude that the collegiate setting is the appropriate one for nursing schools.

In the Lysaught group's (68, p. 110) study, there was no investigation of internal structure beyond the determination of the institutional problems perceived by the administrative heads. In general, they found that the problems center around lack of faculty, funds, and educational facilities, with size and ownership considered as influencing factors.

Organization at the unit level.---Hegarty (37, pp. 218-219) studied certain organizational and sociological
factors of sixty collegiate schools of nursing to investigate attrition-related problems within the nursing schools. The organizational variables include age of the school, integration into the university through various courses, and screening devices.

Hegarty (37, pp. 218-220) found that eighteen of the schools are over twenty years old. Some of the schools use one screening device, while others use two or more. In addition, two-thirds of the schools' nursing students almost never share courses with non-nursing students and the schools vary in the activities that aim to socialize their students into the profession of nursing. The mean attrition rate of the study's schools is 28 per cent, which was lower than the national average. Hegarty concludes that old nursing schools and schools that use more than two screening devices have lower attrition rates. Certain socialization factors also appear to influence the attrition rate.

Griffith (32, pp. 57-59) examined the organizational patterns of five baccalaureate nursing programs in order to identify the organizational process and recurrent patterns. Three of the schools were in a university setting and two were in a college setting. Griffith's findings show that there are similarities and differences among the programs. The deans have similar educational backgrounds and length of time in the position. The educational preparation of
the faculties varies from baccalaureate to doctoral degrees. The program goals are similar regarding students, but they vary in regard to community service, research, teaching, and faculty competence. The deans perceive their role in a similar way and indicate that the majority of decisions are made by a committee. The standards for faculty appointments vary but are consistent with those of the parent institution. It appears that the institutional environment moderately influences the organizational patterns.

On the basis of the findings, Griffith (32, pp. 59-60) concludes that the nursing programs are characterized by variations in their program goals, the network of relations, the decision-making process, the reward system, and institutional environment. The goals are broader in scope in large universities. The faculty advancement standards generally are more demanding in the university programs wherein the faculty also is more likely to participate in professional activities and to serve on universities committees. In addition, on the basis of the higher supervisor ratings of the graduates of the university programs, the author concludes that the organizational pattern of baccalaureate nursing programs "influences the competency level of their graduates in the employment setting" (32, p. 60).
The Organizational Decision-Making Process

Decision-making is a basic organizational process, but seldom are all types of organizational decisions made by one person (31, p. 341). This section is concerned with the decision structure of organizations under the topics of authority structure, decentralization, and member participation.

Authority Structure

According to Kast and Rosenweig (5, pp. 310-314), the authority structure is that aspect of organizational structure which serves as a basis for the assignment of tasks and the development of control mechanism. Authority and power are the underlying components of the influence system of an organization. Influence is an interpersonal transaction with psychological or behavioral effects, and control is a successful influence attempt. In addition, power is the ability to influence, and authority is power legitimized by role and position in the organization's social structure.

Carlisle (17, p. 361) describes influence as a continuum of control ranging from little and moderate control, or influence, to major control, or power. Child (21, p. 163) views the office-held authority of bureaucracy as a strategy of control which indicates that the locus of
decision-making authority is decentralized to those holding official roles.

Blau and Schoenherr (13, pp. 137-138) state that delegation of responsibilities to reduce organizational uncertainty should not be equated with loss of power. In their analysis of employment security agencies, they found that division heads in large agencies have more administrative responsibilities than do those in small agencies, and that such responsibilities are probably more important. Also, the authors found that those conditions which tend to lead to delegation of responsibilities also tend to strengthen the exercise of control by top executives.

According to Blau and Schoenherr (13, p. 138), new forms of power are emerging in today's organizations, and their source is the impersonal control mechanisms. The authors suggest that such forms of power are more compatible with democratic values, but that "they are probably less easy to restrain" than the older, more personal control mechanisms (13, p. 139).

Authority structure in professional organizations.—There is a trend in Western Society toward increasing professionalism of the work force (34, p. 143; 54, p. 149). It has been suggested that the authority structure differs in its bureaucratic nature in organizations which employ professionals who have highly trained skills and who
identify with their skill rather than the organizations that employ them (91, p. 13).

According to Etzioni (28, p. 45), the authority structure in private business firms differs from that in professional organizations (28, p. 45). In business firms, managers hold line positions and experts hold staff positions. The managers are the integrators of the system, have a broad knowledge base, and are committed to the organization and its goals. On the other hand, the experts create knowledge, are more temperamentally, have a more restricted knowledge base, and tend to have a greater commitment to their profession than to the organization.

Etzioni (28, pp. 51-52) sees the profit making goals as consistent with the bureaucratic orientation of management, and the creation and dissemination of knowledge goals of a professional organization as non-bureaucratic in orientation. In the professional organization, the line-staff authority is reversed, with the expert or professional carrying out the major organizational activities and the manager providing the means. The expert is the one who makes the major decisions and who is more likely to reach the top position.

On the basis of his comparison of the authority structure of the two types of organizations, Etzioni (28, pp. 61-66) concludes that the professional organization actually has two types of authority structure, and only the non-
professional organization is structured along bureaucratic lines. Although the professionals are responsible for the major goal activities, they do not have a clear-cut authority structure. In addition, Etzioni suggests that whether the authority structure will be more bureaucratic or more professional in nature depends on the organization's goal structure, the extent of functional internalization, the number of different professions in the one organization, and the type of ownership.

Sorensen and Sorensen (100, pp. 98-102) examined the authority structure in public accounting firms and identified two factors as having an influence on the authority structure of an organization—the source of authority and the direction of loyalty in the professionals who work in the organization. Based on their findings, these authors conclude that the professionals in the higher levels in the hierarchy are more bureaucratic in their orientation.

Sorensen and Sorensen (100, p. 105) further conclude that the public accountant is the type of professional who works in a combined bureaucratic and professionalized setting (100, p. 105). The professional who experiences conflict and professional deprivation tends to migrate as a result of dissatisfaction. These authors suggest that the professional's concepts are challenged in this type of setting and are transformed by its bureaucratic nature.
Hall (34, pp. 147-160) differentiates professional organizations, on the basis of the extent of the professionalization, as autonomous, heteronomous, and professional department. He concludes that the more professional groups tend to be found in the lesser bureaucratic settings. Hall suggests that the more established professional groups do not need the same organizational controls as do aspiring ones, although at the same time the more bureaucratized systems of the less professionalized groups may inhibit further professionalization.

Authority structure in institutions of higher education.—Colleges and universities, which employ a large number of professionals, the faculty, also may be viewed as having a combined authority structure. According to Blau (11, p. 186), either the bureaucratic model (administrative authority) or the professional one (faculty authority) may be used to examine institutions of higher education. Academicians are compared to professionals in their claims for professional autonomy and self-regulation (11, p. 159). He also suggests that there is a likelihood for conflict because of the overlapping jurisdictions of the faculty and administration.

On the basis of his findings in a study of academic organizations, Blau (11, pp. 164-177) concludes that institutions in which the administration has jurisdiction
over educational policies are characterized by a high administrative-faculty ratio, low reputation, and weak faculty government. Blau also concluded that faculty authority in regard to personnel selection is stronger in affluent institutions and those that have higher clerical personnel-faculty ratios. On the other hand, faculty has weaker power in institutions characterized by inbreeding, emphasis on teaching, and less than superior faculty qualifications.

Decentralization

Decentralization is referred to as the organizational condition that indicates the degree to which authority has been delegated to the lower levels through the vehicle of the chain of command (17, p. 345). Blau and Schoenherr (13, p. 174) perceive decentralization as a major organizational characteristic, while Child (21, p. 174) sees it as an attribute subsumed under the independent dimension of administrative control. Still others suggest that it is a major independent dimension of organizational structure (41, p. 83; 82, p. 65).

According to Lawrence and Lorsch (55, p. 157), decentralization reflects the level in the hierarchical structure away from the top where the major organizational decisions are made, on the basis of the location of the necessary knowledge about the environment. Burns and
Stalker (15, p. 121) note the relationship between decentralization and the organic form of organizational structure. Lippitt (57, p. 109) supports this view by associating decentralization with the democratic form of organizational structure.

Carlisle (17, p. 396) suggests that while there are situations in which decentralization is the better approach, there also are others in which centralization is more appropriate. Decentralization is advantageous, Carlisle says, in situations where the top executive is overloaded with operational decisions and there is a need for rapid decision-making, particularly on issues where the individual at the level of concern had the needed knowledge.

Research findings demonstrate a number of correlates of decentralization, including both internal organizational characteristics and external environmental ones. In addition, the importance of the interaction of the various organizational variables is emphasized. These interactions are described as influencing the extent of decentralization in organizations and as determining the types of situations in which decentralization appears to be an appropriate condition for decision making (17, p. 393). Also included in organizational analysis are the relationships between decentralization and effectiveness.
Decentralization and environment stability in effective organizations.--Research shows that the effective organization is one which tends to decentralize in response to the environmental conditions. Burns and Stalker (15, pp. 97-121) see the rates of technical market change as extrinsic or environmental factors that influence the management system of effective organizations. They believe that the organic system is appropriate in an unstable condition since it is characterized by a center of authority which is located where the knowledge is to be found about the nature of the task at hand.

In Woodward's (110, pp. 50-69) study of 100 organizations that were classified according to production technology, it was found that those firms with the more advanced process technology tend to be more decentralized. She concludes that those organizations with process technology tend to have a slightly greater chance for success.

Lawrence and Lorsch (55, p. 31) found that the organizational departments studied in their examination of ten organizations tend to differ structurally in relation to the certainty or stability of the environment. The high performance organizations in uncertain environments achieve the required degree of integration by the use of integrators at the lower levels in the hierarchy where the required knowledge and expertise are located. Thus, they conclude that differentiation in the high performing organizations
is based upon environmental demands, and that the data regarding the location of integration activities support their prediction regarding structure and performance (55, p. 104).

Negandhi and Reimann (70, pp. 209-210) note a positive relationship between decentralization and effectiveness in a stable environment. From their findings they conclude that organizations which show greater concern for task environmental agents, reflecting a long-term perspective, are likely to have fewer layers in the structure and a consultative type decision-making process.

In his examination of the structure space of manufacturing firms, Reimann (83, p. 706) found that the higher performing firms can be decentralized, regardless of whether or not they also can be specialized or formalized. Reimann concludes that organizations differ in the extent of their bureaucratization.

Pennings (74, p. 695) examined the structure and environment of branch offices of a brokerage firm and found that where organizational influence is dispersed, there is a tendency for the office to be high on organizational effectiveness measures. Pennings concludes that the more effective organization is decentralized as well as participative and autonomous.
Decentralization and other structural variables.—The relationships between various other organizational characteristics and decentralization have been examined. The Aston group (81, p. 98) found an inverse relationship between size and centralization. In addition, the findings show a negative relationship between specialization, standardization, and formalization and centralization. These investigators conclude that bureaucracy cannot be unitary, since an organization with specialist offices and associated routines is decentralized.

Hinings and Lee (41, p. 90) found a similar relationship between size and centralization, and they conclude that as the organization becomes larger, it decentralizes authority. In addition, they conclude that larger organizations are likely to be more bureaucratic.

Blau and Schoenherr (13, pp. 113-129) examined the effects of various organizational conditions in employment security agencies on decentralization, particularly the influence of formalization, standardization, and automation. Organizational risks can be reduced, they believe, by decentralization under conditions of automation, formalization of procedures, and the qualifications of the interviewing personnel. They view size as having complex patterns of effect on decentralization, and they see little likelihood that there will be delegation to middle managers for the important decisions in large institutions unless
automation or formalization of procedures are present also. Blau and Schoenherr conclude that the number of levels in the hierarchy and the size of the administrative staff are interdependent with organizational size in their influence on decentralization.

Decentralization in institutions of higher education.—Colleges and universities are said to differ from other organizations, not only in their various structural attributes, but also in the decentralization of decision-making (91, p. 97). Heron and Friesen (43, pp. 335-344), suggest that the organizational characteristics of colleges may be described as a combination of decentralized, open-climate and centralized, closed-climate attributes. These authors indicate that at any given time, the colleges may be more like one set of the attributes than the other. In their examination of community colleges over a period of time, they found that as the organizations progress through their various growth states, they tend to have greater dispersion of authority. The authors conclude that as colleges grow older, they become more decentralized and more autonomous of their boards of governors. Heron and Friesen perceive this finding as suggestive of bureaucratization.

According to Blau (11, pp. 185-188), the basic power in major universities is exercised by the board and central administration even though there is decentralization of
authority to the faculty for academic affairs. In his examination of the relationship between organizational variables and decentralization in colleges and universities, Blau found that the institutions vary between the bureaucratic and the professional models. In some institutions, the authority over academic affairs is centralized at the top, and in others the authority over faculty and educational matters is decentralized to the faculty.

Blau (11, p. 185) found size to be a major influence on decentralization. In addition, multilevel hierarchy, large clerical apparatus, and high administrative succession appear to promote decentralization. Blau suggests that centralization in academic institutions is encouraged by paternalistic trustees and top administrators, not impersonal bureaucrats.

Blau's (11, p. 188) findings regarding decentralization in academic institutions are contrary to his findings regarding decentralization in government agencies. In government agencies, the bureaucratic procedures of formalization and standardization, as well as the use of computers and the qualifications of employees, tend to promote decentralization. In academic institutions, on the other hand, standardization, regulation, and mechanical teaching aids do not affect the distribution of authority, while the use of computers increases centralization.
Blau (11, p. 188) perceives decentralization in non-academic institutions as being dependent upon conditions that promote reliable performance; in academic institutions, decentralization is perceived as being dependent upon size and the academic standing of both the faculty and the institution. Standing or reputation is reflective of the power acquired in the social exchange with superior faculty, and according to Blau, authority over appointments and educational matters is decentralized to the faculty in the major universities that have faculty with superior qualifications.

Ross (89, p. 105) examined colleges and universities for the relationships between certain organizational characteristics and decentralization of authority in four decision areas. From his findings regarding the correlations among the four decision areas, he concludes that decentralization does not seem to be a unidimensional factor in universities.

In the Ross (89, pp. 110-111) study, no one organizational variable is related to all measures of decentralization. The author concludes that pressures in universities to decentralize vary according to the issue under consideration, and decentralization is the result of the combined effects of institutional pressures to decentralize and the administrative mechanisms that decrease the risks of decentralization.
Ross (89, pp. 112-113) found that in areas in which faculty are most likely to make the final decision and can bring their expertise to bear, decentralization is not related to faculty qualifications. Decentralization of these decisions may be a function of the culture of the universities rather than their social structure, and influence may have as large a role in academic decision-making as does formal authority.

**Participation**

Participation in decision-making has a variety of meanings. Dachler and Wilpert (24, p. 2) summarize the various meanings as (a) a central concept of organizing and (b) an organizational strategy; they believe that these two perceptions are interdependent and should not be separated. Participation also is viewed as a sharing of power among the members of an organization (78, p. 140). Others refer to it as the particular form of governance of an organization (2, p. 47; 43, p. 252).

**Participation in decision-making in business firms.**—Studies of participation in business firms reflect an interest in its relationship to organizational effectiveness. Pennings (75, pp. 396-405) examined the branch offices of a large brokerage firm to determine (a) the relationship between structural variables and the environment, and (b) if those organizations that show consistency
between structure and environment are more effective than those that show inconsistency. Pennings concludes that the goodness-of-fit between environment and structure is not relevant to organizational effectiveness, and that variance in effectiveness is primarily due to the structural variables. Pennings says,

if the employees of the organization were left on their own, did not share ideas, were not informatively integrated, did not participate in decisions, and did not receive support, the effectiveness on any criterion will be below average (75, p. 405).

Pennings (74, p. 697) also examined the relationship between organizational effectiveness and the influence variables of participation, centralization, and autonomy. He concludes that the autonomous, decentralized, participative organization is a more effective one.

Neghandi and Reimann (70, pp. 207-211) include participation as a decentralization variable in their examination of manufacturing firms. The purpose of the study was to determine the relationship between decentralization and organizational effectiveness, and they conclude that decentralized firms are more effective.

Patterns of participation in higher education institutions.—Studies of participation in educational institutions show that the mechanism for faculty participation varies. In their study of patterns of governance in college and university departments, Hobbs and Anderson (43,
found that although there are several models for governance, two models predominate. In the collegium model, which is referred to as faculty democracy, all faculty have a voice regardless of rank or title. The oligarchy model denotes rule of the group, such as tenured personnel or those with senior rank.

Mortimer and his associates (67, p. 275) differentiate between the decision patterns of business organizations that employ professionals and the decision patterns of educational institutions. According to these researchers, the administrative bureaucracy is the dominant decision-maker in noneducational institutions, while in educational institutions the faculty holds this dominant position. They suggest that the distribution of authority in educational institutions has some similarity to that in industry. Although educational institutions appear to use either a bureaucratic administration, a professional staff, or a dual representative collegium to make decisions, depending upon the nature of the decision.

Helsabeck (39, p. 5) classifies organizational units according to the degree of input into decisions by the unit members. According to Helsabeck, participation in decision-making ranges from one-man-rule to everyman-rule, and it may be categorized not only on the basis of who makes the decision, but according to the degree or extent
of participation by the members of the organization, ranging from no participation to full participation.

Helsabeck (38, pp. 26-37) believes that the amount of participation alone is not sufficient to account for the various decision-making arrangements as they relate to effectiveness, and he suggests that a compound system is more appropriate. Examining the relationship between the decision-making structure and organizational effectiveness in six small liberal arts colleges, Helsabeck found that four of the six colleges show differences in the type of participation, the number and autonomy of the decision-making units, and organizational effectiveness. On the basis of his findings, Helsabeck suggests that "the most effective overall system is a compound one in which various decisions are made at the level which balances decision making costs, external costs and expertise" (38, p. 57).

A survey by the American Association of University Professors (85, pp. 68-73) examined the level of faculty participation in college and university government. The findings indicate that, in general, faculty participation is somewhat below the consultation level, with an index of 293 on a scale of 100-500. Since wide variations in the responses to the different questions were noted, findings show a tendency for faculty and administrators to perceive the same actual conditions differently. The
researchers, however, conclude that faculty participation in the colleges and universities of the United States, as viewed by faculty and administrators, is at the consultation level, a level lower than the suggested ideal.

Rourke and Brooks (91, pp. 128-129) remark that the traditional approach is a direct democratic one in which the faculty as a whole participate in governance; they believe, however, that a more appropriate alternative is the representative form. They feel that individual faculty member participation decreases as status increases, with the consequence that academic policy will be determined by business administrators. They suggest that the faculty has an obligation to maintain its role of participation in the university decision-making process and should do so through the instrument of a faculty committee or a core group of academic administrators.

Dykes (26, pp. 37-42) examined faculty participation from several aspects, including how faculty members participate, what impels them, what their proper role should be, and whether they are satisfied with it. He suggests that there is a misunderstanding of administrative authority, with a subsequent separation of powers that leads to a lack of effective leadership.

Based on his findings, Dykes concludes that although faculty members believe that they should have a strong participation, they are reluctant to assume the burden of
participating in institutional affairs. They are reluctant to recognize the participation implications of large and complex institutions. They tend to categorize decisions by education and noneducation areas, and they feel that they should be involved only in academic affairs. The faculty views an increase of administrative power as a decrease of its power.

According to Dykes, there is a discrepancy between the reality of the faculty role and what the members perceive it to be. He sees the faculty members' perception of distribution of power and influence in their own communities as quite simplistic. They attribute more power to administration than it actually has. Dykes believes that strong leadership is needed to "mobilize the collective effort of faculty and administration toward the definition and attainment of institutional goals" (26, p. 42).

According to Pollay and others (78, pp. 146-154), faculty participation in institutional administrative decisions is achieved by the election of the members of the administrative committee or the selection of representatives of the constituency groups. These researchers tested a participative model of horizontal power-sharing in a university business school in which the decision issue involved the selection process for a new dean. Based on the outcome, they conclude that the application of the model is "beneficial" (78, p. 154), and they suggest that
the model might be useful for other complex decisions in horizontal-power organizations. They perceive that the forced examination by the faculty of the organization's future prospects facilitates the self-adaptive process in the organization.

Balderson (5, p. 386) indicates that the increased size and complexity of higher education institutions create a need for an alternate approach to university decision-making. Balderson believes that the traditional or direct town-hall form of participation should be replaced by the indirect representative form.

**Participation in higher education and institutional characteristics.**—Several studies on higher education suggest that various institutional characteristics influence the patterns of governance. Baldridge and his associates (6, pp. 378-387) compared American colleges and universities to determine patterns of diversity and which organizational features influence the diverse patterns. Based on their findings, they conclude that the academic governance processes are and should be different in the various institutions, and that environmental relations, professional tasks, institutional size, and complexity are related to the institutional differences. Finally, they conclude that although faculty autonomy varies across institutions, in those that enjoy higher
prestige there is more freedom for the faculty to manage its affairs, and the faculty members tend to participate more in decision-making.

Mortimer and his associates (67, pp. 280-282) see the type of institution as a correlate to faculty participation. When two- and four-year institutions were categorized according to control and academic type, they found that two of the three state colleges studied were in the shared-authority category of governance, and that all three were closer to shared authority than any of the three community colleges.

Ross (90, pp. 111-211), who examined faculty qualifications and decision-making in colleges and universities, suggests that faculty qualifications may be related to influence in decision-making even without decentralization of final authority. He concludes that although faculty qualifications are not strongly related to decentralization, the data do support the hypothesis that faculty qualifications are related to influence. In addition, Ross emphasizes that the voice in governance of more highly qualified faculty occurs primarily through influence by way of the faculty decision-making apparatus rather than through formal decentralization. In large public-controlled institutions, faculty feel that they have more influence in appointments. The form of participation is as important to faculty as the fact of participation, and as institutions
become larger and decisions are made at the department level, the faculty feel that their influence increases.

In contrast to the above findings, the American Association of University Professors survey (85, p. 68) did not find a relationship between size and control and degree of faculty participation. However, it is noted that faculty of institutions in the Southern region tend to have a lower average participation score than those in other regions.

**Participation in higher education and decision issues.**—Many of the previously described studies also use type of decision as a variable in the examination of participation in decision-making. Although it is recognized that not all issues are of equal importance to faculty members (26, p. 38; 90, p. 211), Mortimer and his associates (67, p. 282) found it to be a powerful variable. The more commonly-identified decision areas are appointments, student affairs, budget, faculty salaries, and academic affairs (26, p. 1; 39, p. 152). Investigators have found that, in general, faculty participation tends to be higher on academically oriented issues (26, p. 34; 39, p. 133; 67, p. 281). Mortimer and his associates (67, p. 283) found that faculty participate to a greater extent on curriculum decisions than on merit-raise decisions. They also note a pattern of greater faculty participation
on decision issues in which faculty members perceive the
governance to be legitimate (67, p. 285).

Helsabeck (39, p. 133) found that in the six colleges
which he examined, all show higher levels of faculty par-
ticipation in decisions related to committee assignments,
student selection, curriculum, and other academic matters.
In contrast, he found that all but two institutions tend
to have lower levels of participation in institution-
oriented decisions regarding resource and authority allo-
cations.

Decision-making in collegiate schools of nursing.--
Studies on decision-making in collegiate schools of
nursing also have been done. In some collegiate schools
of nursing, Jacox (48, p. 703) indicates that decisions
regarding appointments are made solely by the administra-
tion. The author adds that although faculty has more
participation in curriculum decisions than in those
regarding their own status, administrators often make
unilateral decisions in status areas with little resistance
from faculty.

According to Jacox, faculty accept inappropriate
administrative authority which is disproportionate to that
of administration in other colleges or departments of the
university (48, p. 703). She suggests that this occurs
because it is those nurses who are trying to improve their
education and practice who become the administrators, and they frequently establish nursing services and educational programs in which all authority is vested in the nurse at the top (48, p. 703). Nurses are expected to obey the command of their "superiors." This authoritarianism, according to Jacox, is reinforced by the fact that many of the nursing programs were developed in the context of religious orders or the military (48, p. 703).

Within the framework of Parsons' social theory, Johnson (49, pp. 100-106) examined the relationships between certain organizational characteristics at collegiate nursing schools and certain variables reflective of decision-making and nursing school autonomy. The data indicate that there were only two important relationships among the variables examined; there was a positive relationship between the dean and faculty agreement on responsibility for decision-making and school autonomy, and there was an inverse relationship between agreement on decision-making and dean autonomy. Johnson, therefore, concludes that "the greater the autonomy of the school of nursing in the university, the less the autonomy of the dean in the school of nursing and the greater the base of decision making responsibilities within the school of nursing" (49, p. 106).

Johnson (49, pp. 106-107) also suggests that although certain findings were not statistically significant, the
data indicate a tendency toward an inverse relationship between satisfaction and agreement on responsibilities for decision-making and the place of the school in the university community. A final conclusion relates to the tendency for the administrative faculty to agree with the dean more so than with the teaching faculty regarding decision-making. In the belief that the decision structure is vague to some faculty, Johnson indicates that there is a need for greater communication in order to encourage faculty to seek active participation in decision-making.

Other Organizational Characteristics

There are variables other than structural ones that may be characteristics of the organizational setting and may provide additional bases for comparison. These variables influence the structure and function of an organization (83, p. 91), and they provide the context within which the organizational structure is situated (63, p. 40).

Studies of formal organizations in business and government reflect the interest in the influence of size and certain contextual variables on the organizational structure. These variables have been discussed as determinants of organizational structure. This section includes a consideration of organizational characteristics
(other than those that are strictly bureaucratically structural) that are of interest in the areas of higher education in general and nursing education in particular.

Higher Education

According to Blau (11, p. 249) organizations may be characterized by their financial, human, and institutional resources. Studies in higher education reflect this perception and are reviewed in this section in an order that seems most appropriate to the nature of the various studies.

Size and nature of the task.--Studies in higher education examine size as it relates to other characteristics of the institution and often include the nature of the task as one of these characteristics. Blau (13, p. 252) sees size as having a predominant influence on the character of an academic institution. Blau believes that size reflects an institution's economic and manpower resources, its impersonal atmosphere, the large administrative workload, and the statistical probability that faculty will find colleagues with common interests. In his study of the organization of academic institutions, Blau found twenty-one direct effects of size that fit the above categories.

According to Blau (11, pp. 253-254), the size-generated increase in resources make institutions more
attractive, while the increased impersonality makes them less attractive. The increased administrative load tends to lead to decreased recruitment of outside faculty and to a decentralization that decreases the administration's influence in appointments and fosters delegation of authority over expenditures of funds. Finally, Blau suggests that large institutions are more likely to form departments in new fields and areas on the sheer chance that the faculty will find colleagues with whom they share specialized interests.

Holdaway and his colleagues (44, p. 44) examined the structural and contextual variables in four different types of institutions of higher education and found that the number of employees is highly correlated to both the number of programs and program flexibility. In addition, the findings show that the two program variables are highly correlated. Also, program flexibility is correlated with dependence and open-door policy, while the latter is highly correlated with dependence and, in a negative way, with community support.

On the basis of these findings, the Holdaway group (44, pp. 44-45) suggests that large institutions have the resources for additional programs, even if there is a need to use external specialists. Such program flexibility may be characteristic only of large educational
institutions, since other types of organizations are often limited in the initiation of new programs by capital costs.

Baldridge and his colleagues (6, pp. 381-386) compared institutions of higher education, which were categorized according to a modification of the Carnegie typology, in relation to environmental relations, professional task, and institutional size. As a result of several significant differences, they see the nature of the professional task as one of the critical differences among institutions of higher education. They view the professional task in terms of the academic degrees offered and the professional qualifications of the faculty. Institutions that offer doctoral programs and have high percentages of doctoral level faculty carry out complex professional tasks, which include (in addition to undergraduate teaching) graduate teaching, policy analysis, and research. These researchers found that in institutions at the upper end of their typology, over three-fourths of the faculty have doctoral degrees, the faculty publication rate is high, and the entering freshman students have high SAT scores. Furthermore, institutions at the lower end of the typology have few faculty who hold doctoral degrees, students with the lowest SAT scores, and very little faculty publication.

The Baldridge group (6, p. 381) notes that as the level of the typology increases, the complexity of the
professional task increases. They conclude that there is a strong correlation between the place of an institution in the typology and its indicators of professional task expertise.

Faculty work load.—Faculty work load may be viewed as a component of the professional activities of the faculty in institutions of higher education. Blau (11, pp. 217-244) states that while his study of the organization of higher education institutions focuses on the analysis of the interrelations among the various conditions of the academic setting, he also is interested in the influence of the organization of academic work on the outcome of the work. He notes a negative relationship between student-faculty ratio and the rate of college completion, and he suggests that both the qualifications of faculty and the available time faculty spend with students affect the progress of students. He concludes that large numbers of students and heavy teaching loads are detrimental both to the quality of the teaching and the performance of the students.

In his discussion of the use of mechanical teaching aids as an expression of bureaucratization, Blau (11, p. 227) indicates that it is not their use which alters the effectiveness of education, but the bureaucratic approach to their use. Such an approach easily develops when the
"large number of students and the heavy teaching loads make an institution of higher education into a teaching factory" (11, p. 227).

An American Association of University Professors bulletin (69, p. 226) reports that the student-faculty ratio for 1975-1976 was generally lower than for the previous year. For the institutions that award degrees beyond the baccalaureate, the ratios are 16.3 and 16.9 students to each teacher. The ratio is 14.7 for institutions that award only a baccalaureate degree, 19.2 for two-year institutions with academic rank, and 20.9 for institutions without academic rank. In all categories, public institutions have the highest ratios, and private independent schools have the lowest ratios with one exception; those private independent institutions that are categorized as two-year schools with academic rank have higher ratios than the other institutional types in any category except public institutions without rank. The church-related institutions in all the categorizes have mid-range ratios; the highest ratio for this type is in the two-year colleges with academic rank.

The increase in ratios noted for the previous year was interpreted to indicate the economizing efforts of the institutions on the faculty costs (69, p. 200). However, no explanation was offered for the unanticipated subsequent decrease in the ratios. The reported student-faculty
ratios for 1976-1977 show the same general decrease, with some exceptions (1, p. 6).

Margulies and Blau (60, pp. 23-27) examined the relationship between the organization of professional schools and their academic standing. They found that the average student-faculty ratio for all professional schools is 20:1, ranging from 35:1 for library science to 5:1 for medicine and dentistry; the ratio for nursing schools is 11:1. According to the investigators, those professional schools that have large ratios tend also to have a higher ratio of students who drop out the first year for academic reasons, and they suggest that lack of faculty to provide attention to individual students has a detrimental influence on the educational process.

Control.—Several studies compare institutions of higher education on the basis of control. Holdaway and others (44, pp. 41-51) examined postsecondary education institutions in terms of the extent of public control over institutional affairs, and they believe that the greatest public control is exerted over institutions that operate under government departments. They found that type of ownership was the variable most closely associated with bureaucratic control variables, and they conclude that post-secondary institutions that have more programs, greater governmental control, and larger enrollments
tend to be more regulated and structured. They suggest that publicly controlled large institutions generate a need for an administrative hierarchy and the resources to support it.

Rodgers and Elton (87, pp. 242-244) investigated the environment of medical schools and found that type of control, size, and graduate emphasis are the factors by which medical schools can be compared. They profile private medical institutions as being more selective of their applicants, tending to have higher rates for tuition and fees, having many applicants relative to the size of the first-year class, and having a high percentage of students who have completed four years of college. Ross (90, p. 207) distinguished between public and private institutions in relation to faculty influence in university decision-making on faculty appointments. Public institutions appear to allow more faculty influence in the decision process on the basis that they are more willing to judge faculty on professional rather than personal criteria.

Baldridge and his colleagues (6, pp. 376-378) examined higher education institutions according to a modified Carnegie typology that consists of a range of institutions from private multiuniversities (most prestigious) to private junior colleges (least prestigious), with the larger and more complex ones at the upper end of the typology.
The study indicates that public institutions are in the upper and middle ranges of the typology. The institutions at the upper end of the typology, whether public or private, tend to be more affluent, obtain more funds from a variety of sources, pay higher faculty salaries, and are more selective in student admissions; these institutions also offer doctoral degrees, the majority of their faculty have doctoral degrees, entering freshmen have high SAT scores, and the faculties have high publication rates. Finally, the authors suggest that the higher prestige institutions have fewer bureaucratic regulations and less supervision than institutions in the lower range.

Pfeffer and Salancik (77, pp. 144-150) suggest that there is a relationship between control and power. In an examination of twenty-nine departments in one university, they found that subunit power has an effect on resource allocation and both size and time help account for the effect of subunit power, although national rank and college effect do not. Based on their findings, the authors suggest that there might be both internal and external constraints on the use of subunit power in resource allocation. They also suggest that it is likely that public universities, and those that are new or less prestigious, may have more external constraints than private ones, since they have less power related to external agencies.
In his study of academic organizations, Blau (11, p. 26) categorizes control as public, religious, and private secular, and his study sample was approximately 29 per cent public, 21 per cent secular, and 49 per cent religious. He found that the number of better qualified students who chose denominational colleges is sufficient to counteract the preference of others for the better secular institutions; he concludes, therefore, that there are as many bright students who attend religious institutions as other institutions, although the quality of the religious institutions is inferior (11, p. 91).

Blau (11, p. 135) found that private institutions are more affluent, pay higher faculty salaries, have higher admission standards, and are more selective than other institutions. The author suggests that the secular colleges are concerned with maintaining the high standards necessary for their superior reputations, and that these concerns for scholarly matters are less likely to be diverted in such institutions by religious matters or the necessity to provide vocational skills.

Blau (11, pp. 142-143) also found that while large institutions tend to attract better students than do smaller ones, there is little difference between public and private institutions in their freshman students' SAT scores. The author concludes that other institutional conditions which may contribute to the attraction of large
institutions for bright students are visibility, a stimulating environment, and a location near big cities. Blau concludes that a location outside of the South, affluence, and the quality of the faculty are conditions that enhance such institutions' reputations among the better students.

Additional findings from Blau's (11, pp. 174-175) study show that religious institutions tend to be less affluent, small in size, emphasize teaching, and have less qualified faculty. These conditions combine as influencing factors on the lack of influence by faculty on faculty appointments. Blau suggests that the institutional religious authoritarianism of many denominational institutions tends to restrict faculty control over appointments.

Other findings show that although the presidents of large institutions have less control over the distribution of funds than do presidents of the small colleges, and religious institutions tend to be smaller than secular ones, the authority of the president regarding unexpended funds is more limited (11, p. 183). According to Blau (11, p. 184), the findings show that both presidents and faculty in religious institutions have less financial authority than their counterparts in secular institutions, and he suggests that it is more likely that the authority is centralized to boards of trustees and not decentralized to deans and chairmen.
Blau (11, p. 234) also found that the graduates of public institutions are less likely to go to graduate school. He suggests that his findings might be related to the fact that the graduates of public institutions who come from disadvantaged backgrounds are less likely to have attended good primary and secondary schools and to be free from the restrictions of part-time work; therefore, they were less able to perform well in college.

Faculty qualifications and institutional ratings.--A variety of higher education studies investigates faculty qualifications and institutional ratings as a means for comparing institutions. Blau (11, p. 224) equates the quality of an institution's human resources with the proportion of faculty who have completed a doctorate. In 115 institutions, Blau found that 38.39 is the mean percentage of faculty who have doctorates or professional degrees. Since there was a significant correlation between faculty quality and the rate of college completion for students, Blau concludes that the superior quality of the faculty contributes to students' educational progress.

According to Blau, institutions with better quality faculty tend to be decentralized, and there are limitations to the influence of administrators on faculty appointments (11, p.255). In addition, the quality as well as the quantity of faculty appears to be related to the reputation of
a major university, and institutions with good reputations tend to be less centralized (11, p. 256).

According to Ross (90, pp. 202-208), however, faculty qualifications are not necessarily related to decentralization, although there is a relationship between the quality of faculty and their influence in decision making. In his study on faculty qualifications and collegiality, Ross found a relationship between the percentage of faculty with a "Ph.D. degree" (90, p. 208) and faculty perceptions of their influence on general educational policy and faculty appointments.

Baldridge and others (6, p. 378) included faculty quality in their typology of institutions of higher education. At the top of the typology are the private multi-universities whose elite faculty has complex research and teaching activities. Public colleges, which are in the lower middle range in terms of faculty, student selectivity, and strength of degree programs, are described as offering at least one professional or occupational program such as nursing or teaching. Private junior colleges are at the bottom of the typology, with the lowest level of formally trained faculty who have only teaching responsibilities.

Baldridge and his colleagues (6, pp. 381-387) perceive the professional quality of the faculty, along with the academic degree programs offered, as a reflection of the nature of the professional tasks performed by the
institutions. They define professional quality as the percentage of faculty who hold doctoral degrees; they found that those institutions that have the larger number of faculty members who hold doctoral degrees are at the upper end of their institutional typology. They conclude that such institutions are large public or private multi-universities, which have elite faculties and prestigious graduate programs.

Various institutional surveys rate university faculties as a measurement of quality, and they use quality as a reputation criterion. Some writers criticize such surveys for using reputation as a synonym for quality (76, p. 510).

In their rating survey of graduate programs, Roose and Anderson (88, pp. 1-111) include the quality of the graduate faculties, the bases for which are scholarly competence and faculty achievements as perceived by other faculty. The investigators found that 70 per cent of the programs have quality of graduate faculty scores of two or better on a scale of five. Almost 33 per cent are in the upper score category; however, 30 per cent are in the lower category, which is considered insufficient quality for doctoral training. These data show a slight decrease from the 72 per cent for all programs that scored two or better in the 1964 survey.

Roose and Anderson (88, pp. 9-25) found that factors such as academic discipline, new programs, geographic
location, and size tended to influence the scores. The investigators also found that fragmentation of program resources influenced the number of faculty and programs that received a quality rating of more than two. They suggest that there is a need for an adjustment of policy consideration in times of increased scarce resources.

Petrowski and his colleagues (76, p. 504) examined the ratings of universities from the American Council on Education survey, but they focus upon program aspects rather than faculty ratings. The authors indicate that scholarly competence and faculty achievement are not enough data upon which to base policy decisions regarding allocations of scarce resources.

Blau and Margulies (12, pp. 42-46) believe that the measurement of professional reputations by experts is a "short-cut" for measuring professional quality. In their survey of professional schools, the authors asked the deans to list the five best schools in their field. No mention is made of the criteria upon which the deans based their judgments other than their own opinions. However, faculty quality is not included in the five factors examined by the authors for their relationships to the reputations of the schools.

Faculty quality and educational attractiveness are the two criterion used to judge education, law, and business schools in a survey of "knowledgeable scholars" (18, p. 44)
in response to the Blau-Margulies approach. The findings indicate that the scholars agree in their rankings of the top schools (but less so for other schools), and that peer attitudes still matter (18, p. 48).

Solomon (99, pp. 77-99) identifies peer group effects and faculty quality as dimensions of college quality. In his study of the impact of college quality, faculty quality is measured in terms of average faculty salary. Additional measures of school quality are the total income or expenditure per student and a subjective Gourman measure. The author concludes that college quality influences students' earnings twenty years after attending, and it has a greater impact on the income of high-ability as opposed to low-ability students.

**Nursing Education**

Studies in nursing education institutions include multiple variables and their interrelationships. Pertinent to this study are those that investigate the quality of the institution as reflected in faculty qualifications and workload.

**Faculty qualifications.**—In a systems pathology study of undergraduate nursing programs, Jones (50, p. 126) identifies five sectors that are the major variables in the study. These sectors include students, faculty, facilities capacity, hospital-clinical, and reputation-
quality. According to the author, the faculty sector attempts to maintain the level of qualified faculty that is required for program accreditation, and Jones' causal loop diagram indicates that the required number of faculty is dependent upon program size and accreditation requirements. Acquisition of faculty to maintain the required level is made by permanent and temporary faculty, thus reflecting faculty quality. Jones defines temporary faculty as those who do not meet the qualifications for permanent faculty positions.

Using the loop diagram, Jones (50, p. 128) examined the characteristics of twenty nursing programs and developed a composite model program that reflects the results. For the ten-year study period that included rapid program expansions (1965-1975), there was a sharp increase in the required number of faculty, both permanent and temporary, the availability of clinical facilities decreased, and the quality of students slightly decreased and then leveled.

On the basis of the results, Jones (50, p. 129) identifies student quality and faculty quality as being the two dominant factors in the long-run development of nursing programs. He defines faculty quality as reflective of "changes from (a) the development of the total faculty through teaching competence and research activities and (b) acquisition of new faculty" (50, p. 129). In addition,
the author assumes that student quality is dependent upon faculty quality.

Miller (65, p. 172) believes that there is a direct relationship between the quality of nursing education and faculty quality. He indicates that there is a concern, which is demonstrated in the literature, that baccalaureate nursing programs lack vitality and consistency with accepted criteria for colleges and universities, and that graduate education in nursing is not preparing faculty for the "discovery and transmission of new knowledge" (65, p. 172).

In a comparative study of elite and nonelite schools of nursing, social work, and education, Miller (65, p. 174) examined the incidence of inbreeding as one measure of faculty quality. Of the twenty nursing schools studied, 48 per cent had inbred faculty as compared to 39 per cent in the sixteen schools of social work and 31 per cent in the eighteen schools of education. In addition, he found a higher proportion of inbred faculty in the elite than in the nonelite schools of both nursing and education. Nursing school junior faculty are also more likely to be inbred than senior faculty.

On the basis of his findings, Miller concludes that the level of inbreeding differs among the three types of professional schools in the study. He suggests that while inbreeding in nursing schools is functional as a stopgap
measure for relieving a shortage of qualified faculty, it is dysfunctional for the students who are being educated by faculty who have parochial views and "limited exposure to new theories, ideas, and techniques" (65, p. 177).

_Faculty workload._—Nursing studies reflect an interest in effective utilization of faculty in an educational area that requires close supervision of student activities and which is under increasing economic constraints. One often-examined faculty characteristic is the student-faculty ratio. According to the 1964 report of the Joint Committee on Educational Facilities for Nursing (71, pp. 37-46), the student-faculty ratio is influenced by (a) the nature of nursing practice and education, (b) the location of patient care areas, (c) the need to utilize community resources to obtain student experiences, and (d) the need for close supervision of the student in patient-care experience. The committee suggests that an appropriate student-faculty ratio is 9:1 for undergraduate programs and 4:1 for graduate programs.

Rice and Mitchell (86, pp. 61-66) examined workload in a study of the determinants of individual behavior in a state university school of nursing. They perceive various behaviors as reflective of the professional activities of the organization's members, and they include distribution of time in various activities as one of the behaviors. The
authors hypothesize that behavior is a function of a person's position in the organization and the types of interpersonal relations he shared with co-workers. They found that there were significant correlations between the number of hours spent during clinical activities, administrative work, and community service and the various structural variables.

Rice and Mitchell (86, pp. 66-69) found that the total number of hours spent decreases as influence increases. The more time spent in clinical preparation, the less the individual's status and influence; the fewer faculty he has direct contact with, the less prominence he has and the lower the status of those he chooses as co-workers. Upon the basis of these findings, the authors conclude that the greater the time spent in field settings, the less prominence the person has in work and dimension structures. They further suggest that hard work does not seem to lead to influence, and that those who are more peripheral in the organization work harder to change their position in the interaction structure.

In his path analysis of nursing programs, Jones (50, p. 127) relates faculty workload to faculty quality in that the level of faculty quality is based upon the number and distribution of students in the program as well as upon accreditation requirements. He views that the faculty acquisition process attempts to maintain the
prescribed student-faculty ratio within the various constraints of "market conditions, geographic location, school reputation, and salary scales" (50, p. 127).

Jones (50, pp. 129-130) suggests that the decision to expand nursing programs in the late 1960s (and the subsequent increase in admissions with little control) created a future demand for new faculty which shows little chance of being met. Thus, since the mid 1970s faculties have had heavy teaching assignments, and the type of curriculum has imposed heavy demands upon faculty time for planning and coordinating, leaving but little time for research and development. As a result of these conditions, Jones believes that faculty quality has suffered. The acquisition of large numbers of temporary faculty to meet the accreditation requirements of student-faculty ratios also influences faculty quality.

According to Ozimek and Yura (73, pp. 2-9) the task for nursing faculties includes responsibility for the "development, implementation, and evaluation of the curriculum" (73, p. 5); the role of faculty includes student academic advisement, participation in university activities, research, and community and professional activities. Cost-effective utilization of faculty is important in the maintenance of program quality, particularly in a time of economic retrenchment, and Ozimek and Yura suggest that there is a need for examining the variables which influence
the faculty workload. Since no single student-faculty ratio is appropriate for every situation in every setting, there is a need for a model for calculating faculty workload.

Organizational Performance

The literature on organizational design reflects the continuing search for the optimal design. The contingency approach suggests that there is no single best design since there are situational factors which determine what works best for a given organization. There are diverging opinions on the definition and measurement of organizational performance. The divergence also is noted in the way in which organizational performance is included in comparative studies of various types of organizations.

Organizational Performance in the Business Sector

Much of the literature in the business sector focuses on organizational performance in terms of organizational effectiveness. The survival of an organization is said to be related to its organizational effectiveness (47, p. 353). However, there appears to be a lack of understanding about what is actually involved (101, p.646). The literature on organizational performance or effectiveness is reviewed in terms of (a) conceptualization and measurement of organizational effectiveness and (b) organizational effectiveness as a dependent variable in comparative studies.
Conceptualization and measurement of organizational effectiveness.—Argyris (3, pp. 115-123) believes that organizational effectiveness means different things to different groups within an organization because they tend to view it within the context of their own experience. An organization's core activities are (a) achieving objectives, (b) maintaining the internal system, and (c) adapting to the external environment. Organizational effectiveness, Argyris suggests, is concerned with increasing outputs in relation to constant or decreasing inputs. Thus, as effectiveness increases, the organization accomplishes its three basic activities at constant or increasing rates with the same or decreasing amount of energy inputs.

Price (79, pp. 11-13) believes that there is no currently available general measure of effectiveness. The goal approach reflects the achievement of a desired state of affairs in the organization, while the systems resource approach measures the ability of the organization to exploit the environment in the acquisition of scarce and valued resources. Price suggests that there should be a greater use of (a) measures that are based upon objective data, (b) norms or benchmark data that are based upon satisfactory validity and reliability scores of existing measures, and (c) additional types of verbal measures.

Evan (29, pp. 18-24) notes that there have been only a small number of studies on performance or effectiveness,
and it appears that the various structural studies have in common an intraorganizational orientation which tends to ignore organizational effectiveness. Within a framework of systems theory, Evan conceptualizes nine organizational effectiveness ratios as measures that are based upon the four systematic processes of inputs, transformations, outputs, and feedback effects. Although the ratios are in principle applicable to any organization, all nine ratios do not need to be operationalized in any one study. According to Evan, measures of organizational effectiveness can be developed without identifying organizational goals through measuring dimensions of inputs, transformations, and outputs (as reflective of universal organizational goals) using the various organizational effectiveness ratios.

In an effort to integrate the various studies on organizational effectiveness, Steeres (101, pp. 555-646) reviews seventeen models of effectiveness from the perspective of measurement. He categorizes them in relation to the focus on organizational characteristics of individual behavior, the number of variables, a normative or a descriptive type, and the generalizability and derivation of the variables. Steeres suggests that organizational effectiveness is a complex issue and proposes an operative goal approach to model development to reflect a necessary prerequisite understanding of an organization's functional
and environmental uniqueness. This is a more flexible contingency approach that focuses on goal attainment, differential weighting of goals, as well as the acknowledgement of irreducible constraints through goal optimization.

Scott (94, pp. 64-91) sees the dilemma of organizational effectiveness in terms of the various disagreements regarding the determinants of organizational effectiveness. He suggests the use of a contingency model that focuses on the general expectations that a good organizational arrangement depends on what it is attempting to do and under what conditions.

According to Mahoney (58, pp. B-76-B-83), managerial judgment regarding organizational effectiveness reflects perceptions of organizational goals. In order to determine criteria for effectiveness, he investigated managerial perceptions and judgments regarding subordinate organizations, finding twenty-four perceptions of basic dimensions of organizational effectiveness. He concludes that efficient performance is the aspect of organizational effectiveness which "most closely approximates the achievement of ultimate goals" (58, p. B-83). In addition, other dimensions indicative of ultimate goal achievement are mutual support and utilization of personnel within the organization, planning, reliability, initiation, and development.

Seashore and Yuchtman (96, pp. 377-393) define organizational effectiveness as "its ability to exploit its
environments in the acquisition of scarce and valued resources to sustain its functioning" (96, p. 393). In their examination of insurance sales agencies over an eleven-year period, they sought to determine the characteristic factors of small business organizations, and they found ten factors that describe most of the variance in a set of performance indicators. They conclude that these factors represent the processes of resource acquisition rather than end states or outcomes; "goals and goal attainment are not applicable to organizations, and organizational performance can be assessed and described in terms of generalized resource-getting capabilities" (96, p. 377).

Of interest to the measurement of performance is the view of control as an evaluation process instead of a structural characteristic (72, p. 111). According to Ouchi (72, pp. 96-111) control consists of a process for monitoring and evaluating performance, and he suggests that there are only two phenomena which can be observed, monitored, and counted—behavior and the outputs of behavior. With behavior control, the means-end relationships must be known and agreed upon; with output control, a measure of the outputs must be available.

From his study of the relationship between structure and control in seventy-eight retail department store companies, Ouchi (72, pp. 100-111) concludes that although structure is not the same as control, they are related.
Large organizations, which are differentiated, develop more complete measures of output, have more homogeneous tasks, and have less need for complete measures of output. Size leads to development of output measures that minimize control loss; their availability is necessary for output control. Output measures are never able to assess all of the performance goals of the organizations, and such measures are used more when the clientele participate in the control process. Finally, the presence of a training staff in large organizations reduces the emphasis on output control.

**Organizational effectiveness as a dependent variable**.-- Comparative studies in business and industry include organizational effectiveness as a dependent variable, and they examine other organizational attributes in an attempt to determine the characteristics of effective organizations. Child (23, pp. 2-16) suggests that certain universal factors not only determine organizational performance, the effect of those factors on the organization varies with different situational attributes. The major sources of influence on the functioning of an organization are strategic decisions as responses to various pressures, the manager's stake in ownership, the structural design, and the quality of the management. After reviewing research findings on organizational performance organized around ten propositions, Child
concludes that managers need to obtain and evaluate information on the operational situation of the organization and adapt the structure as necessary.

Although the basic focus of their research on manufacturing firms is decentralization, Neghandi and Reimann (70, p. 207) use organizational effectiveness as a dependent variable, and they define it in terms of both behavioral and economic criteria. Upon the basis of their findings, they conclude that there is a relationship between decentralization and organizational effectiveness.

Pennings (75, p. 405) investigated the relationship between structure and environment in his study of brokerage firm branch offices. However, he also examined the effectiveness of those organizations that showed a fit using five measures of effectiveness between the structure and environment. Pennings concludes that the variance in effectiveness is explained by structure, and he suggests that goodness-of-fit has little influence on the effectiveness of the organization, regardless of whether the referent is internal or external.

Hirsch (42, pp. 330-342) compared the organizational effectiveness of two process production industries (phonograph recordings and pharmaceuticals) in an exploration of collective interaction in each with their environments. According to the author, the pharmaceuticals industry was one of the most profitable and the phonograph recording
industry one of the least profitable over the fifteen-year study period. Hirsch concludes that the pharmaceutical industry has been more successful in influencing changes in the institutional environment of the industry, and he suggests that factors such as internal organizational changes and management styles, which had not been addressed in the study, might provide additional insight into the variation in performance.

Institutional Performance in Higher Education

Among other attributes, universities differ from corporations in the measurement of results, and Surface (102, pp. 75-99) suggests that universities lack meaningful measuring devices such as earnings, dividends, return on investment, and other ways of stating the objectives in figures. Although some university activities can be quantified, such as degrees granted, research grants received, and student-faculty ratios, they do not present a reliable picture of institutional performance; it is difficult also to measure quantitatively the performance of individual faculty, departments, schools, and colleges within a university. The following studies represent different approaches to the investigation of institutional performance.
The identification of criteria of organizational effectiveness.—Cameron (16, pp. 604-610) summarizes the difficulties surrounding the issue of organizational effectiveness, describing it as mutable, comprehensive, divergent, transpositive and complex; he sees criteria problems as the major difficulties in the empirical assessment of organizational effectiveness. The problems encountered in the selection and assessment of criteria of effectiveness in higher education relate, Cameron believes, to the complexity of goals and outcomes, the attitude of the academic community regarding evaluation of institutional effectiveness, financial pressures resulting in efficiency rather than effectiveness research, and the question of whether organizational effectiveness is even applicable to higher education institutions.

Cameron studied six higher educational institutions in an attempt to identify "a core group of effectiveness criteria that are relevant to organization members, applicable across subunits, and comparable across institutions" (16, p. 611). The study focuses on organizational characteristics rather than goals and uses the major decision makers in the institutions as the sources of data. Cameron found that the identified criteria cluster into nine dimensional categories, not assumed to be independent, but representing conceptually different constructs.
When the data were analyzed to determine if the effectiveness dimensions differentiated among the schools and respondent groups, Cameron found that the dominant coalition members or major decision makers have similar conceptualizations of effectiveness. Although the institutions varied in their effectiveness profiles, certain patterns of effectiveness could be differentiated (16, pp. 616-621).

Cameron (16, p. 622) suggests that institutions can be differentiated by their high or low effectiveness profiles in regard to (a) external dimensions, (b) morale, and (c) student oriented dimensions. Some institutions appear to achieve a higher overall effectiveness than others.

*Institutional performance as a dependent variable.*—In his comparative study of colleges and universities, Blau (11, pp. 217-219) includes a comparison of the differences in the academic performance among the institutions to determine if various structural conditions have any significance for academic performance. The indices of college completion, continuation rate, and faculty research productivity are used as reflections of the basic academic institutional responsibilities of education and scholarly research.

Blau (11, pp. 221-225) found that size, doctoral granting universities, emphases on research, and teaching
show no relation to the completion index. There are, how-
ever, counteracting influences on student progress in
universities that offer the most graduate work; since
the proportion of graduate students influences the comple-
tion rate, Blau concludes that large complex universities,
which provide the most conducive environment for special-
ized research, also provide the best environment for
undergraduate study. Although a favorable climate in
universities is neutralized by an emphasis on research,
the contribution of faculty which has superior qualifica-
tions is based on the extent to which they are immersed in
research, the presence of graduate students, and the high
aptitudes of the undergraduates who challenge their teach-
ing.

Blau (11, pp. 227-228) also concludes that bureaucrati-
zation impedes education; it is not so much the use of
technical devices as an expression of bureaucracy, but the
ways in which they are used. He found that while the
bureaucratic procedure of standardization of faculty salar-
ies has a positive influence on higher education, democratic
decision-making has a negative influence on the student-
completion rate; it may be that the students pay the price
of democracy in faculty government.

Blau (11, p. 232) found a relationship between the
various measures of advanced academic work and the student-
continuation rate. The measures include age, proportion of
graduate students, faculty qualifications, weak faculty commitment to local institutions, and admission selectivity. Blau concludes that academic climate and tradition exert strong influences on the chances of college students continuing their education in graduate school.

Blau (11, pp. 237-244) found that academic conditions such as reputation, doctoral granting institution, research emphasis, and lesser power of the president correlate with faculty research productivity. It appears that qualified faculty members who are attracted to universities with high reputations may become more productive than they would be elsewhere, thus perpetuating the university scholarly tradition and reputation. In addition, Blau suggests a need for a careful balance between the need for faculty autonomy in faculty appointments and the need for an external check on their appointment decisions.

Blau (11, p. 245) found little relationship between the two indicators of effective teaching and effective scholarship. He suggests that the proportion of graduate students and faculty qualifications are the institutional factors which further both aspects. In addition, certain other institutional attributes further one or the other of the performance indicators.
Institutional Performance in Nursing Education

There are only a few nursing education studies that investigate organizational performance. In general, the emphases of such research are program comparisons or identification of criteria for performance or effectiveness. These studies tend to focus on descriptions or comparisons of the three types of nursing programs rather than on the institutions that offer each type of program; they tend to focus on program effectiveness in terms of students' or graduates' characteristics, only occasionally including other organizational attributes. Three studies that are representative of these emphases are reviewed.

Comparison studies.--The Division of Nursing of the U. S. Department of Health, Education, and Welfare (27, pp. 1-50) commissioned a comparative evaluation study of the three types of nursing programs. The purpose of the study was to compare the effectiveness and efficiency of the various nursing programs in producing the number and quality of registered nurses needed in the nation. According to the investigators, effectiveness measures should be based upon the service capabilities of the program graduates, but such a basis for evaluation does not exist although there are several categories of gross measurements (input measures, output measures, and job performance).
The investigators found that nursing baccalaureate programs obtain more students who were in the top quarter of their high school graduating class and who have higher income professional families. It was found that such programs include more general education than nursing credit hours, that 85 per cent of the faculties have at least a master's degree, and that the student-faculty ratio is less than that of the two-year programs but more than that of the diploma programs. Baccalaureate programs graduated 63 per cent of the students admitted, and a higher proportion of the baccalaureate graduates pass the nursing licensing examination than do the graduates of the other types of nursing programs. When measured by the labor force activity rate, baccalaureate programs were slightly less effective than diploma programs. Baccalaureate nurses, however, tend to regard their education as complete to a greater extent than do the graduates of the other nursing programs (27, pp. 50-64).

The investigators note that the baccalaureate nurse is the predominant figure in nursing education, even though there is lack of evidence of superior performance. The data do not "permit definitive statements concerning the overall relative effectiveness of the three types of nursing education programs" (27, p. 74).
Schiwirian (93, p. 163) examined the state board examination performance of the graduates of 150 schools to predict successful nursing performance. Although there are varied opinions regarding the value and relevance-to-practice of the licensing examinations, "they are a standard requirement and the achievement patterns of graduates are part of a nursing school profile" (93, p. 163).

In an examination of the scores of the graduates of all three types of the nursing schools, it was found that fewer than 5 per cent of the graduates had scores below the passing score of 350. The scores of high achievers (those scoring 600 or more) and low achievers (those scoring below 400) were also examined; baccalaureate schools had the highest percentage of high achievers on one of the five tests in the examination and the lowest percentage of high achievers on two other tests. They rank second in terms of the percentage of low achievers in general (93, p. 163).

Schiwirian examined the location of the schools attended by the high and low achievers, and it was found that schools in the west have the highest percentage of high achievers across all types of schools. The schools in the midwest rank second, while the schools in the southern region have the lowest percentage of high achievers. Further analysis of the data for sources of
the variance in the percentage of high and low achievers found that the main effects persist when region and type are controlled. No conclusions regarding the findings were suggested by the author (93, pp. 163-164).

**Effectiveness criteria.**—Behm and Warnock (8, pp. 54-55) examined thirteen nursing programs that award associate degrees to establish an effectiveness measure and to determine the relationship between effectiveness ratings and state board scores. Nursing program directors and nursing service directors were asked to rate the program effectiveness of the schools in the study and to indicate the factors upon which the ratings were based. The authors found that criteria for ratings include quality of output (graduates), quality of faculty, quality of administration, curriculum, and state board examination results. In addition, they found that there is a positive but nonsignificant relationship between the effectiveness ratings and the state board examination scores. The authors conclude that (1) information gathered from a mailed survey can be a composite measure of effectiveness, and (2) the state board examination scores are not an adequate composite measure of program effectiveness.
Summary

The literature indicates that there are a variety of theoretical views regarding the way in which organizations should be structured. A more contemporary perspective is a contingency one that views organizational design and performance in terms of situational characteristics, which suggests that there is no single best way to design organizational structure.

Organizations are examined in relation to their structural differentiation, their decision-making characteristics, and various other internal and external characteristics that make up the organizational setting. The bureaucratic model generally is used as the analytical base for the examination of organizational structure, although there is varied opinion regarding the dimensional nature of formal organizations. Many research investigations suggest that the nature is multidimensional and that different types of organizations have different structural profiles.

Certain types of organizations tend to be more professionalized than others. As such, they tend to have both a professional and a bureaucratic authority structure and thus a potential source of conflict. Although organizations vary in the nature and extent of member participation in decision-making, business and educational organizations have some similarities in their distribution of
authority. There is a trend toward the indirect representative form of participation in many institutions of higher education. Member participation differs according to the various decision types, with a tendency toward greater participation in operational or academic matters and lesser participation in institutional or total organizational matters.

The level at which decisions are made varies according to various situational factors. In general, high performing organizations, which are unstable and complex, tend to be decentralized. In institutions of higher education, size, the decision issue, faculty qualifications, and routinization also are seen as factors that have an influence on decentralization.

The organizational setting also is characterized by variables such as size, task, control, member qualifications, and workload. Such factors are said to influence organizational effectiveness and performance. Size is a major influencing factor that interacts with technology and control in its influence on the bureaucratic nature and performance of organizations. In institutions of higher education, the qualifications of faculty and the student-faculty ratio, individually and in interaction with other variables, influence organizational structure and decision-making as well as institutional quality and performance.
Organization performance may be considered to be a reflection of the goodness-of-fit between structure and the various factors that affect structure, according to the contingency perspective. The performance of an organization can be measured in a variety of ways. Measures of effectiveness, perceived quality, success, function, and outputs are to a certain extent reflections of the performance of an organization. The tendency, although generally considered inappropriate for all types of organizations, is to use some quantitative measures of outputs to describe organizational performance.

In general, institutions of higher education differ from business organizations in organizational structure, decision-making characteristics, and measures of performance. Baccalaureate nursing schools or departments are units within the system of higher education. They differ from other types of nursing programs in regard to organizational characteristics as well as in performance. Less is known about the extent to which they vary in regard to their various organizational characteristics.
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CHAPTER III

RESEARCH METHODS AND PROCEDURES

This study was designed to obtain and analyze data about the relationship of the organizational setting to the licensure examination success rate of forty baccalaureate nursing schools in the United States. This chapter describes the methods and procedures followed in the study. The topics included are population, variables, research instrument, procedures for the collection of data, and procedures for the analysis and treatment of data.

Population

The study population consists of 109 baccalaureate nursing schools in colleges and universities in fifteen states in the United States. These states are in the midwest and southern regions (Appendix A). The schools are accredited by the National League for Nursing and offer at least a baccalaureate degree in nursing.

The two regions designated as sources of the population were selected using as criteria (a) the availability of the schools' success rates on the licensure examination from a sufficient number of boards in each region to
provide a relative representation, and (b) the variation in performance on the licensure examination of the nursing schools' graduates in the two regions. Further discussion of criteria is included in Appendix B.

The population consists of forty schools selected from the 109 mentioned above. The sample size represents 38 per cent of the population. A systematic sampling procedure was used to provide (a) objectivity in the sampling, (b) geographic representation across the two regions, and (c) representativeness of academic requirements for acceptance into the schools. In an attempt to ensure representativeness of the schools in the sampling procedure, the names of the schools in the population were placed on cards and divided into four sets on the basis of control and academic requirements; the sets were labeled public-high school, public-college, private-high school, and private-college. An assistant shuffled the cards in each set and selected every other card until ten had been drawn from each set. Four schools were withheld from this procedure for use in a pilot study to test the study instrument.

A sample size of forty is considered adequate for an examination of organizational characteristics by the proposed statistical procedures. The size meets criteria set by Roscoe (19, p. 184). Similar sample sizes were also used in previous studies of organizations. Holdaway
et al. (8) analyzed the structural characteristics of twenty-three colleges using factor analysis. Reimann (17) examined dimensions of structure in nineteen manufacturing companies by cluster analysis; he states that although statistical inference could not be used for generalization, it was used to "isolate relationships not likely to have occurred by chance alone" (17, p. 700). Pennings (16) analyzed forty branch offices of a brokerage firm for the relationships between three influence variables and five effectiveness variables, using the multiple regression method of analysis. Rusk and Leslie (20) used correlation and regression analyses to examine twenty-two independent and five dependent variables in a study on the setting of tuition in educational institutions. Therefore, the sampling method used for this study has been used effectively in similar studies.

Variables

For the purposes of this study, the success rate of the graduates of the forty nursing schools on the licensure-examination is used as the dependent variable. The success of an organization in the attainment of its goals is a reflection of its effectiveness, but the measure of organizational effectiveness is said to be a difficult task (19, p. 243). One of the major goals of a nursing school is the successful preparation of individuals for
the practice of nursing. Therefore, the success rate on the licensure examination may be considered a comparable measure for all of the schools in the study. Within the framework of the contingency model, which emphasizes the interrelationships of the organizational variables (5, pp. 61-63), the selected independent variables are (1) vertical differentiation, (2) horizontal differentiation, (3) complexity, (4) faculty decision-making score, (5) control, (6) size, (7) selectivity, (8) completion index, (9) faculty qualification, and (10) student-faculty ratio. Discussions of each variable follows.

The Variables of Vertical Differentiation, Horizontal Differentiation, and Complexity

The first three variables were selected to indicate the differentiation element of the structure variable in the contingency model (5, p. 71). As organizations grow, they differentiate into specialized task units; as hierarchical levels increase, so does organizational complexity (5, p. 335). Although such characteristics are bureaucratic in nature, there is variation among academic institutions as to degree of bureaucracy (3, p. 11). Blau's (3, pp. 51-57) research on universities and colleges found that differentiation is influenced by several organizational characteristics, and that complex structure is related to complex academic responsibilities.
Of interest in the study is the degree of complexity and the extent of the bureaucratic nature of nursing schools as units of organization.

Vertical differentiation is considered to indicate the span of the authority relationships and the delegation of responsibilities; it is viewed as reflective of the degree of centralization and the extent of the communication channels. Horizontal differentiation indicates the specialization into subdivisions by departments, divisions, or programs considered necessary for effective and efficient organizational performance. Complexity is an aspect of horizontal differentiation; it is an indication of the nature and level of the organization's various activities as well as the resources and facilities that are needed for academic performance.

The Faculty Decision-Making Score Variable

The faculty decision-making score variable is used to reflect the extent of decentralization in nursing schools. Faculty members are considered to have many characteristics of professionals and, thus, have professional authority over certain decisional aspects of their academic activities (3, p. 159). Such decentralization in decision-making is in contrast to centralized bureaucratic authority. The contingency model suggests that there is an organizational mix of centralization and decentralization
which varies according to the various situational variables, including the expertise of the employees (5, p. 397). Blau (3, p. 159) found that in educational institutions there are certain decision areas in which either bureaucratic or professional authority predominates. The faculty decision-making score, therefore, designates the extent of faculty participation in decision-making, and reflects the degree of decentralization in the organization. The selection of this variable is based upon the assumption that although ultimately decision-making and policy setting is done at the administrative level, faculty members as professionals do participate to a certain degree in various decision areas.

The Control Variable

Control is defined within the contingency model framework to indicate ownership, purposes, and goals, as well as the primary sources of funding and the nature of the controlling authority (5, pp. 64-66). Research findings suggest that the type of control reflects the nature of the constraints likely to be placed upon educational institutions regarding selection, size, financial resources, and student and faculty qualifications, with implications for the nature of the organizational setting (3, 18). Additionally, control is associated with
institutional affluence, with private institutions considered as being more selective (18, pp. 241-242).

The Size Variable

Size is a dimension of structure in the contingency model, wherein it is referred to as the number of employees needed to get the task done (5, p. 71). On the basis of the model, size as a structural element is perceived to be reflective of the organizational purpose, the professional nature of the employees, and the people-oriented nature of the task (5, p. 71). The definition used in this study is a modification of the one used by Blau (3, p. 29) in his study of colleges and universities. The use of size as a variable is based upon research findings which indicate that size influences other organizational characteristics (4, p. 333; 10, p. 574; 12, p. 440).

The Selectivity Variable

Selection of students may be viewed as part of the functional nature of the educational task (3, p. 131; 5, p. 57). It provides a qualitative measure of the degree to which a school plans and controls its educational activities (5, p. 57). The contingency model implies that students, as clients to be served (8, p. 41), are a part of organizational input (5, p. 62). Selection of students indicates the basic academic characteristics of the
student body which may be considered a part of the people variable in the organizational setting of the contingency model (5, p. 62).

Selectivity implies that there is institutional choice among applicants to be accepted; it is viewed as an institutional characteristic which is considered to be a measure of its quality (2, p. 3). There are various ways to define selectivity; it may indicate the average academic ability of the institution's students (1, p. 1; 2, p. 3); it may be perceived as the extent to which applicants are accepted from a pool (3, p. 132); the presence of an open-door policy may reflect an organization's selectivity (6, p. 239; 8, p. 41), or the school may select its students on the basis of certain minimum academic standards (11). The latter concept is used in this study. Selectivity is defined as a progression standard. The three factors that contributed to the use of this definition are (a) the majority of the respondents in the pilot study agreed that this is a more realistic definition for nursing schools, (b) it was assumed that the majority of nursing courses in accredited schools are at the upper-division level, since this factor is an appraisal criterion (13, p. 14), and (c) half of the nursing schools in the population for this study require one or more years of college for entry into
the program. Consequently, this measure of selectivity appears to be comparable for all the schools in the study.

**The Completion-Index Variable**

The completion index variable is perceived to be one measure of organizational productivity that is an element of the purpose variable in the contingency model (5, p. 65). It is seen also as an aspect of the people-oriented nature of the organizational task. Blau uses this variable as a measure of academic performance, although he perceives it as a "crude measure" (3, p. 30).

Nursing education is costly, and there is an acute need for nurses in health care setting. When potential nurses do not complete the program of studies, or do not perform successfully on the licensure-examination, society suffers a financial loss and an unfulfilled need (6, p. 239). The choice of the completion-index variable is based upon the assumption that an organization's performance is reflected in the level of its productivity and the quality of its product (3, p. 218). For the purposes of this study, the completion rate represents the level of productivity, while the dependent variable, success rate, represents the quality of the product.

**The Faculty Qualification Variable**

Faculty qualification is considered a pertinent variable because organizational theory suggests that
certain tasks and technology require certain knowledge and skills on the part of the employees (5, p. 297). Within the framework of the contingency model, this variable is considered to be descriptive of one aspect of the nature of the individuals in the organization and, thus, one aspect of the nature of the organizational setting (5, p. 70). In addition, the choice of this variable is based upon the assumption that the social environment has an influence on the attitudes and activities of the individual (3, p. 33). The implication is that the academic nature of the educational environment will be enhanced by the presence of faculty with doctoral preparation. However, in his use and definition of this variable, Blau (3, p. 80) emphasizes that it measures completion of the advanced education of the faculty, without indicating the quality of such education.

The Faculty-Student Ratio Variable

As a variable, faculty-student ratio is perceived to be a measure of the work-load of the faculty, which is an additional reflection of the nature of the organizational environment. The contingency model indicates that the nature of the task and its technology reflect the number of people as well as the knowledge and skills required to perform the task (5, p. 297). The people-oriented nature of the task of teaching affects the number
of students for whom an individual teacher can accept responsibility for teaching in any given period of time (5, p. 67). The amount of student-teacher contact is a characteristic of the academic environment, and the assumption is that the amount of teacher time which is available to each student depends upon the number of students whom the teacher is teaching.

Another aspect of the organizational setting or environment is affluence. Blau's (3, p. 99) research findings suggest that faculty-student ratio is a measure of organizational affluence, since the determination of the number of teachers in a given institution might be considered an indication of available economic resources.

The Research Instrument

The survey questionnaire (Appendix C) used in this study was designed by the investigator since no instrument was found in the literature that seemed appropriate to the purposes of the study. The questionnaire was designed to obtain information whose analyses would provide answers to the research questions in the study.

The instrument consists of four sections that reflect the basic dimensions of the internal organizational environment of the population of nursing schools. The items on the questionnaire are derived from the operational definitions of the independent variables. The first three sections
request twelve items of quantitative data. The fourth section requests information regarding the extent of participation in decision-making by various members and groups in the school organization. The respondents were asked to use a designated code to indicate the form of participation for each position in each of the decision areas.

Four nursing school deans participated in a review of the instrument for content validity and clarity. The deans were personally contacted by the investigator. The nature of the study was explained to them, and they agreed to participate in the pilot study. The deans were sent the questionnaire and its cover letter, along with a cover letter which explained the study and the information needed regarding the instrument. The deans were asked to (a) complete the questionnaire as directed, (b) indicate the amount of time necessary to complete it (including a secretary's time), (c) analyze it for clarity, (d) react to the questionnaire in general, and (e) react to the accompanying letter of request.

The deans who participated in the pilot study were interviewed in order to review the questionnaire. As a result of these interviews, the letter of request was reworded and the operational definition of the selectivity variable was changed. The initial definition of the selectivity variable was based upon Blau's (3, p. 131) definition that selectivity may be measured by an index obtained by
dividing the number of applications rejected by the number received. Three of the four deans indicated that data regarding applications were available in the registrar's office, rather than in the nursing school office. In one instance, the data were not readily available at the time of the interview. The deans indicated that the most important criterion for nursing school selectivity is the grade-point average (GPA) requirement for the progression of students to the upper-division level. If students meet the requirements of the university for admission, they are accepted as students in the nursing school; however, in order to continue into the upper division, students must meet a GPA requirement.

As a result of the discussion about the selectivity variable, it was felt that selectivity is demonstrated at the upper division point in nursing schools. Consequently, the operational definition was changed. In addition, minor rewording was made on some of the items in parts II and IV of the instrument for clarification purposes.

Procedures for Collection of Data

Several sources of data were used for the purposes of this study. Data regarding the nursing schools' success rates on the licensure examination, the dependent variable, were obtained by telephone from the directors of the state licensing agencies. Data regarding the independent
variables, as well as some of the population and sample
criterion, were obtained from published data and the
survey questionnaire. State-Approved Schools of Nursing,
R.N., 1978 (14) was used to obtain information regarding
financial control and academic requirements. The survey
instrument was used as the source of data for the remain-
der of the independent variables.

The names and addresses of the nursing school admini-
strators were obtained from State-Approved Schools of
Nursing, R.N., 1978 (14). These deans and directors were
contacted by mail and requested to participate in the
study (see Appendix D). A pre-addressed, printed postcard
was enclosed with the letter of request; as soon as
affirmative responses for participation were received, the
survey questionnaire, cover letter, and return envelope
were mailed to the respondents (see Appendix E). When a
negative response was received, another school was pulled
from the appropriate set in the population, and a letter
of request was sent.

Mail and telephone follow-up procedures were used for
those who did not answer the initial request and who
received but did not return a questionnaire. The collec-
tion time extended over a period of approximately three
and one-half months.
Procedures for Analysis and Treatment of Data

The data were analyzed on the total population of forty schools and on groups according to region, control, academic requirements, and level of success rate on the licensure examination. Designated levels of the success rate are upper, middle, and lower. The middle subgroup includes those schools whose rates ranged from one-half standard deviation above the mean to one-half standard deviation below the mean. The upper and lower subgroups include those schools whose success rates are above and below that range.

The statistical computer analyses of data include (a) simple correlations and (b) multiple regression (15). Distributional characteristics of each variable were examined and means were tabulated. Correlation analysis was done and Pearson's correlation coefficients were tabulated among all variables. The significance of the various correlations was determined at the .05 level.

When the independent variables were examined for multicollinearity, none was found to exist. The correlation matrices were examined for the independent variables, which would demonstrate statistically significant relationships with each other and with the dependent variables. These variables were analyzed further through multiple regression techniques including examination with the
standardized prediction equation. The standardized prediction equation was considered necessary because of the heterogeneity of the indices of measurement in the independent variables (15, p. 325). The forward technique in multiple regression was used to determine the possible subsets of variables which would contribute with statistical significance to the dependent variable (7, p. 8).

Summary

An exploratory method of research was used to determine the relationship between the various elements in the organizational setting and the success rate on the licensure examination of forty nursing schools in the United States. The forty schools are a sample of the nursing schools in the midwest and southern regions. The dependent variable in the study is the success rate of the graduates of the nursing schools on the licensure examination. The ten independent variables that make up the organizational setting include (1) vertical differentiation, (2) horizontal differentiation, (3) complexity, (4) faculty decision score, (5) control, (6) size, (7) selectivity, (8) completion index, (9) faculty qualifications, and (10) faculty-student ratio.

The research instrument is a survey questionnaire designed to obtain information regarding the independent variables. After a pilot study to determine content
validity and clarity of the instrument, the questionnaires were mailed to the deans or directors of the forty nursing schools in the study. Mail and telephone follow-up was done to contact those who did not respond to the initial request for participation.

Treatment of the data includes analysis of the total population of nursing schools and as groups according to region, control, academic requirements, and success rate.

Computer analysis of data was done, using simple correlation, examination for collinearity, and multiple regression. Means were used to describe the schools.
CHAPTER BIBLIOGRAPHY


CHAPTER IV

ANALYSES OF DATA

Introduction

This chapter reports the analyses of data concerning the organizational setting and success rate on the licensure examination of forty baccalaureate nursing schools in the midwest and southern regions of the United States. The data were obtained from nursing school deans and directors (using a survey questionnaire), from telephone interviews with directors of state board licensing agencies, and from selected professional publications.

Included in this chapter are the organizational characteristics of the schools and the relationships of the organizational characteristics to the success rate of the schools on the licensure examination. Also included are the interrelationships among the various aspects of the organizational setting of the nursing schools. Finally, a presentation is made of the influence of the various aspects of the schools' organizational setting on the success rate on the licensure examination.
Organizational Characteristics of the Nursing Schools

The first research question deals with the specific organizational characteristics of typical baccalaureate nursing schools. The second research question is concerned with the nursing schools' specific organizational characteristics grouped according to region, control, academic requirements for entry, and level of success rate on the licensure examination.

Table I contains data that show the organizational characteristics of the respondent nursing schools both as the total group and as groups based upon demographic data and level of success rate on the licensure examination. These data are presented to provide profiles of the organizational setting of the nursing schools. With some exceptions, organizational characteristics profiles of the nursing schools in the various demographic and success-rate level groups approximate that of the schools as a total group.

Grade Point Average

It should be noted that the mean grade-point average (GPA) required of students for progression to the upper division for public-supported nursing schools is 0.13 above the total group mean of 2.32, and the mean GPA for private schools is 0.13 below the total group mean. Also, the mean
### TABLE I
ORGANIZATIONAL CHARACTERISTICS OF NURSING SCHOOLS

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Mean Scores for the Nursing School</th>
<th>Level of Success Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total Group (N=40)</td>
<td>Control</td>
</tr>
<tr>
<td></td>
<td>Midwest (N=22)</td>
<td>Southern (N=19)</td>
</tr>
<tr>
<td>GPA required to progress to upper division</td>
<td>2.32*</td>
<td>2.40</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Per cent of upper division enrollment completing the program</td>
<td>46</td>
<td>46</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size of faculty</td>
<td>27</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of faculty who have doctorates</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Per cent of faculty who have doctorates</td>
<td>22</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of degree programs</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of administrative levels between faculty and dean</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### TABLE I—Continued

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Region</th>
<th>Control</th>
<th>Academic Requirements</th>
<th>Level of Success Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total Group (N=40)</td>
<td>Midwest (N=22)</td>
<td>Southern (N=18)</td>
<td>Public (N=20)</td>
</tr>
<tr>
<td>Number of subunit heads reporting to dean</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Extent of faculty participation in decision making for faculty-as-a-whole**</td>
<td>1.22</td>
<td>1.22</td>
<td>1.18</td>
<td>1.17</td>
</tr>
<tr>
<td>Faculty-student ratio</td>
<td>1:11</td>
<td>1:11</td>
<td>1:10</td>
<td>1:10</td>
</tr>
<tr>
<td>Success rate on licensure examination (per cent)</td>
<td>88.48</td>
<td>88.48</td>
<td>88.47</td>
<td>90.79</td>
</tr>
</tbody>
</table>

*N = 37

**0 = none; 1 = advice (input) only; 2 = makes recommendations; 3 = makes decision.
GPA required for the schools that have an upper-level success rate is 0.15 higher than that for the total group.

**Nursing Program Completion Rate**

Preliminary examination of the questionnaire responses regarding the percentage of the enrollment that completed the program reveals a lack of comparability between the data for schools that require only high school completion for entry and for schools that require two or more years of college. Therefore, a decision was made to use the enrollment percentage of the upper-division students who completed the program; for consistency a formula was devised to calculate this percentage (see Appendix F).

For all but one group, the mean enrollment group percentages for upper division students who complete the program is at or above the total group mean of 46 per cent. The exception is the 43 per cent mean for the schools that have an upper-level success rate.

**Faculty Size**

All but four of the nine groups of nursing schools have faculty-size means that approximate the total group mean of 27. The two largest means are for public-supported schools (38) and upper-level success rate schools (32); the two lowest means are for private schools (17) and lower-level success rate schools (21).
Doctoral-Level Faculty

The mean number of faculty who have doctorates parallels the mean faculty size. However, it is noted that the mean percentages for faculty who have doctorates is substantially lower for the private schools (12 per cent) as compared to the total group mean of 22 per cent.

Degree Programs

In comparison to the total group of nursing schools, which shows a mean of two degree programs, the southern region, private, and those schools that require only high school graduation for entry have only one degree program. For the total group, frequency distributions show that 18 schools (45%) have one degree program, 18 (45%) have two degree programs, and 4 (10%) have three degree programs. Because of the small number of schools that have three degree programs, subsequent statistical analysis includes only the one-degree and two-degree schools.

Administrative Levels

In comparison to the total group, several groups have one less subunit whose head reports to the dean. These groups are southern region, private, high school graduation for entry, and both upper- and lower-level success rate groups. Only one group, the middle-level success rate schools, has more subunits than the total group.
Participation in Faculty Decision-Making

The questionnaire responses regarding faculty participation in decision-making indicate that for some schools the five listed faculty participation mechanisms include administrative positions and do not reflect faculty-only participation in decision-making. Consequently, the data reported refer to participation in decision-making by the faculty-as-a-whole unless otherwise indicated. The extent of nursing school faculty participation in decision-making is at the advisory (input) level, which is one level above no participation at all, one level lower than the level of submitting recommendations, and two levels lower than that of making decisions. Regardless of the way in which the schools are grouped, the level of faculty participation is the same.

Faculty-Student Ratio

For schools that require only high school graduation for entry and for lower-level success rate schools, the mean number of students per faculty is slightly higher than for the other groups or for the total group of nursing schools. Also, the mean is slightly lower for the upper-level success rate schools.

The faculty-student ratio data do not differentiate between the number of students per teacher in the classroom and in the clinical area. Additional examination of the
questionnaire responses indicates that for the total group of schools, the mean faculty-student ratio in the classroom setting is 1:46, and in the clinical setting it is 1:10. Five respondents could not answer the question because the number "varies," "depends on size of class," or the school uses "team teaching, so can't answer." Frequency distributions show that 7 (20%) of the schools that responded to the questions have 100 or more students per classroom teacher; 9 (26%) of the schools have 10 or fewer students in some of the classroom settings. Frequency distributions for the clinical setting show that 25 (63%) of the schools have a mean of 8 to 10 students per teacher.

**Success Rate on Licensure Examination**

In general, the various groups have the same mean success rate on the licensure examination as does the total group of schools. However, the mean success rate tends to be slightly higher for public-supported schools.

**Decision-Making Mechanisms**

The previously presented data regarding the extent of decision-making by the faculty-as-a-whole do not include any of the other mechanisms used for decision-making in the nursing schools. Table II presents data that indicate the predominant mechanisms for faculty participation in
TABLE II

PREDOMINANT MECHANISMS AND LEVELS OF FACULTY PARTICIPATION IN DECISION-MAKING FOR TWENTY DECISION ISSUES

<table>
<thead>
<tr>
<th>Issue</th>
<th>Predominant Mechanism*</th>
<th>Mean Score for Level of Participation**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty selection</td>
<td>Individual faculty</td>
<td>1.26</td>
</tr>
<tr>
<td>Faculty evaluation</td>
<td>Individual faculty</td>
<td>1.41</td>
</tr>
<tr>
<td>Faculty promotion</td>
<td>Committee or council</td>
<td>1.37</td>
</tr>
<tr>
<td>Salary of individual members</td>
<td>Committee or council</td>
<td>.50</td>
</tr>
<tr>
<td>Budget</td>
<td>Committee or council</td>
<td>.93</td>
</tr>
<tr>
<td>Faculty teaching assignment</td>
<td>Individual faculty</td>
<td>1.56</td>
</tr>
<tr>
<td>Selection of subunit heads</td>
<td>Faculty-as-a-whole</td>
<td>1.19</td>
</tr>
<tr>
<td>Faculty teaching load</td>
<td>Individual faculty</td>
<td>1.41</td>
</tr>
<tr>
<td>Nursing faculty membership on university committees</td>
<td>Faculty-as-a-whole</td>
<td>1.53</td>
</tr>
<tr>
<td>Membership on nursing school committees</td>
<td>Faculty-as-a-whole</td>
<td>2.06</td>
</tr>
<tr>
<td>Chairpersons of nursing school committees</td>
<td>Faculty-as-a-whole</td>
<td>1.48</td>
</tr>
<tr>
<td>Requirements for admission to nursing major</td>
<td>Faculty-as-a-whole</td>
<td>2.47</td>
</tr>
<tr>
<td>Nursing curriculum</td>
<td>Faculty-as-a-whole</td>
<td>2.81</td>
</tr>
<tr>
<td>Establishment of new programs in nursing school</td>
<td>Faculty-as-a-whole</td>
<td>2.48</td>
</tr>
<tr>
<td>Course content</td>
<td>Individual faculty</td>
<td>2.24</td>
</tr>
<tr>
<td>Degree requirements for nursing major</td>
<td>Faculty-as-a-whole</td>
<td>2.62</td>
</tr>
<tr>
<td>Teaching and testing methodology</td>
<td>Individual faculty</td>
<td>2.49</td>
</tr>
<tr>
<td>Selection of students for nursing school</td>
<td>Standing or ad hoc</td>
<td>1.77</td>
</tr>
<tr>
<td>Academic discipline of students</td>
<td>Individual faculty</td>
<td>1.61</td>
</tr>
<tr>
<td>Student performance</td>
<td>Individual faculty</td>
<td>2.73</td>
</tr>
</tbody>
</table>

*Committee or council, standing ad hoc committee, faculty as a whole, individual faculty.

**The continuum is from 0 - .99 = no participation to advice (input) only; 1 - 1.99 advice (input) only to makes recommendations; 2 - 2.99 = makes recommendations to makes decision; 3 = makes decision.
decision-making and the level of participation in twenty
decision areas.

Certain patterns can be seen in the mechanisms used with certain issues. The faculty-as-a-whole is predominant in issues regarding leadership positions such as subunit head, committee members, and committee chairpersons; the level of decision-making ranges from a low level of advice (input) only to a mid-level of making recommendations. In addition, the faculty-as-a-whole predominates in decision-making in curriculum matters at levels ranging from the mid-level of making recommendations to the highest level of making decisions.

The individual faculty member is predominant in matters concerning individual faculty, such as selection, evaluation, teaching load, and teaching assignment; the level of participation ranges from a low level of advice (input) only to a mid-level of making recommendations. In matters regarding specific courses, classes, and student performance, individual faculty members also predominate mainly from the mid-level of making recommendations to the highest level of making decisions.

Participation through representation by faculty committee or council seems to be predominant in monetary matters, such as salary, budget, and faculty promotion. However, the level of participation ranges from no participation, the lowest level, to the next level of advice
(input) only. Also, representative participation through standing or ad hoc committees predominates for selection of students at the low level of advice (input) only to the mid-level of making recommendations.

The respondents were asked to provide additional data for the twenty decision issues regarding the extent of participation by the nursing school administrator, the students, and the faculty. Table III presents data regarding the mean range of participation in decision-making by the administrator, the predominant faculty decision-maker, and the students for all decision issues. The data are provided to distinguish patterns of decision-making used for the specific decision issues.

Patterns may be found in the data regarding decision-making by the administrator, faculty, and students. Administrators appear to have the greatest level of participation for decision issues on resources (such as faculty selection, evaluation, promotion, salary, and budget). Faculty appear to have the greatest level of participation for decision issues on curriculum and student performance. Administrators and faculty share the same level of participation for decision issues on teaching assignments, committee membership, student selection, and academic discipline. In general, students are in the lowest level of participation for all issues except faculty evaluation and curriculum.
TABLE III

LEVEL OF PARTICIPATION IN DECISION-MAKING BY NURSING SCHOOL ADMINISTRATORS, PREDOMINANT FACULTY DECISION MAKER, AND STUDENTS FOR TWENTY DECISION ISSUES

<table>
<thead>
<tr>
<th>Issue</th>
<th>Mean Scores for Level of Participation*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Administrator</td>
</tr>
<tr>
<td>Faculty selection</td>
<td>2.43</td>
</tr>
<tr>
<td>Faculty evaluation</td>
<td>2.82</td>
</tr>
<tr>
<td>Faculty promotion</td>
<td>2.18</td>
</tr>
<tr>
<td>Salary of individual members</td>
<td>2.10</td>
</tr>
<tr>
<td>Budget</td>
<td>2.45</td>
</tr>
<tr>
<td>Faculty teaching assignment</td>
<td>1.90</td>
</tr>
<tr>
<td>Selection of subunit heads</td>
<td>2.00</td>
</tr>
<tr>
<td>Faculty teaching load</td>
<td>2.00</td>
</tr>
<tr>
<td>Nursing faculty membership on university committees</td>
<td>1.48</td>
</tr>
<tr>
<td>Membership on nursing school committees</td>
<td>1.85</td>
</tr>
<tr>
<td>Chairpersons of nursing school committees</td>
<td>1.42</td>
</tr>
<tr>
<td>Requirements for admission to nursing major</td>
<td>1.50</td>
</tr>
<tr>
<td>Nursing curriculum</td>
<td>1.48</td>
</tr>
<tr>
<td>Establishment of new programs in nursing schools</td>
<td>1.85</td>
</tr>
<tr>
<td>Course content</td>
<td>1.10</td>
</tr>
<tr>
<td>Degree requirements for nursing major</td>
<td>1.50</td>
</tr>
<tr>
<td>Teaching and testing methodology</td>
<td>.72</td>
</tr>
<tr>
<td>Selection of students for nursing school</td>
<td>1.40</td>
</tr>
<tr>
<td>Academic discipline of students</td>
<td>1.60</td>
</tr>
<tr>
<td>Student performance</td>
<td>.65</td>
</tr>
</tbody>
</table>

*The continuum is from 0 - .99 = no participation to advice (input) only; 1 - 1.99 advice (input) only to makes recommendations; 2 - 2.99 = makes recommendations to makes decision; 3 = makes decision.
The third research question deals with the relationships between the organizational characteristics of nursing schools and the success rate of their students on the licensure examination. The fourth research question concerns the relationships between the organizational characteristics and success rate of students on the licensure examination when the schools are grouped according to region, control, academic requirements for entry, and level of success rate.

Table IV presents data about the relationship between the various organizational characteristics of the responding schools and success rate of their students on the licensure examination. These data refer to the total group of schools, by the demographic variables, and by levels of success rate. Variations in the total number of responses occur because all respondents did not answer all questions on the survey questionnaire.

Only a few statistically significant relationships are noted among the various organizational characteristics and success rate on the licensure examination. It should be noted that the significant positive relationship between faculty-student ratio and success rate becomes small and
### Table IV

**RELATIONSHIPS BETWEEN ORGANIZATIONAL CHARACTERISTICS AND SUCCESS RATE IN NURSING SCHOOLS**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Total Group (N=37)</th>
<th>Midwest (N=22)</th>
<th>Southern (N=18)</th>
<th>Public (N=20)</th>
<th>Private (N=20)</th>
<th>Academic Requirements</th>
<th>Level of Success Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>One or More High School Years of College</td>
<td>Upper Level (N=14)</td>
</tr>
<tr>
<td>GPA required to progress to upper division</td>
<td>0.19</td>
<td>0.37</td>
<td>0.30</td>
<td>0.17</td>
<td></td>
<td>0.07</td>
<td>0.20</td>
</tr>
<tr>
<td>Per cent of upper division enrollment completing the program</td>
<td>-0.27</td>
<td>-0.17</td>
<td>-0.51</td>
<td>-0.12</td>
<td>-0.45</td>
<td>-0.40</td>
<td>-0.26</td>
</tr>
<tr>
<td>Size of faculty</td>
<td>0.25</td>
<td>0.40</td>
<td>0.16</td>
<td>0.33</td>
<td>0.04</td>
<td>0.23</td>
<td>0.35</td>
</tr>
<tr>
<td>Number of faculty who have doctorates</td>
<td>0.09</td>
<td>0.25</td>
<td>0.10</td>
<td>0.24</td>
<td>-0.12</td>
<td>0.25</td>
<td>0.10</td>
</tr>
<tr>
<td>One-degree program (BS)</td>
<td>-0.27</td>
<td>-0.25</td>
<td>-0.23</td>
<td>-0.03</td>
<td>-0.18</td>
<td>-0.28</td>
<td>-0.20</td>
</tr>
<tr>
<td>Two-degree program (BS, MS)</td>
<td>0.16</td>
<td>0.09</td>
<td>0.17</td>
<td>0.09</td>
<td>0.12</td>
<td>0.23</td>
<td>0.02</td>
</tr>
<tr>
<td>Number of administrative levels between faculty and dean</td>
<td>-0.12</td>
<td>-0.15</td>
<td>0.01</td>
<td>0.19</td>
<td>-0.55</td>
<td>-0.19</td>
<td>0.06</td>
</tr>
</tbody>
</table>
TABLE IV--Continued

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Total Group (N=37)</th>
<th>Midwest (N=22)</th>
<th>Southern (N=18)</th>
<th>Public (N=20)</th>
<th>Private (N=19)</th>
<th>Academic Requirements</th>
<th>Level of Success Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>One or More High School Years of College</td>
<td>Upper Level (N=14)</td>
</tr>
<tr>
<td>Number of subunit heads reporting to dean</td>
<td>0.03</td>
<td>0.02</td>
<td>0.08</td>
<td>-0.22</td>
<td>0.02</td>
<td>0.02</td>
<td>-0.20</td>
</tr>
<tr>
<td>Extent of faculty participation in decision making</td>
<td>-0.26</td>
<td>-0.12</td>
<td>-0.41</td>
<td>-0.36</td>
<td>-0.14</td>
<td>-0.21</td>
<td>-0.29</td>
</tr>
<tr>
<td>Faculty-student ratio</td>
<td>0.39</td>
<td>0.10</td>
<td>0.28</td>
<td>0.05</td>
<td>0.14</td>
<td>0.16</td>
<td>0.21</td>
</tr>
<tr>
<td>Region</td>
<td>-0.10</td>
<td>.</td>
<td>.</td>
<td>0.15</td>
<td>-0.01</td>
<td>0.15</td>
<td>-0.17</td>
</tr>
<tr>
<td>Control</td>
<td>0.21</td>
<td>0.34</td>
<td>0.19</td>
<td>.</td>
<td>.</td>
<td>0.24</td>
<td>0.29</td>
</tr>
<tr>
<td>Academic requirements for entry into program</td>
<td>-0.09</td>
<td>0.13</td>
<td>-0.18</td>
<td>.</td>
<td>.</td>
<td>.</td>
<td>.</td>
</tr>
</tbody>
</table>


**Significant at level of 0.05 or better.
nonsignificant when the schools are grouped demographically and according to level of success rate.

The negative direction of the relationship between the percentage of upper-division enrollment students who complete the program and success rate indicates that as the percentage increases the success rate decreases. This relationship is important for both the southern region and private schools, with statistically significant Pearson correlation coefficients of -0.51 and -0.45 respectively. In addition, the correlation coefficient of -0.57 for lower-level success rate schools barely misses the accepted level of significance, with a $p = 0.052$, and thus the relationship between percentage of upper-division enrollment students who complete the program and success rate also might be considered important for these schools.

Although the relationship between number of faculty with doctorates and success rate is small and nonsignificant for the total group of schools, the relationship is greater and significant for middle success rate schools. A similar pattern occurs between control and success rate; the Pearson correlation coefficient for these two variables for the total group of schools is small and nonsignificant. However, for the middle-level success rate group, the correlation coefficient is larger and significant. This relationship indicates that when middle-level success rate
schools are also public-supported, their success rate on the licensure examination is higher.

Finally, although a significant relationship exists between the variable of number of administrative levels between faculty and dean and success rate in private schools, the relationship is small and nonsignificant in the total group of schools. The negative direction of the relationship indicates that as the number of administrative levels increases, the success rate decreases.

Interrelationships among the Organizational Characteristics of Nursing Schools

The fifth research question deals with the relationships among the various organizational characteristics of the nursing schools. The sixth research question is also concerned with the relationships among the various characteristics when the schools are grouped demographically and by level of success rate.

Table V presents data regarding the number of interrelationships among the various organizational characteristics for the total group of nursing schools and as groups by demographic and level of success rate variables. These data are presented to identify those organizational characteristics that are more useful in understanding the organizational nature of the schools.

Certain variables seem to be more useful in describing the organizational nature of the schools upon the basis of
<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Total Group (N=37)</th>
<th>Midwest (N=23)</th>
<th>Southern (N=18)</th>
<th>Public (N=20)</th>
<th>Private (N=29)</th>
<th>Academic Requirements</th>
<th>One or More Years of College</th>
<th>Upper Level (N=21)</th>
<th>Middle Level (N=14)</th>
<th>Lower Level (N=12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPA required to progress to upper division</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Per cent of upper division enrollment completing the program</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Size of faculty</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>5</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Number of faculty who have doctorates</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>One-degree program (BS)</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>5</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Two-degree program (MS)</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Number of administrative levels between faculty and dean</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>
TABLE V--Continued

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Total Group (N=37)</th>
<th>Midwest (N=22)</th>
<th>Southern (N=18)</th>
<th>Public (N=20)</th>
<th>Private (N=20)</th>
<th>High School (N=19)</th>
<th>One or More Years of College (N=21)</th>
<th>Upper Level (N=14)</th>
<th>Middle Level (N=14)</th>
<th>Lower Level (N=12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of subunit heads reporting to dean</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>1</td>
<td>5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Extent of faculty participation in decision making</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Faculty-student ratio</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Region</td>
<td>0</td>
<td>.</td>
<td>.</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Control</td>
<td>6</td>
<td>4</td>
<td>1</td>
<td>.</td>
<td>.</td>
<td>1</td>
<td>3</td>
<td>5</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Academic requirements for entry into program</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>.</td>
<td>.</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

the interrelationships among the variables. Size of faculty, number of faculty who have doctorates, one-degree program, and control are all interrelated; the one-degree program relationships relate in a negative direction. In addition, number of faculty who have doctorates is related to number of subunits whose heads report to the dean, and the one-degree program is related to faculty participation in decision-making. Also, control has additional relationships with two-degree programs, number of administrative levels between faculty and the dean, and the number of subunits whose heads report to the dean.

When the schools are categorized by region, similar interrelationships are noted for size, number of faculty who have doctorates, and one-degree program. However, the variable control shows similar relationships only for the midwest region schools. In the southern schools, control has a relationship with only the number of administrative levels between the faculty and dean.

When the schools are categorized by control, similar relationships are seen only in private schools. In public-support schools, size of faculty is related only to number of faculty who have doctorates, and the few other interrelationships noted are dissimilar to those previously discussed.

When the schools are categorized by academic requirements, there are similar interrelationships for size of faculty, number of faculty who have doctorates, and one-degree
program. For the control variable, however, few relationships are noted. Control is related with size in both groups, and with number of faculty who have doctorates and one-degree program in only the schools requiring one or more years of college for entry into the program.

When the schools are categorized by level of success rate, similar interrelationships are noted for the same four variables. The interrelationships for the control variable are seen only in the upper-level success rate schools except for its relationship with one-degree program; this relationship is seen also in the lower-level success rate schools. Correlation matrices that show all of the specific interrelationships are presented in Appendix G.

The Relationship between the Combined Characteristics of Nursing Schools and Success Rate

Research question seven deals with the relationship between the combined organizational characteristics of the nursing schools and success rate on the licensure examination. Of interest is the extent to which success rate is influenced by the organizational characteristics.

Table VI includes data from the regression analysis for success rate regarding the independent variables included in the equation. Included in the table are the independent variables reflecting the particular organizational characteristics, the multiple correlation (R) for all preceding variables entered into the equation, R square
TABLE VI
REGRESSION ANALYSIS FOR SUCCESS RATE AND SIGNIFICANT ORGANIZATIONAL CHARACTERISTICS

<table>
<thead>
<tr>
<th>Organizational Characteristics (N=37)</th>
<th>Multiple R</th>
<th>R Square</th>
<th>B</th>
<th>Beta</th>
<th>Standard Error</th>
<th>Degrees of Freedom</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty-student ratio</td>
<td>0.3915</td>
<td>0.1522</td>
<td>2.2028</td>
<td>0.5079</td>
<td>0.6421</td>
<td>1</td>
</tr>
<tr>
<td>Percentage of upper division enrollment completing the program</td>
<td>0.5595</td>
<td>0.3131</td>
<td>-0.0495</td>
<td>-0.4164</td>
<td>0.0176</td>
<td>2</td>
</tr>
<tr>
<td>Constant</td>
<td></td>
<td></td>
<td>126.5356</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at 0.002.
(the percentage of variance explained by all preceding variables entered into the equation), partial correlation coefficients (B) that may be used as measures of the influence of each independent variable, Beta (the standardized correlation coefficient for each independent variable), the standard error for each independent variable, and the F ratio for each independent variable.

Only two organizational characteristics, faculty-student ratio and the percentage of the upper-division enrollment completing the program, have a significant influence on success rate. Together they account for 31 percent of the variance in success rate. Although the Beta values for the two variables are relatively close, faculty-student ratio has a slightly stronger influence. In addition, faculty-student ratio has a positive influence, while the percentage of the upper-division enrollment completing the program has a negative influence.

Since the only variables which were considered for inclusion in the equation are those with a $F$-ratio of three or more, most of the organizational characteristics of the nursing school are not included. Table VIII includes data from the regression analysis regarding the independent variables that were nonsignificant and, therefore, not included in the equation after the second step. Included in the table are the independent variables (the organizational characteristics), Beta (the standardized correlation
### TABLE VII
ORGANIZATIONAL CHARACTERISTICS OF NURSING SCHOOLS
NOT INCLUDED IN THE REGRESSION EQUATION

<table>
<thead>
<tr>
<th>Organizational Characteristic</th>
<th>Beta</th>
<th>Partial Coefficient</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of administrative levels between faculty and dean</td>
<td>0.0492</td>
<td>0.0563</td>
<td>0.105</td>
</tr>
<tr>
<td>Number of subunit heads reporting to dean</td>
<td>-0.0700</td>
<td>-0.0831</td>
<td>0.105</td>
</tr>
<tr>
<td>One-degree program (BS)</td>
<td>-0.1402</td>
<td>-0.1638</td>
<td>0.910</td>
</tr>
<tr>
<td>Two-degree program (MS)</td>
<td>0.0373</td>
<td>0.0433</td>
<td>0.062</td>
</tr>
<tr>
<td>Control</td>
<td>0.0718</td>
<td>0.0818</td>
<td>0.222</td>
</tr>
<tr>
<td>Size of faculty</td>
<td>0.1387</td>
<td>0.1621</td>
<td>0.890</td>
</tr>
<tr>
<td>Grade point average required to progress to upper division</td>
<td>0.1295</td>
<td>0.1554</td>
<td>0.817</td>
</tr>
<tr>
<td>Number of faculty with doctorates</td>
<td>0.0725</td>
<td>0.0870</td>
<td>0.252</td>
</tr>
<tr>
<td>Region</td>
<td>-0.0207</td>
<td>-0.0246</td>
<td>0.020</td>
</tr>
<tr>
<td>Academic requirements for entry into program</td>
<td>0.0371</td>
<td>0.0435</td>
<td>0.062</td>
</tr>
<tr>
<td>Extent of faculty participation in decision making</td>
<td>-0.0586</td>
<td>-0.0657</td>
<td>0.143</td>
</tr>
</tbody>
</table>
coefficient for each independent variable), the partial correlation coefficients (which may be used as measures of the influence of each independent variable), and the F ratio for each independent variable.

For each independent variable, the Beta is relatively small, and the F ratio is insufficient for further computation. Although relatively small and insignificant, the Betas for one-degree program (BS), size of faculty, and grade-point average required to progress to upper division are substantially larger than for the other variables.

Summary of Data Findings

The following important data findings are reported in this chapter:

1. The organizational profile of the nursing schools is as follows:

   a. The schools are either in the midwest or southern regions; the entry requirements are either high school graduation only or one or more years of college; the schools are supported by either public or private funds.

   b. A 2.32 grade-point average is required to progress to the upper division, and 46 per cent of the upper-division enrollment complete the nursing program.


c. The faculty size is 27, 6 of whom (22%) have doctorates; the faculty-student ratio is 1:11.

d. Slightly more than 50 per cent of the schools have more than one degree program; there is one administrative level between the faculty and the dean; there are four subunits whose heads report to the dean.

e. In general, faculty participate in decision-making at the advice (input) only level on twenty decision issues; however, faculty participate at a higher level (make recommendations) for issues on curriculum and student performance, while administrators participate at a higher level for issues regarding resources. The mechanism for faculty participation differs for the various decision issues, with faculty-as-a-whole and individual faculty each being the predominant mechanism for eight decision issues.

f. The success rate on the licensure examination is 88.48 per cent.

2. In relation to the profile of the organizational characteristics of the total group of schools, the following comparisons are made for the schools as various subgroups:

a. The subgroups of midwest, public-supported, and upper-level success rate schools have a higher
GPA requirement for progression to the upper division. The other subgroups have lower GPA requirements except for those schools that require one or more years of college for entry; this subgroup has the same GPA requirement as the total group of schools.

b. For the upper-level success rate schools, the percentage of upper-division enrollment that completes the program is lower, while for the lower-level success rate schools, it is higher.

c. Public-supported and upper-level success rate schools have the greater number of members, while southern, private, and lower-level success rate schools have fewer faculty members. Public-supported schools employ a higher percentage of faculty who have doctorates, while this percentage is lower for schools requiring high school graduation only for entry, private schools, and lower-level success rate schools. Upper-level success rate schools have fewer students per faculty member, while lower-level success rate schools have a higher faculty-student ratio.

d. Southern, private, and lower-level success rate schools have only one degree program.

e. Although faculty in all schools participate in decision-making at the advice (input) only level, public-supported and upper-level success rate schools participate to a lesser extent within that level,
while private and lower success rate schools participate to a greater extent.

f. Public-supported schools have a higher success rate.

3. For the total group of schools, the only statistically significant relationship among the organizational characteristics and success rate is for faculty-student ratio.

4. Although the relationships among all the other organizational characteristics and success rate are small and statistically non-significant, several are inverse. Negative correlations were found between success rate and the percentage of upper division enrollment completing the program, the number of schools with one degree program, the number of administrative levels between faculty and the dean, the level of faculty participation in decision-making, location in the midwest region, and the requirement of high school graduation only for entry into the nursing program.

5. For the schools as subgroups, there are some statistically significant relationships among the organizational characteristics and success rate. For middle-level success rate schools, success rate is positively correlated with the number of faculty who have doctorates and with public control. For southern and private schools, there is a negative correlation with the percentage of
upper-division enrollment completing the program. For private schools, there is a negative correlation with the number of administrative levels between faculty and the dean.

6. Certain variables seem to be useful in describing the organizational nature of the nursing schools on the basis of the number and types of the interrelationships among the variables. Size of faculty, number of faculty with doctorates, one-degree program, and control are all interrelated with each other, as well as with various other variables. For the schools categorized as subgroups, the interrelationships are similar for these variables with some exceptions. Control has relatively few interrelationships with the other variables when the schools are categorized by academic requirements. Only one relationship is noted for control in southern schools—-with the number of administrative levels between the faculty and dean. When the schools are categorized by control, only a few scattered interrelationships among any of the variables are seen in public-supported schools. One of these relationships is between size and number of faculty who have doctorates.

7. The combination of faculty-student ratio and percentage of upper-division enrollment completing the program has a statistically significant relationship with success rate. These two variables combined explain 31 per cent of the variance in success rate. Faculty-student ratio has a positive and slightly stronger influence on success rate,
while the percentage of upper-division enrollment students who complete the program has a negative and less strong influence.
CHAPTER V

SUMMARY, DISCUSSION OF DATA FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS FOR FUTURE RESEARCH

This chapter presents a summary of the study—its problem, purposes, research questions, survey method, statistical procedures, and data findings. A discussion of the data findings is also presented. In addition, conclusions based upon the data findings are included along with the implications of the findings. Finally, recommendations are made for further study.

Summary

The problem with which this study was concerned is an analysis of the relationship of the organizational setting to success rate on the licensure examination in forty nursing schools or divisions that offer a baccalaureate degree. The purposes of the study were twofold. The first was to develop a profile of the organizational setting of the typical nursing school or division that offers a baccalaureate degree. The second purpose was to contribute to organizational theory regarding the nature of the organizational setting and its influence on organizational outcomes which form the basis for planning.
decisions concerning nursing schools or divisions in institutions of higher education.

To fulfill the purposes of this study, answers to the following research questions were sought:

1. What are the specific organizational characteristics of the typical nursing school that offers a baccalaureate degree?

2. What are the specific organizational characteristics of the typical nursing school when schools are grouped according to region, control, academic requirements, and level of success rate on the licensure examination?

3. To what extent do the characteristics of the organizational setting of nursing schools relate to success rate on the licensure examination?

4. To what extent do the characteristics of the organization relate to success rate on the licensure examination when nursing schools are grouped according to region, control, academic requirements, and level of success rate on the licensure examination?

5. What are the relationships among the various aspects of the organizational setting of nursing schools?

6. What are the relationships among the various aspects of the organizational setting of nursing schools when the schools are grouped by region, control, academic requirements, and level of success rate on the licensure examination?
7. To what extent do the combined aspects of the organizational setting of nursing schools relate to success rate on the licensure examination?

The population for the study consists of 109 nursing schools in fifteen states in the midwest and southern regions of the United States. The study sample consists of forty nursing schools. The questionnaire that was utilized to collect data consists of four parts, each of which contains items that relate to a particular aspect of the organizational setting of nursing schools. Although all forty questionnaires were usable, not all were usable to answer all research questions.

Data pertaining to the first two research questions were analyzed by descriptive statistics. Data pertaining to the next four research questions were analyzed by determining Pearson correlation coefficients, using \( p < 0.05 \) as the level of significance. Data regarding the last research question were analyzed by multiple regression analysis, using \( p < 0.05 \) as the level of significance.

The following important data findings are reported in this chapter:

1. The organizational profile of the nursing schools is as follows:

   a. The schools are either in the midwest or southern regions; the entry requirements are either high school graduation only or one or more years of
college; the schools are supported by either public or private funds.

b. A 2.32 grade-point average is required to progress to the upper division, and 46 per cent of the upper-division enrollment complete the nursing program.

c. The faculty size is 27, 6 of whom (22%) have doctorates; the faculty-student ratio is 1:11.

d. Slightly more than 50 per cent of the schools have more than one degree program; there is one administrative level between the faculty and the dean; there are four subunits whose heads report to the dean.

e. In general, faculty participate in decision-making at the advice (input) only level on twenty decision issues; however, faculty participate at a higher level (make recommendations) for issues on curriculum and student performance, while administrators participate at a higher level for issues regarding resources. The mechanism for faculty participation differs for the various decision issues, with faculty-as-a-whole and individual faculty each being the predominant mechanism for eight decision issues.

f. The success rate on the licensure examination is 88.48 per cent.
2. In relation to the profile of the organizational characteristics of the total group of schools, the following comparisons are made for the schools as various subgroups:

   a. The subgroups of midwest, public-supported, and upper-level success rate schools have a higher GPA requirement for progression to the upper division. The other subgroups have lower GPA requirements except for those schools that require one or more years of college for entry; this subgroup has the same GPA requirement as the total group of schools.

   b. For the upper-level success rate schools, the percentage of upper-division enrollment that completes the program is lower, while for the lower-level success rate schools, it is higher.

   c. Public-supported and upper-level success rate schools have the greater number of members, while southern, private, and lower-level success rate schools have fewer faculty members. Public-supported schools employ a higher percentage of faculty who have doctorates, while this percentage is lower for schools requiring high school graduation only for entry, private schools, and lower-level success rate schools. Upper-level success rate schools have fewer students per faculty member, while lower-level success rate schools have a higher faculty-student ratio.
d. Southern, private, and lower-level success rate schools have only one degree program.

e. Although faculty in all schools participate in decision-making at the advice (input) only level, public-supported and upper-level success rate schools participate to a lesser extent within that level, while private and lower success rate schools participate to a greater extent.

f. Public-supported schools have a higher success rate.

3. For the total group of schools, the only statistically significant relationship among the organizational characteristics and success rate is for faculty-student ratio.

4. Although the relationships among all the other organizational characteristics and success rate are small and statistically non-significant, several are inverse. Negative correlations were found between success rate and the percentage of upper division enrollment completing the program, the number of schools with one degree program, the number of administrative levels between faculty and the dean, the level of faculty participation in decision-making, location in the midwest region, and the requirement of high school graduation only for entry into the nursing program.
5. For the schools as subgroups, there are some statistically significant relationships among the organizational characteristics and success rate. For middle-level success rate schools, success rate is positively correlated with the number of faculty who have doctorates and with public control. For southern and private schools, there is a negative correlation with the percentage of upper-division enrollment students who complete the program. For private schools, there is a negative correlation with the number of administrative levels between faculty and the dean.

6. Certain variables seem to be useful in describing the organizational nature of the nursing schools on the basis of the number and types of the interrelationships among the variables. Size of faculty, number of faculty who have doctorates, one-degree program, and control are all interrelated with each other and with various other variables. For the schools categorized as subgroups, the interrelationships are similar for these variables with some exceptions. Control has relatively few interrelationships with the other variables when the schools are categorized by academic requirements. Only one relationship is noted for control in southern schools--with the number of administrative levels between the faculty and the dean. When the schools are categorized by control, only a few scattered
interrelationships among any of the variables are seen for public-support schools. One of these relationships is between size and number of faculty who have doctorates.

7. The combination of faculty-student ratio and percentage of upper-division enrollment students who complete the program has a statistically significant relationship with success rate. These two variables combined explain 31 per cent of the variance in success rate. Faculty-student ratio has a positive and slightly stronger influence on success rate, while the percentage of upper-division enrollment students who complete the program has a negative and less strong influence.

Discussion of Data Findings

The findings regarding some of the organizational characteristics of the nursing schools may be discussed in relation to comparable findings in other studies. The following discussion concerns the findings regarding the nursing school characteristics of success rate, the percentage of upper-division enrollment students who complete the program, and faculty-student ratio. In addition, the findings regarding faculty size and faculty qualifications as well as faculty participation in decision-making are discussed. Finally, the interrelationships among the organizational characteristics of the schools are discussed.
The mean success rate on the licensure examination is within the same general range for the total group of schools and for the various subgroups. However, the success rates for schools in the midwest and southern regions is of interest. Their mean success rates are essentially the same at 88.48 and 88.47 per cent. Schwirian's (18, p. 164) findings indicate that the graduates of midwest schools achieve higher grades on the licensure examination than do graduates of southern schools. Although the current study examines the results of the licensure examination in a different way, the findings do not seem to support those of the regional differences in the Schwirian study. However, the negative correlation coefficient (-0.11) for region and success rate, although small and statistically nonsignificant, might be considered to suggest the possibility that the success rate is lower for schools in the southern region. A larger sample might provide data that would clarify the relationship between region and success rate.

Considering neither expansion or dropouts, Blau (4, p. 128) suggests that the assumed completion rate of four-year collegiate programs would be 25 per cent—the number of bachelor degrees divided by the undergraduate enrollment. For the present study it was assumed that (with no expansion or dropouts) the percentage of the upper division enrollment completing the nursing program would
be 50 per cent. The finding that 46 per cent do complete the program suggests that the remaining 4 per cent may be explained by expansion or dropouts. However, no direct comparison may be made to Blau's findings, which relate to all four years of college study, since the findings of this study relate to only the last two years; it seems likely, however, that the majority of expansion and dropouts would occur prior to the last two years of a four-year program.

The net retention rate reported for two-year baccalaureate nursing programs is 83 per cent for both the midwest and southern regions and 87 per cent for all regions (13, p. 76). These data are described as representative of the percentage of students remaining with the original cohort and those who joined at various stages; thus, 17 per cent are not retained. Although the findings of the current study do not directly demonstrate retention rate, the 4 per cent of the upper-division enrollment not completing the program may be indicative of either a greater retention rate for the schools in the study or a greater number of students moving in and out of the programs.

Although for the total group of schools there is a small, nonsignificant, and inverse relationship between the percentage of upper-division enrollment completing the program and success rate on the licensure examination, the finding of a significant inverse relationship between the
two variables for southern and private schools is of interest. It indicates that as the percentage completing the program increases, the success rate decreases. In addition, for lower-level success rate schools, the correlation coefficient of \( -0.57 \) is significant at \( p = 0.052 \) and therefore might possibly be considered as significant data. It is also of interest to note that only for upper- and middle-level success rate schools are there positive relationships between the two variables, although these relationships also are small and non-significant. It might be that because some schools have less rigid course standards, students who complete the program are not likely to be successful on the licensure examination and thus lower the school's success rate. It must be recognized also that a larger sample size might provide further clarification.

The mean of eleven students per teacher in the nursing schools compares with the findings of Margulies and Blau (10, p. 27). However, the reported mean of 46.1 for the classroom setting differs from the mean of 17.2 reported in the 1980 nursing school survey (13, p. 104). The differences in the findings may be related to differences in data collection or may reflect the variations in nursing faculty assignments (such as team teaching, teaching only in the classroom or clinical setting, or teaching in both settings). Another factor that might provide additional clarification is the fact that teachers often
teach the same group of students in more than one nursing course.

Blau (4, p. 222) found a negative relationship between faculty-student ratio and rate of college competition, and he perceives college completion as a measure of student progress. The current study suggests that a passing score on the licensure examination is a mark of student progress and thus a measure of the performance of the school. The findings show a positive and significant relationship between faculty-student ratio and success rate. Although the ratios between numbers of faculty and students are measured differently in the two studies, the findings are similar. The smaller the teacher load in relation to numbers of students, the greater the progress of the student, whether it is measured by completion of the college program or by a passing score on a licensure examination.

Although faculty-student ratio is the only variable that has a statistically significant relationship with success rate, the percentage of the upper-division enrollment completing the program has the second largest correlation coefficient with success rate ($r = -0.28$). Also, the regression analysis shows that both these variables have a statistically significant multiple influence upon success rate. Apparently a high faculty-student ratio enhances the success rate, while a high completion rate inhibits it. The explanation might be that although there
are students in the upper-division level of the program who are likely to fail the licensure examination, this influence may be overshadowed by the stronger one of close contact between faculty and students, which enhances the likelihood that a greater number of students not only complete the program but also pass the licensure examination. This relationship of the percentage of the upper-division enrollment completing the program to success rate on the licensure examination is not apparent until faculty-student ratio is taken into account. Also, a larger sample size might clarify the relationship between the two variables.

The mean faculty size of 27 is somewhat comparable to the mean of 25 calculated from the 1980 survey of nursing schools (13, p. 94). The mean of six (22 per cent) faculty who have doctorates differs substantially from the mean of 38.39 per cent found by Blau (4, p. 287) in his study of colleges and universities and from the 13.4 per cent reported in the 1980 nursing school survey for all regions (13, p. 98). It is difficult to account for the discrepancy between the findings regarding faculty qualifications in the current study and in the 1980 survey (13) since the data were collected within the same year. Factors that might be considered as influential are the time of the year at which the questionnaire was completed, differences in
the interpretation of the question by the respondents, the method of sampling, and the size of the sample.

The finding of a positive but nonsignificant relationship between faculty qualifications and success rate indicates support for a similar finding in the Behm and Warnock (3, p. 55) study of the relationship between effectiveness ratings and state board examination scores. In the Behm and Warnock study, one of the criteria for rating effectiveness is faculty qualifications.

Blau (4, p. 224) found that faculty qualifications are related to student progress. Baldridge and his colleagues (2, p. 381) found that those institutions that have the greater number of faculty who hold doctorates are in the upper end of their typology of educational institutions. Therefore, the findings of the current study cannot be said to be congruent with those in these two studies. However, a larger sample size might provide further clarification of the findings.

The finding of faculty participation in decision-making at the advice (input) only level differs from the finding reported in the AAUP survey (1, p. 69) that faculty participate at the consultation level. Also, this finding is not congruent with the view of Mortimer, Gunne, and Leslie (11, p. 275) that the faculty is considered the dominant decision-maker in educational institutions. In addition, the low faculty participation level may be
considered a reflection of the traditionally authoritarian nature of the setting in which nurses have been educated and in which they practice their profession. The finding that faculty participation is higher for certain decision areas—curriculum matters and admission and degree requirements—supports those of previous studies that indicate that faculty participation tends to be higher for academically oriented matters and lower for institutionally oriented ones regarding resource and authority allocations (7, p. 34; 8, p. 133; 11, p. 281). The finding that the participation of the administrative head for fifteen out of the twenty decision issues is at or below the advice (input) only level suggests that the actual decision-making across all decision issues in general is made at some point in the academic setting which is beyond the school of nursing. This suggests congruency with Blau's (4, p. 288) findings that 35 per cent of the faculty feel that the board of trustees has substantial influence in the formulation of educational policy.

Blau and Schoenherr (5, pp. 166-170, 202) found in government agencies that organizational characteristics are interdependent, with internal characteristics predominant over external ones and with size having the broadest scope of influence. In contrast, the findings in the current study show that for public-supported nursing schools, there are relatively few interrelationships among
the characteristics. For the total group of schools, control, an external characteristic, has six interrelationships while size has three.

The findings regarding control may be compared to those in other related studies, although it is recognized that the research design and variable definitions differ. Holdaway and others (9, p. 50) found that schools which have greater governmental control also have a greater degree of bureaucratization in terms of regulation and structure. Pugh and his associates (15, p. 92) in the Aston studies found no relationship between public accountability and structuring of activities. The findings in the current study show a relationship between control and structural characteristics such as the number of degree programs, the number of administrative levels between faculty and the dean, and the number of subunits whose heads report to the dean. Another study (12, p. 11) considers ownership to be a factor that influences problems of resources such as faculty, funds, and facilities. Blau (4, p. 174) found that faculty are less qualified in private religious institutions. In the current study, there is a relationship between control and faculty qualifications, which indicate that public-supported nursing schools have more qualified faculty.

Blau (4, p. 175) found less faculty influence on appointments in private religious schools. Ross (17, p.
found that public institutions allow more faculty influence regarding faculty appointments. The AAUP study (1, p. 68) found no relationship between control and faculty participation. In the current study, the correlation coefficient for control and faculty participation in decision-making is inverse but quite low. Statistical examination of faculty participation for each decision issue was not carried out in the current study, although the mean score for faculty participation for all decision issues is greater for private schools than for public ones. A larger population sample might provide data to clarify further the relationship between control and faculty participation in decision-making.

Rodgers and Elton (16, p. 242) found that private medical schools are more selective than public ones. Although the current study did not find a statistically significant relationship between control and selectivity (measured as the GPA required to progress to the upper division), the slightly higher requirement for public-supported schools and the positive direction of the correlation coefficient for the two variables suggest that the findings do not support those of the Rodgers and Elton study.

In academic institutions, Blau (4, p. 252) found that size is correlated with three aspects of differentiation—number of departments, major academic subunits, and
administrative levels. In contrast, the findings in the current study found small and statistically nonsignificant relationships between size and two measures of differentiation—the number of administrative levels between faculty and the dean and the number of subunits whose heads report to the dean. However, if the number of degree programs in nursing schools were considered to be an aspect of differentiation, the findings might compare to a limited extent to those of Blau, since the inverse relationship between size and one-degree programs indicates that as size increases, the one-degree program characteristic decreases.

According to Child (6, p. 3) and Pennings (14, p. 405), structure design is one of the major influences on the function and effectiveness of an organization. In comparison, in the present study for both upper- and lower-level success rate schools, there is a large number of interrelationships for those organizational characteristics related to structure design (one-degree program, two-degree program, the number of administrative levels between the faculty and the dean, and the number of subunits whose heads report to the dean). This finding suggests that structure design may not be a major influence on success rate in nursing schools.

There appear to be a number of interrelationships among the various organizational characteristics of the nursing schools. However, caution must be used in interpreting
these data without further analysis since at a .05 level of significance, one can expect that 5 per cent of the total number of statistically significant relationships will occur by chance only.

Conclusions

On the basis of the data findings, the following conclusions appear to be warranted.

1. A high percentage of students who complete the program in nursing does not assure a high success rate on the licensure examination.

2. A more academic orientation in the nursing schools seems to assure a higher success rate.

3. A low level of faculty participation in decision-making does not prevent the schools from being productive and successful.

4. The more successful nursing schools have closer faculty-student contact.

5. Relatively close contact between faculty and the dean may be necessary for a satisfactory success rate on the licensure examination in some of the nursing schools.

6. Size of faculty, the number of faculty who have doctorates, the number of degrees offered, and control are important organizational characteristics of the nursing schools.
7. There are additional factors that are unaccounted for which may influence nursing schools' success rate on the licensure examination.

Implications

Following are implications that relate to administrative planning in nursing schools which are derived from this study.

1. There is a need for administrators to examine and place in order of priority the various organizational characteristics of nursing schools (within the constraints of supply and demand, cost, financial control, accreditation, and availability of resources) in order to make judgments for needed changes.

2. There is a potential for conflict between faculty and administration as well as for morale problems to develop that might influence faculty performance and thus organizational performance of the nursing schools.

3. The organizational setting should be one wherein students have the greatest contact and interchange with the faculty members who have terminal degrees. This might increase the likelihood of attracting more qualified faculty and students, as well as the likelihood of maintaining a high success rate on the licensure examination.

4. Administrative planners need to consider which characteristics seem to be more prevalent in certain types
of nursing schools and what organizational arrangements seem to be more effective.

5. Nursing school administrators should examine the faculty-student ratio of 1:11 in the light of the schools' success rates on the licensure examination.

6. Nursing school policies that are related to the progression of students through the program should be analyzed in terms of the findings.

Recommendations for Future Research

Following are recommendations for future study.

1. This study should be replicated using a larger sample, schools from all four regions of the United States, and additional measures of organizational performance.

2. There should be an investigation of both the formal and informal characteristics of the organizational setting of nursing schools and their relationships to success rate on the licensure examination.

3. There should be further investigation of the faculty-student ratio in nursing schools and its significance for organizational performance.

4. A comparative study should be made of the organizational setting of nursing schools with other professional schools that offer baccalaureate degrees.

5. There should be a comparative study of the organizational setting of various schools that offer baccalaureate
degrees in preparation for professional licensure or certification.

6. An investigation should be made of the difference, if any, in the organizational setting between schools that offer only the baccalaureate degree and those that also offer advanced degrees in nursing.


### Midwest and Southern Region States as Defined by the National League for Nursing

#### Midwest Region
- Illinois
- Indiana
- Iowa
- Kansas
- Michigan
- Minnesota
- Missouri
- Nebraska
- North Dakota
- Ohio
- South Dakota
- Wisconsin

#### Southern Region
- Alabama
- Arkansas
- Florida
- Georgia
- Kentucky
- Louisiana
- Maryland
- Mississippi
- North Carolina
- Oklahoma
- South Carolina
- Tennessee
- Texas
- Virginia
- West Virginia
APPENDIX B

Criteria for Selection of Regions Used as Sources of the Study Population

Two criterion were used to select the regions to be used as sources of the study population. They included the variation in performance on the licensure examination of the nursing school graduates in the two regions, and the availability of the schools' success rates on the licensure examination from a sufficient number of state boards of nurse examiners in each region for provision of a relative representation.

Schwirian reports that graduates of schools in the western and midwest regions had the highest percentages of high achievers (scores over 600) on the examinations [Schwirian, Patricia M., Prediction of Successful Nursing Performance, Part I and Part II, Washington, U. S. Government Printing Office, 1976, p. 164]. On the other hand, according to Schwirian, graduates of schools in the southern region were reported as having the highest percentage of low achievers (scores less than 400) for three of the five tests in the licensure examination. Thus it seemed that to use the schools in the western and southern regions would provide sufficient variation in the examination success rates to make the study worthwhile.

Preliminary exploration by telephone calls to directors of various state boards of nurse examiners and to
contacts in schools in the various regions indicated that success rates of individual schools are not published in all states. Consequently, the midwest and southern regions were chosen because of the availability of success rate data for a number of schools that was deemed sufficient to make the study feasible.
APPENDIX C

Survey Questionnaire

This questionnaire is composed of four parts, each of which is concerned with some aspect of the organizational setting of nursing schools. Please put the indicated information in the appropriate space.

Part I. Selection, Enrollment, Graduation

____ 1. GPA required to enter upper division of nursing program.

____ 2. Total enrollment in B.S. program for Fall, 1978.

____ 3. Total enrollment in B.S. program for Fall, 1979.


Part II. Faculty Size, Qualifications, Teaching Load

____ 5. Number of FTE (full-time equivalent) faculty who teach only in B.S. program.

____ 6. Number of FTE (full-time equivalent) faculty who teach partly in B.S. program and partly in graduate program.

____ 7. Number of faculty holding the doctorate as the highest earned degree.

____ 8. Faculty-student ratio in B.S. program (classroom).

____ 9. Faculty-student ratio in B.S. program (clinical setting).

Part III. Organizational Structure and Complexity

____ 10. Number of levels between the faculty and the dean/director (the number of persons through whom a faculty member would have to go to get upward to the dean/director).
11. Number of sub-divisions in the nursing school whose head reports directly to the dean/director (sub-division may be teams, levels, programs, campuses, specialty areas, etc., and should be composed of two or more persons).

12. Number of degree programs offered (1 = B.S. only; 2 = B.S. and M.S.N.; 3 = B.S., M.S.N., Doctorate).

Part IV. Decision-Making

It is recognized that the ultimate authority for decision-making is in the hands of the Board of Trustees through the administration of the parent educational institution. However, certain decisions regarding specific aspects of the nursing school are made by individuals or groups within the nursing school itself, with varying degrees or forms of participation.

Listed on the following table are (1) a code for degrees or forms of participation, (2) twenty decision areas, and (3) eight nursing school positions where some form of decision-making occurs. Although, as indicated above, there are decision-making positions outside of the nursing school, this questionnaire seeks to determine decision-making data about only those positions within the nursing school.

For each decision area, place the code number for type of participation in the appropriate space to indicate who is involved in decision-making and the extent of the involvement in your school. Be sure to place one of the four code numbers in each space.

Be certain to indicate the position and form of participation for a decision area as it actually is in your school, not as you would like it to be.
Code for Form of Participation:
(references to decision-making in the nursing school only)

0 Not involved in decision-making
1 Provides input only
2 Makes recommendations only
3 Makes decisions

<table>
<thead>
<tr>
<th>Decision Area</th>
<th>Dean</th>
<th>Assistant Dean</th>
<th>Division Chairperson, Coordinator, Team Leader</th>
<th>Faculty Council Committee or Council Faculty Standing or Ad Hoc Committee</th>
<th>Faculty-as-a-Whole</th>
<th>Individual Faculty Member</th>
<th>Student Representative</th>
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<td>1. Faculty Selection</td>
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<td>2. Faculty Evaluation (any aspect of faculty evaluation)</td>
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<td>3. Faculty Promotion</td>
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<td>4. Salary of Individual Faculty Member</td>
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<td>5. Budget</td>
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<td>6. Faculty Teaching Assignment (to team, division, specific course, etc.)</td>
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<td>7. Selection of Division Chairperson, or other Sub-unit Heads</td>
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<td>8. Faculty Teaching Load (number of students, classes, clinical labs, etc.)</td>
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<td>9. Nursing School Faculty Membership on University Committees</td>
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<td>10. Membership on Committees within Nursing School</td>
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Code for Form of Participation:
(refers to decision-making in the nursing school only)

- 0 Not involved in decision-making
- 1 Provides input only
- 2 Makes recommendations only
- 3 Makes decisions

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<tr>
<th>Decision Area</th>
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<th>Faculty-as-a-Whole</th>
<th>Individual Faculty Member</th>
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<td>11. Chairpersons of Committees within Nursing School</td>
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<td>12. Requirements for Admission to Nursing Major</td>
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<td>13. Nursing Curriculum</td>
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<td>14. Establishment of New Programs within the Nursing School</td>
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<td>15. Course Content</td>
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<td>16. Degree Requirements for Nursing Major</td>
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<td>17. Conduction of Classes (method, testing, assignments, etc.)</td>
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<td>18. Selection of Students for the Nursing School</td>
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<td>19. Academic Discipline of Students (including Appeals Procedure)</td>
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<td>20. Student Performance, Academic and Clinical</td>
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APPENDIX D

Letter to Nursing Schools

June 27, 1980

Dear __________________ :

In partial fulfillment of the requirements for the Doctor of Philosophy degree at North Texas State University, I am writing a dissertation on "The Relationships of the Organizational Setting of Nursing Schools to Success Rate on the Licensure Examination." Your school has been selected at random for participation in the study.

The criteria for selection of the schools to be included in the study were: (1) National League for Nursing accreditation, (2) a program leading to a baccalaureate degree, (3) location in the midwest or southern regions, and (4) availability of the school's success rate on the licensure examination.

As resources become scarce and increases in the growth rate of enrollments begin to decline, there is increased demand for accountability. Therefore, it seems appropriate that the various components of colleges and universities examine their organizational settings. I believe that such a study as this one would be of interest to those who have a responsibility for both long-range and short-range administrative planning in nursing schools.

Would you assist me in this study by filling in a survey questionnaire about your nursing school? The questionnaire is four pages in length, with a total of thirty-two items. It requests factual data regarding the organizational aspects of your school. Completion of the questionnaire would require about thirty minutes of your time and about thirty minutes of secretarial or clerical time.

All information will be held in the strictest confidence, and no schools will be identified in any way in the study. The questionnaires will be number-coded and need not be signed.
I am enclosing a self-addressed postcard for your reply. The questionnaire will be mailed to you as soon as your reply is received. I do appreciate your assistance. Summaries of the findings of this study will be available upon request.

Sincerely,

Margaret McElroy, R.N., M.S.N.
Doctoral Student
North Texas State University

3621 Dartmouth
Dallas, Texas 75205
Dear ______________:

Thank you for agreeing to participate in my study on "The Relationship of the Organizational Setting of Nursing Schools to Success Rate on the Licensure Examination." I am enclosing the questionnaire and a stamped return envelope.

As you were previously informed, the information will be held in confidence, and no school will be identified in the study. The questionnaires need not be signed and are number-coded for analysis purposes.

I am grateful for your assistance.

Sincerely,

Margaret McElroy  
Doctoral Student  
North Texas State University  

3621 Dartmouth  
Dallas, Texas 75205
APPENDIX F

Formula Used to Calculate the Percentage of Upper Division Enrollment Completing the Program

Of the forty nursing schools included in the study, nineteen require only high school for entry and are in essence four-year programs. On the other hand, the other twenty-one schools require one or more years of college for entry and are in essence two- or three-year programs.

In order to provide consistency in the completion indices for these schools for the purposes of comparison, the percentage of enrollment completing the program was mathematically converted to the percentage of the upper division enrollment completion of the program. The formulae for the conversions are as follows.

A. For two-year programs:

\[
\frac{\text{Number of graduations}}{\text{Total enrollment}} \times 1
\]

B. For three-year programs:

\[
\frac{\text{Number of graduations}}{\text{Total enrollment}} \times 1.5
\]

C. For four-year programs:

\[
\frac{\text{Number of graduations}}{\text{Total enrollment}} \times 2
\]
**APPENDIX G**

**TABLE VIII**
THE INTERRELATIONSHIPS AMONG THE ORGANIZATIONAL CHARACTERISTICS OF NURSING SCHOOLS
(Pearson r)

<table>
<thead>
<tr>
<th>Characteristics of Nursing Schools</th>
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<th>2**</th>
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*p = < 0.05
**p = < 0.01

1 = GPA required to progress to upper division; 2 = Percentage of upper division enrollment completing the program; 3 = Size of faculty; 4 = Number of faculty who have doctorates; 5 = One-degree program (BS); 6 = Two-degree program (MS); 7 = Number of administrative levels between faculty and dean; 8 = Number of subunit heads reporting to dean; 9 = Extent of faculty participation in decision-making for faculty-as-a-whole; 10 = Faculty-student ratio; 11 = Region; 12 = Control; 13 = Academic requirements to enter program; 14 = Success rate.
## TABLE IX

INTERRELATIONSHIPS AMONG ORGANIZATIONAL CHARACTERISTICS
OF NURSING SCHOOLS CLASSIFIED BY REGION**
(Pearson r)

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</table>

* p = < 0.05

** Top line: Midwest (N = 22; for selectivity, N = 19)

Second line: Southern (N = 18)

***1 = GPA required to progress to upper division;
2 = Per cent of upper division enrollment completing the program;
3 = Size of faculty;
4 = Number of faculty who have doctorates;
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6 = Two-degree program (MS);
7 = Number of administrative levels between faculty and dean;
8 = Number of subunit heads reporting to dean;
9 = Extent of faculty participation in decision-making for faculty-as-a-whole;
10 = Faculty-student ratio;
11 = Control;
12 = Academic requirements to enter program;
13 = Success rate.
### Table X

**INTERRELATIONSHIPS AMONG ORGANIZATIONAL CHARACTERISTICS OF NURSING SCHOOLS CLASSIFIED BY CONTROL***

*(Pearson r)*

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*p = < 0.05

**Top line: Public (N = 20; for selectivity N = 18)

Second line: Private (N = 20; for selectivity N = 19)

***1 = GPA required to progress to upper division;

2 = Per cent of upper division enrollment completing the program;

3 = Size of faculty;

4 = Number of faculty who have doctorates;

5 = One-degree program (BS);

6 = Two-degree program (MS);

7 = Number of administrative levels between faculty and dean;

8 = Number of subunit heads reporting to dean;

9 = Extent of faculty participation in decision-making for faculty-as-a-whole;

10 = Faculty-student ratio;

11 = Region;

12 = Academic requirements to enter program;

13 = Success rate.
TABLE XI
INTERRELATIONSHIPS AMONG ORGANIZATIONAL CHARACTERISTICS OF NURSING SCHOOLS CLASSIFIED BY ACADEMIC REQUIREMENTS**
(Pearson r)

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Second line: One or more years of college (N = 21)

1 = GPA required to progress to upper division;
2 = Per cent of upper division enrollment completing the program;
3 = Size of faculty;
4 = Number of faculty who have doctorates;
5 = One-degree program (BS);
6 = Two-degree program (MS);
7 = Number of administrative levels between faculty and dean;
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*p = < 0.05

**Top line: Upper level > 94.90 (N = 14; for selectivity N = 12);
Second line: Middle level, 94.90 and 84.02 (N = 14; for selectivity N = 13); Bottom line: Lower level < 84.02 (N = 12)

***1 = GPA required to progress to upper division;
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