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A STUDY OF CONTROL IN STATE SYSTEMS OF HIGHER EDUCATION

by
Ralph Creyton Atkinson, Jr.

A dissertation submitted in partial fulfillment
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Doctoral Committee:

Professor James I. Doi, Chairman
Lecturer Gerald Gurin
Associate Professor Ralph B. Lewis
Professor James L. Miller, Jr.

ABSTRACT

A STUDY OF CONTROL IN STATE SYSTEMS
OF HIGHER EDUCATION

by

Ralph Creyton Atkinson, Jr.

Chairman: Dr. James I. Doi

The primary focus of this study was on the phenomenon of control as performed by state-wide boards of higher education. The purpose of the study was (1) to provide a conceptual design for identifying the scope and types of control being exercised by state-wide boards of higher education; (2) to operationalize this design by applying it to actual state-wide boards to produce typologies of boards in terms of the scope and types of control they exercise; and (3) to determine through a survey of presidents of public colleges and universities whether the state-wide boards should perform certain control activities and what the relative effectiveness of these control activities is as perceived by the presidents.

A conceptual approach to the problem was proposed based on the structural subsystem concepts of Professors Daniel Katz and Robert L. Kahn. State-wide boards and the control activities they perform were defined in terms of

the maintenance, boundary, and adaptive subsystem structures identified by Katz and Kahn as inherent to social systems. Based on data received from thirty state-wide boards, eight typologies of state-wide boards were proposed. Assumptions were offered as to the relationship of these typologies to evaluations of the boards' performances as reported on questionnaires returned by 205 out of 306 presidents of public colleges and universities.

Analyses of the data produced the following results. In general state-wide boards perform a greater degree of boundary activities than maintenance or adaptive activities. Boards classed as "governing" boards in fact did report the performance of more control activities than did boards classed as "coordinating" boards with the exception of the performance of adaptive control activities, e.g., planning. Governing boards reported performing extensive maintenance control activities while coordinating boards indicated performing relatively few.

Presidents in all state typologies reported greater acceptance of boundary and adaptive activities than maintenance activities. Presidents in "emerging state universities" differed little from university presidents in agreeing that the boards in their states were performing near an adequate level in the three control areas.

State-wide boards typed as high on maintenance control, but low on boundary and adaptive control, received lower performance evaluations in general than boards which

were low on maintenance and high on boundary and adaptive control. State-wide boards high on all three types of control received the highest and most balanced overall evaluations of performance. High performance evaluations on maintenance activities correlated strongly with high evaluations of overall performance.

The study gives evidence that the system concepts of Katz and Kahn have relevance for state-wide boards of higher education. These boards can be defined in terms of the dynamics of the control they exercise. Perhaps, the most significant finding was that the performance of high degrees of maintenance control does not have a detrimental effect on the attitudes of presidents in the system. The results of this study should provide a small, but necessary step toward the design of a systems model for the state coordination of higher education.

PREFACE

The question of control lies at the heart of most issues in the state coordination of higher education. Arthur D. Browne, as Director of the Utah Coordinating Council on Higher Education, captured the essence of the problem in an address before the Sixth Annual Institute on College Self Study for College and University Administrators in Berkeley, 1964:

> As a system unit, can a college or university formulate its plans independently and determine its own destiny? Does the system encroach upon its autonomy? What are the system-institutional relationships which affect long-range planning? Which planning elements are best undertaken at the local level as compared with the system level? How can educational planning be improved? How can rapport between the system and the institution be nurtured for more effective educational planning?[1]

The need for practical answers to these questions has intensified in the past five years. The financial requirements of institutions have outdistanced the abilities of the states to meet the requirements. There has been little slackening in the demands on the institutions for continued increases in enrollments and programs.

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[1]Arthur D. Browne, "The Institution and the System: Autonomy and Coordination," Long-Range Planning in Higher Education, ed. Owen A. Knorr (Boulder, Colo.: Western Interstate Commission for Higher Education, 1965), p.39.

At the center of the controversy is the continuing question, who will control the institutions?

Obviously, the stakes are high. Expenditures for higher education comprise a substantial part of state budgets; the competition for the available dollars is keen; thus the privilege to control the finances of colleges and universities carries with it significant power.

Institutions apparently will continue to be jealous of their prerogatives to direct their own affairs and to compete freely in the marketplace for state and Federal revenues. Legislators likely will not relax their control over the financial resources of the state. State executive officers have all the more reason to intensify their efforts to exercise power through political persuasion. And, caught in the vortex of these pressures are statewide boards for higher education charged with the statutory responsibility for creating and maintaining the semblance of a system from these separate and often competitive institutions. In this crucible of state pressures on higher education, an unsteady equilibrium of control is sought.

The idea for this study came from a recognition that more effective coordination of higher education in state systems requires the construction of a conceptual framework in which control can be understood and applied in a rational manner. It is believed that research

performed in other social systems can provide certain basic concepts for this framework.

Perhaps the most important contribution this project has to make is the offering of a conceptual perspective from which to view the problems of control. It may provide the exploratory base from which more sophisticated efforts to define control and its applications can be made.

My conviction that state coordination is the arena where the battles of higher education will be won or lost in the coming decades is the result of the significant influence that Professor James I. Doi has had on my life as teacher, counselor, and friend. His enthusiasm for solving the problems faced by state-wide boards has been contagious.

Professor James L. Miller, Jr., has encouraged and guided the development of my interests in the practical issues confronted in state coordination. His practical experience and personal research in the field of state fiscal control have given me a continuing reservoir of assistance upon which to draw. Dr. Gerald Gurin and Dr. Ralph B. Lewis have given graciously and generously of their time in evaluating my work.

Special gratitude is due Dr. Marvin W. Peterson for his willingness to give advice through the long months of attempting to operationalize the measures used in this study.

A special word of gratitude is due Dr. Emogene Pliner and the Public Affairs Research Council of Louisiana, Inc. for permitting me access to questionnaires received in their 1965 study of state coordination.

Finally, this study is dedicated to Joan, my wife, whose encouragement and confidence have been unfailing, and to Ralph and Ben, who have waited patiently for the day when all the unfulfilled promises of a well-meaning dad could be realized.

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CHAPTER I

INTRODUCTION TO THE PROBLEM OF CONTROL IN STATE SYSTEMS OF HIGHER EDUCATION

INTRODUCTION

One of the most significant trends in education in this century has been the establishment of state-wide boards of higher education. Since 1940, twenty-four states have established some form of control or coordination for higher education bringing the total number of states having such an agency to forty in 1969.

As recently as the last decade, many states have passed legislation creating a state-wide board or making profound changes in the structure of the organization they had adopted originally.

Major trends in the coordination of higher education in the last few years have been summarized by Professor Lyman A. Glenny:

> 1. The number of state-wide voluntary coordinating agencies remains static, although their operations have broadened in scope. All of them now employ a small central professional staff.
> 2. The single board for governance and coordination is no longer widely adopted as a means for achieving coordination.
> 3. Coordinating (super) boards are rapidly becoming the scheme for coordination of state systems.
>
> (a) Some have advisory powers only. For the most part these are composed primarily of members representing institutions and governing boards.
>
> (b) Others have from a narrow to a wide range of powers over programs, budgets, admission standards, tuition, and other matters. These agencies are composed of all, or a majority of, public members not directly connected with any public college or university.
>
> 4. Representatives of nonpublic institutions are sometimes given membership on coordinating boards with advisory powers. Nonpublic institutions are usually given consideration in formulating state master plans.

5. The chief function of most agencies has changed from budgeting to planning for orderly growth of higher education in the state.
   (a) Budget and program review have become primary means of implementing master plans rather than goals in themselves.
   (b) The scope of subjects studied and the volume of data collected and analyzed is increasing rapidly. Use of computers has accelerated this trend toward more scientific studies.
6. Staffs of coordinating agencies are larger in size, more professional, and better skilled in research techniques.
7. Many public institutions now exercise their autonomy within the boundaries set by state plans in the form of law and/or coordinating agency policy.
8. The Federal Higher Education Facilities Act of 1963 appears to be lending impetus for power to be given to a coordinating body concerned with both public and nonpublic institutions in the states. The act will also stimulate better and more frequent studies of building utilization.[1]

The developments described by Professor Glenny have produced considerable conflict and opposition in many states. Many of these trends, as this study will demonstrate, are still in formative stages. The successful culmination of certain of these trends, e.g., the shift from budgeting to planning as the "chief" function in most agencies, by no means is assured at this time.

Chancellor John D. Millett reflected this uncertainty prior to assuming his present position as Chancellor of the Ohio Board of Regents, "In this area of working relationship between central state planning agencies and

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[1]Lyman A. Glenny, "State Systems and Plans," Emerging Patterns in American Higher Education, ed. Logan Wilson (Washington: American Council on Education, 1965), pp. 101-102.

individual public institutions of higher education, I believe we are at present simply feeling our way."[1]

There are problems of serious magnitude contributing to the uncertainty of state coordination. Demands on colleges to admit larger numbers of students with wider ranges of abilities and interests have increased dramatically. The expansion of fields of knowledge has brought with it the necessity for expanding the scope and quality of the curricular programs offered by the institutions. A prolonged national commitment in Vietnam has continued to siphon off Federal assistance to institutions in increasingly larger amounts. State fiscal resources, especially in states where there is at least one major public university of national prominence, are becoming increasingly inadequate.

In the midst of this uncertainty, certain basic issues persist: Who will control the institutions? Who will determine the role to be played by each institution in the development of higher education in the state? Who will determine the allocation of already inadequate state dollars for higher education? What is the appropriate scope of control activities for the state-wide board? How can control in higher education be achieved to the benefit of the citizens of the state and nation?

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[1]John D. Millett, "State Planning for Higher Education," Educational Record, Vol. 46, No. 3 (Summer, 1965), p. 227.

THE NEED FOR THE STUDY

Control of higher education continues to be a major problem partly because no adequate conceptual tools have been developed with which solutions can be constructed. It will become apparent in the literature review later in this chapter that most writers concerned with state-wide boards have attempted only to analyze operational differences between governing boards, coordinating boards, and voluntary boards.

When one investigates state-wide boards closely, it is clear that in many cases the reported distinctions between governing boards and coordinating boards may be more semantic than real. In some cases coordinating boards may exercise a greater degree of control over institutions in their states than that exercised by governing boards in other states.

It would be helpful therefore to be able to make real distinctions between types of state-wide boards in terms of the types of control and the scope of control they exercise. From this initial analysis it would be possible to identify certain categories of state-wide boards in terms of their control characteristics.

With state-wide boards classified in terms of control characteristics, it would be possible to pursue another important question: How is the performance of the state-wide board affected by its control pattern? Answers to this question provide a basis for the design

of a conceptual model depicting the structures and processes of a state system of higher education. Subsequent field testing of the model could provide valuable information for developing better coordinated state systems.

DEFINITION OF THE PROBLEM

State-wide boards of higher education must attempt to implement control in the context of a tradition in higher education that treasures the autonomy of the individual institution. Charles H. White, in a recent study of the Kentucky Council on Public Higher Education, suggests the problem is basically legal, "The heart of the difficulty lies in establishing a proper sphere of authority for a coordinating body without undercutting the traditional legal responsibilities of the institutional governing boards."[1]

Apparent in White's statement is the assumption that individual institutions have had significant legal prerogatives to control their own affairs. This would suggest that the institutions are less than dependent on the environment around them for continued operation. In systems terminology, this independence which White suggests is more characteristic of relatively closed systems.

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[1]Charles H. White, "The Kentucky Council on Public Higher Education: Analysis of a Change in Structure" (Unpublished Ph.D. dissertation, School of Education, The Ohio State University, 1967), p. 44.

Lyman A. Glenny argues, however, that:

> Theoretically, subordination of colleges and universities to a coordinating board is an impairment of institutional autonomy. But, the degree of that impairment must be viewed in comparison to the actual, not the theoretical, autonomy which formerly existed.[1]

Glenny proposes that the autonomy to which White refers is in fact more theoretical than actual. To Glenny, colleges and universities may be theoretically independent of their environment, but in actuality are interdependent with that environment.

Implicit in Glenny's statement is the view of institutions of higher education as open social systems which are characteristically interdependent with their environments. For example, regardless of how autonomous a state university may think itself to be, it is still dependent on the state for the fiscal inputs necessary to survival. This dependence on the state for financial resources requires that the university be open also to other inputs that affect its control over its own affairs.

It appears that Glenny overlooks the social psychological dimension of governance when he suggests that colleges and universities after all are not losing anything they actually had. One could counter that when individuals think they have lost something that they

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[1]Lyman A. Glenny, "Politics and Current Practices in Coordinating Higher Education," Campus and Capitol, ed. John W. Minter (Boulder, Colo.: Western Interstate Commission for Higher Education, 1966), p. 37.

perceived themselves to possess, the impact on them is just as significant as when they have lost something they in fact did possess.

This perception of loss is observed especially with regard to such axiomatic concepts as independence of action. The fact of possession could be said to exist substantially in the belief of possession. Perception of autonomy on the part of colleges and universities may play a greater part in the reactions of the institutions to the efforts of state-wide boards to control higher education than the theoretical or the actual autonomy that may exist.

If state-wide boards are consigned to a role in opposition to the perceived autonomy of the colleges and universities, their future is bleak and stormy indeed. In this polar position, the central agencies' actions must be seen always as restrictive and repressive; their stance always negative.[1] In this climate of conflict, it is unlikely that the state-wide boards can function with effectiveness.

It should be noted parenthetically here, however, that the absence of conflict and opposition is not a prerequisite for successful central board operation. In fact, as Lyman Glenny explains, "tensions among the elements in the coordination scheme do not entirely dissipate even in

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[1]Thomas R. McConnell, "State Systems of Higher Education," Universal Higher Education, ed. James Earl McGrath (New York: McGraw-Hill Book Company, 1966), p. 37.

smoothly operating systems, and fortunately can not. Indeed, the process is similar to the workings of a democratic society and may be described as a 'system of balanced tensions' among diverse elements."[1]

Certainly, if the chief administrative officers in the institutions in the system appear too happy with the control agency, there is the strong possibility that legislators and others in state government will be suspicious as to whether the state-wide board is doing the job it was created to do.

Nor is there the implied assumption here that the boards that have multiple control activities are somehow more effective or better in some way than those having only an operational control function. This type of generalization cannot and should not be made; the effectiveness of a state-wide board is relative primarily to the purposes for which it was established in its own state.

Historically, state-wide boards have begun their operations with activities that were devoted primarily, and often exclusively, to operational control. A review of the "Unofficial Proceedings of the 1954 Conference of Executive Officers of State-Wide Coordinating Boards for Higher Education" reveals a preoccupation during those early days of state coordination with problems of controlling finances, curricular programs, facilities

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[1]Glenny, Campus and Capitol, p. 32.

expansion, faculty policies, student admissions and tuition, and legislative relationships with institutions.[1]

In those early discussions concern was expressed about control of the interaction between the presidents of the institutions and the members of the state legislatures. If the institutions could be regarded as components in a state system of higher education, these early concerns could be described in terms of attempts to control the exchanges of the systems with their environments, i.e., the legislatures as external sources supplying the financial inputs necessary for survival.

More recently, state-wide boards have turned their attention to another area, the control of the future. Using state master plans for higher education as the primary vehicles for controlling the future, the boards have implemented activities in research, planning, and experimentation.

In all these areas--operational control, liaison control, and control of the future--the institutions in many instances have perceived themselves as having been stripped of power to control their own affairs. It is within this context that we focus on the specific problem for this study.

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[1]James I. Doi, "Unofficial Proceedings of the 1954 Conference of Executive Officers of State-Wide Coordinating Boards for Higher Education" (New Mexico Board of Educational Finance, Sante Fe, New Mexico, 1954). (Mimeographed.)

PURPOSE AND SCOPE

The purpose of this study is: (1) to provide a conceptual design for identifying the scope and the types of control being exercised by state-wide boards of higher education; (2) to establish typologies of state-wide boards in terms of the scope and the type of control they exercise; and (3) to determine the perceptions of public college and university presidents regarding the rights of state-wide boards to perform various control activities and the relative effectiveness with which the boards are performing the activities.

It is acknowledged readily that this study concerns itself with control which is only one of many factors influencing the work of state-wide boards. For example, the study purposely will not include an analysis of the relationships of colleges and universities with state legislatures or the relationships of the state-wide boards with the legislative and executive branches of state government. These omissions are significant, but necessary due to the limitations of financial resources and time normally available for studies of this type.

The study will be able to investigate the administrative or leadership style differences that may exist in the implementation of a specific agency's control activities only in so far as they are reflected in the perceptions of presidents regarding the performance of the state-wide boards. Obviously, the same control activities may

be performed in a variety of ways with regard to managerial technique to produce reactions ranging from open hostility to relative acceptance. Another related and important aspect that cannot be explored in this study is the impact that charisma, i.e., the influence attributable to the unique personality of a key leader in a state system, plays in producing a climate conducive to coordination.

Despite these limitations, it is felt that this study can make a contribution to the growing literature on state coordination by providing an initial design and data foundation for the construction of a behavioral model of control in state systems of higher education.

LITERATURE REVIEW

In order to bring as much relevant information to the design and implementation of this study as possible, a thorough search was made of the literature available in the following categories:

1. State systems of higher education
2. State-wide boards of higher education
3. Presidents of state college and universities

The survey included applicable books; articles indexed in the standard directories for the behavioral sciences and education; articles in controlled circulation periodicals obtained through a variety of professional sources; doctoral dissertations in education, sociology,

psychology, public administration, higher education administration, and business management; and various studies in the field of state coordination of higher education.

Most of the literature that deals directly with state systems of higher education is historical, descriptive, or simply anecdotal. Therefore, to establish a theoretical foundation for studying control in state systems, it is necessary to draw upon a wider range of literature.

State Systems of Higher Education

The literature during the last decade reflects a growing awareness of the interrelatedness of institutions of higher education within regional and state boundaries. This systems awareness is evident in The Campus and the State written by Moos and Rourke in 1959 describing the increasingly complex relationships between institutions and state governments.

Also in 1959 Lyman A. Glenny, who was to become one of the most articulate spokesmen for state coordination, described the coordinative structures and processes established in many states in Autonomy of Public Colleges, The Challenge of Coordination. He surveyed the functions being performed by state coordination agencies and described the relationships of institutions with these agencies.

Subsequent publications reveal an increasing acceptance of the notion that more organized efforts at coordination were needed. McConnell in A General Pattern for American Public Higher Education, 1962, predicted that

coordination of public higher education in some form was inevitable. In an article in the Summer, 1962, issue of the Educational Record, Logan Wilson analyzed basic questions regarding higher education and concluded that significant changes in relationships must occur. Conant in his often quoted book, Shaping Educational Policy, 1964, proposed not only state and regional coordination, but also a national compact to establish educational policies.

The growing acceptance of state-wide coordination was not without opposition. Seymour E. Harris described the growing complexity of relationships among institutions and between institutions and the state in Challenge and Change in American Education, 1965. Long an outspoken advocate of voluntary coordination of higher education, M. M. Chambers produced an overview of public higher education in Freedom and Repression in Higher Education, 1965, proposing that the cherished autonomy of colleges and universities would be eroded if appropriate limits were not placed on the powers of state governments and their state-wide agencies. He emphasized that growth in the size of institutions should not be viewed necessarily as reason for the restriction of their freedom, but conversely as justification for their exercising added freedom.[1]

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[1]M. M. Chambers, Freedom and Repression in Higher Education (Bloomington, Ind.: The Bloomcraft Press, Inc., 1965), p. 120.

Updating his earlier analyses, Lyman A. Glenny contributed an important article, "State Systems and Plans," to Emerging Patterns in American Higher Education, edited by Logan Wilson in 1965, in which he identified certain basic trends in the relationships of institutions in state systems to each other and to the state agencies.

Thomas R. McConnell warned in an article in Universal Higher Education, 1966, that the term "coordination" had a totally negative connotation for too many people who identified it only with restrictive and repressive measures. He argued for a broadening of concerns on the part of coordinating agencies.[1] Representative of the fears that such negative perceptions produce are the feelings expressed by Samuel B. Gould, Chancellor of the State University of New York, in an address on "The University and State Government: Fears and Realities" before a WICHE conference on higher education and the state in 1966. He advocated that "the public universities of today and tomorrow should have their basic freedom of action guaranteed to them by constitutional authority. . ."[2] Such authority, he added, should be exercised only in a defensive or protective manner using legal defenses as a last recourse.

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[1]Thomas R. McConnell, "State Systems of Higher Education," Universal Higher Education, ed. James Earl McGrath (New York: McGraw-Hill Book Company, 1966), p. 37.

[2]Samuel B. Gould, "The University and State Government: Fears and Realities," Campus and Capitol, ed. W. John Minter (Boulder, Colo.: The Western Interstate Commission for Higher Education, 1966), p. 15.

In a later WICHE conference on colleges and universities as agents of social change, Eldon L. Johnson, vice-president of the University of Illinois at Urbana, discussed the tensions that exist between a university and its environment. He proposed guidelines that would restrict the power of the university to the power of knowledge as opposed to legal power or the power to coerce. The result, he suggested, would be a constant equilibrium held together by the opposing tensions between the university and its environment.[1]

A report issued by the Southern Association of Colleges and Schools, Higher Education and Financial Control by State Governments in Southern Association States, 1968, demonstrated another means by which institutions resist state encroachment on their decision-making prerogatives. The Special Committee producing the report proposes a revision for the current accreditation standard regarding the relation of an institution to external financial and administrative control. The wording of the revised statement is pertinent to this study:

> 7. The Relation of an Institution to External Financial and Administrative Control. An educational institution can neither conduct a sound educational program if its operational procedures are set by legislative act, nor can it be properly administered if an agency outside the institution

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[1]Eldon L. Johnson, "The Tightening Tension: The University's External Relations," Colleges and Universities as Agents of Social Change, ed. W. John Minter and Ian M. Thompson (Boulder, Colo.: The Western Interstate Commission for Higher Education, 1968), pp. 40-54.

> exercises undue and restrictive financial control. Once funds have been appropriated for an institution (either for building construction or operations) budget making, establishing priorities, and control of expenditures should be entirely within the institution under the jurisdiction of the governing board subject to general policy provisions enacted by the legislature and to the commitments represented through budgetary requests by the institution. State financial and administrative officials adversely affect the educational and academic process when they exercise specific and detailed control over matters which can and should be handled within the institution. Recognition by educational representatives of the responsibility of state officials for the post audit function and the general enforcement of reasonable budgetary law is imperative; however, the educational function of an institution must not be controlled through the use of budgetary techniques or controls by financial officials outside the institution.[1]

It is clear from the tone of this document that representatives of institutions in the southern states, at least, are not resigned to control over state institutions by agencies of the state or the legislature. While the trend toward more central control is evident, it would be a mistake to assume that the scope and types of control that will be developed are a foregone conclusion. There are explicit indications in the discussions of institutional autonomy in the literature that the institutions, especially the larger universities, will guard jealously their prerogatives in the areas of fiscal and operational control.

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[1]Southern Association of Colleges and Schools, Higher Education and Financial Control by State Governments in Southern Association States, A Report of a Special Committee on Standard Seven (Atlanta: Southern Association of Colleges and Schools, 1968), p. 13.

State-Wide Boards of Higher Education

The literature on state-wide boards of higher education is almost exclusively historical and descriptive in nature. Typical of these documents and representative of early concerns for coordination is Co-ordinated Control of Higher Education in Oregon, written by Charles David Byrne in 1940. Byrne describes the development of coordination in Oregon during the 1930's and analyzes its impact in the effectiveness and costs of higher education in the state.

The departmental library of the Center for the Study of Higher Education at The University of Michigan provided opportunity for the researcher to survey documents from over twenty other states. These documents are too numerous to cite in this preliminary literature review, but in general they contain statistical and descriptive data concerning the institutions in a particular state; projection studies of student enrolments; space utilization studies; financial summaries; and state master plans for higher education.

A System of Higher Education for Oklahoma published in 1942 by the Oklahoma State Regents for Higher Education contains an excellent introductory chapter describing the developments across the nation in the reorganization of selected state systems and the development of the "supplementary coordinating board" idea in such states as Oregon, Utah, New York, and Texas. A proposed higher education system for Oklahoma is described with a specific suggestion

for the coordination of the system. A later and more statistical approach is represented by Illinois Looks to the Future, a planning report issued in 1957 by the Higher Education Commission of the state to the governor and legislature. It was the forerunner of the more quantitatively oriented planning documents to appear in numerous states during the next decade.

The "Unofficial Proceedings of the 1954 Conference of Executive Officers of State-Wide Coordinating Boards for Higher Education," reveals the preoccupation of coordinating officers during that period with the control of finances, curriculum, admissions, scholarship programs, extension programs, new construction of facilities, and the relationships of the presidents of the institutions with the state legislature. In 1956, an address by Paul Leonard before the Association for Higher Education in Chicago explored the impact that increasing controls would have on program planning by the institutions. It is evident from the literature that operational control was the primary concern during the early period of developing the coordinative functions of state boards.

During these early years of coordination, states were organizing their state-wide agencies around three basic patterns--governing boards, coordination boards, and voluntary boards. Governing and coordinative patterns of organization were by far the predominant types of agencies.

Proponents of voluntary coordination found little solace in M. M. Chambers' Voluntary Statewide Coordination in Public Higher Education, a descriptive study of five states in which some measure of success had been achieved through voluntary efforts at coordination. Shortly after the brief treatise was published in 1961, four of the five states described instituted some form of statutory coordination; e.g., Ohio, Michigan, Colorado, and California, leaving only Indiana with a voluntary system.

S. V. Martorana, who had earlier published a basic reference directory of state-wide boards, contributed a status report on coordination in the early sixties before the annual AHE conference in Chicago in 1962. James L. Miller, Jr., who was to later produce one of the most extensive studies of budgeting for coordinated higher education, warned in the April, 1962, issue of the Educational Record:

> Coordination can become heavy-handed, negative control if it is narrowly conceived and poorly administered. On the other hand, well-managed coordination can be a significant milestone in the maturing of American higher education--a step toward integrated, state-wide higher education systems that serve society as no individual college or university could.[1]

Miller's State Budgeting for Higher Education, 1964, provides the most thorough and detailed source available on

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[1]James L. Miller, Jr., "The Two Dimensions of State-wide Higher Education Coordination," Educational Record, XLIII (April, 1962), p. 167.

the processes of budget control exercised by various state governing and coordinating agencies.

One of the most valuable documents to come out of the distinguished series of conferences on higher education sponsored by the Western Interstate Commission for Higher Education is Long-Range Planning in Higher Education, 1964. Arthur D. Browne provides an excellent look at long-range planning as the process by which a pattern of constructive relationships between system and institution might be established. He discusses at length the dividing lines between the scope of institutional planning and the scope of system planning. He, too, proposes that a properly operated central or coordinating unit need not be an inhibiting agent. Rather, he concludes, that the "coordinative approach must be positive and constructive to succeed."[1]

An equally significant companion article in this same collection concerns the use of system analysis in higher education planning. Prepared by David G. Ryans, the article provides one of the earliest applications of systems theory and analysis to be found in the literature. One of the implications of the application of systems concepts to education, Ryans concluded, was that "educational planning and conceptualization must take a careful look at,

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[1]Browne, op. cit., p. 45.

and undertake intensive analysis of, the important components, or subsystems, of educational systems."[1]

John D. Millett, in the 1965 Summer issue of the Educational Record, summarized a brief survey of current state efforts at planning and coordination with his personal conclusions about the uncertainty of coordination.

A study by James G. Paltridge in 1966 of the California Coordinating Council for Higher Education apparently made first mention of certain concepts from social psychology and business management, e.g., organizational goal-setting, relating them to state systems as social organizations. The study is primarily a historical, descriptive document, but in the analysis the researcher superimposes certain concepts from the literature on change in organizations on the past actions of the California Council to give some insight into the viability of the organization in a period of flux. While the Paltridge study concentrates upon functions only in terms of a differentiation of functions, i.e., purposeful roles to be performed by various institutions in the system, it does demonstrate the applicability of behavioral concepts to the previously static analyses of coordinating organizations.

Another WICHE conference document, Campus and Capitol, 1966, provided two significant articles on state coordinating

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[1]David G. Ryans, "System Analysis in Planning," Long-Range Planning in Higher Education, ed. Owen A. Knorr (Boulder, Colo.: Western Interstate Commission for Higher Education, 1964), p. 112.

boards. Lyman A. Glenny, in expanding his theme on the balance of tensions in state systems, contrasts two styles of coordinative action: (1) the coordinating agency as "broker," i.e., serving only as middle man or mediator between opposing forces in the state, or (2) the coordinating agency as "leader," i.e., the exercise of influence and initiative to plan for all aspects of higher education development. Glenny clearly advocates planning as the crucial function for coordinating agencies to perform if they are to be effective. Daniel G. Aldrich, Jr., writing in the same document on "Maintaining Institutional Identity and Autonomy in Coordinated Systems" sees the crucial issue in autonomy in terms of the internal attitudes and actions of faculty, staff, and students rather than in external constraints upon the institution. He suggests that the identity of an institution is the image established by the uniqueness and the dynamics of the persons within the institution. The freedom they exercise in establishing this identity is in effect their expression of autonomy.

One of the most useful of recent surveys of state coordination has been produced by Emogene Pliner and Hubert C. Lindsay of the Public Affairs Research Council of Louisiana. Entitled Coordination and Planning, the study explores the organization and functions of each state agency with attention to the scope and extent of implementation. The study makes application of the

findings to the problems of higher education in Louisiana and concludes with some rather general proposals for coordinating action that could apply to many agencies. Through the generosity of Dr. Pliner, this writer had available for analysis throughout the project photocopies of the questionnaires returned by participants in the PARC study.

One of the first documents produced by the project directed by Robert Berdahl under the auspices of the American Council on Education is a study of coordination in Kentucky written by Charles H. White in 1967 and entitled "The Kentucky Council on Public Higher Education: Analysis of a Change in Structure." While the study makes no attempt to depart from a strictly historical approach, it is a well-written chronicle of the development of a single system.

In a most recent article in the Educational Record, James G. Paltridge argues for a systems approach to the problems of state coordination and asserts, "But, the dilemma of planning and coordinating on a state-wide level is how to reconcile the political pressures for control of higher education with the educators' desire for academic freedom."[1] Paltridge argues that in order to be effective in guiding a state's higher educational

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[1]James Gilbert Paltridge, "Toward a Systems Model for State Coordination," Educational Record, (Winter, 1969), p. 71.

affairs a state-wide board must create a "viable equilibrium" among the divisive forces generated out of opposing goals, conflicting functions, and competitive aspirations. By "viable equilibrium," he means the maintenance of a situation in which there is a stable and reasonably equitable balance between the powers of the participants and the external pressures that would obstruct the state-wide board's work.

In summary, it is obvious that the literature on state coordinating boards has viewed the agencies as statutory or political entities without evident concern for their viability as social organizations. This is not to say that the contributions of these writers are not important; to the contrary, they provide an excellent historical and descriptive base that can serve as background for studies into the dynamics of these agencies as open social systems.

Presidents of Public Colleges and Universities

In an effort to gain insight into the perceptions and attitudes of college and university presidents regarding the autonomy of their institutions, the role they were to play as institutional leaders in state coordination, and the scope and types of functions state-wide boards should perform, an extensive search was made of books and articles written by and about presidents. The result was somewhat discouraging due to the scarcity of specific references

to the problems of autonomy and coordination. Most of the documents drew heavily upon personal experiences regarding the administration of a specific institution rather than the relationship of the institution to the larger system. Consequently, most of the materials examined for this section will not be reviewed, but will be listed in the bibliography.

There are at least two exceptions to the generalizations noted above. The first is a memorandum from the president of the University of Illinois, George D. Stoddard, to the Board of Trustees of the University in 1951. In this published memo, President Stoddard outlines his objections and alternatives to the Russell Study of the Structure of the State Tax-Supported System of Higher Education in Illinois. The Russell study pointed to the need for the general overhead control of higher education in the state as "the most urgent situation demanding a solution." This position brought a rejoinder from President Stoddard that the most crucial problems rather were to improve the quality of instruction in the state and expand the privileges of higher education to a larger segment of the population.[1] The president voices in the public memorandum fear of the impending establishment of a central coordinating agency that may represent the attitudes of many

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[1]George D. Stoddard, The Russell Report, Memorandum to the Board of Trustees of the University of Illinois (Urbana, Ill.: University of Illinois, 1951), pp. 3-4.

chief executives of institutions in states where agencies have been created in the past two decades.

In The University in Transition, James A. Perkins discussed the development of coordinative systems and the impact of these systems on institutional autonomy. Generally, Perkins urged college and university administrators to seek answers in participation of all levels of academic organization rather than in rigid defense of their autonomy.

SUMMARY

This limited survey of the literature related to control in state systems of higher education has established the need for additional information on the subject. Especially needed are studies which provide quantitative data specifically on the nature and scope of the control activities performed by state-wide boards of higher education.

It will be the purpose of this study to make a modest contribution to begin to fill this vacuum.

CHAPTER II

CONCEPTUAL APPROACH TO THE STUDY

INTRODUCTION

In this chapter the concepts developed by Daniel Katz and Robert L. Kahn in The Social Psychology of Organizations to analyze the subsystem structures of organizations have been adapted to provide a conceptual framework for viewing control in state systems of higher education. Since the writer is not a behavioral scientist, but rather a student of higher education, the focus of the chapter will be primarily on the phenomenon of control as it is expressed through the subsystem structures of a state system of higher education. There will be no attempts to provide an intensive discussion of open systems concepts. This study does not presume to construct a theoretical model of a state system of higher education as an open system. It is limited to defining the relationship between the state-wide board and the institutions in terms of subsystem structures described by Katz and Kahn.

As a preliminary consideration, a definition of control in a state system of higher education is essential to the study.

A DEFINITION OF CONTROL

Ryans accurately observes that all open systems involve elements that perform specific functions which are governed by operating rules or "controls."[1] The principles

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[1]Ryans, op. cit., p. 84.

that make up these controls define the system's activities, regulate its performance, screen information in and out of the system, determine the selection of inputs into the system, decide what processes will occur, and determine what the output of the system will be.

It is in this regulatory sense that the term control will be used in this study. The state-wide board will be described in terms of the scope and type of its control of the essential functions of the state system. The important questions will be: To what extent does the central board control the stability and predictability of the system? To what extent does the central board control the relationships of the institutions in the system with the external environment? To what extent does the central board regulate the system's anticipation of and responses to changes in the external environment? And, to what extent does the exercise of a particular pattern of control activities affect the perceptions of the participants in the colleges and universities about the performance of the system?

In this study, control will be regarded as the continuum underlying the performance of all functions of the state-wide board.

COMPONENTS OF THE SYSTEM

A state system of higher education may be conceived to include any number of components relative to the degree of detail involved in the analysis. For the purposes of this study, however, a state system will be assumed to include: (1) individual public colleges and universities each serving as a separate component and (2) a state-wide board.

In this approach, the state legislature and the various departments of the executive branch of state government will be assumed to be external to the state system of higher education. These segments are systems in and of themselves; just as the general public comprises a separate system to which higher education must relate.

It is important to mention at this point that the elements that comprise the state system of higher education are interdependent components. As Ryans indicates, there is an interrelatedness among the elements of the system that is characteristic of the structure and functions of educational systems.[1] The nature and implications of this inherent interrelatedness will be discussed at length in a later section of this chapter.

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[1] Ibid., p. 80.

STRUCTURE OF THE SYSTEM

Structure in open systems is but a momentary glimpse in which the ever-changing processes of the system are frozen for observation and analysis. It is not the fixed, rigid framework common to the bureaucratic analysis of organizations.

Consistent with structural typologies proposed by Katz and Kahn, a state system of higher education may be assumed to have five subsystem structures: (1) production, (2) maintenance, (3) boundary, (4) adaptive, and (5) managerial.[1] It should be noted that structure is defined in terms of function, i.e., one or more of the subsystem structures listed above may be expressed through a single organizational component of the system. While in a state system the productive subsystem structure may be implemented exclusively through the colleges and universities, the remaining four structures may be implemented at the same time in varying degrees by all or some of the institutions in the system and by the central board.

The structural development of organizations usually follows a pattern. In the first stage, certain task demands perceived as important by the members of the potential system and the human population of its environment are begun and a production structure evolves to fulfill these demands on a continuous basis. Stage two involves

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[1]Daniel Katz and Robert L. Kahn, The Social Psychology of Organizations (New York: John Wiley and Sons, Inc., 1966), p. 86.

the period of formulating and enforcing rules from which an authority structure develops and provides the foundation for the maintenance and managerial structures. Stage three includes the emergence of a concern for structures that focus attention on boundary problems. This stage involves the boundary subsystem structure and later includes the development of the adaptive subsystem structure to cope with changes in the environment.[1]

As Katz and Kahn indicate, each of these structures develops certain dynamic tendencies of its own. These tendencies indicate the important concerns of the structure. In the productive structure, the recurring concern is for technical proficiency. The maintenance structure is giving paramount attention to stability and predictability, while the boundary and adaptive structures are exhibiting tendencies toward external control and internal change. The managerial structure concentrates on overall control, coordination, and survival of the system. As the authors point out, these tendencies of structures are not always exhibited in the same terms and with the same strength. They suggest, however, that one of the overriding tendencies in organizations is the "maximization principle," which expresses the efforts of the system toward growth, insured survival, and environment control.[2]

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[1] Ibid., p. 109.

[2] Ibid.

In this study, attention will be given to the implementation of the maintenance, boundary, and adaptive structures through the state-wide board. The managerial structure will be considered only as it is expressed totally or separately through the three structures mentioned.

PROCESSES OF THE SYSTEM

The processes of a system are the matter-energy exchanges that take place in the system. In developing a conceptual approach to control in state systems, it will be helpful to seek to identify the types of exchanges that may occur through the maintenance, boundary, and adaptive subsystem structures.

Maintenance Structure Processes

The tendency of the maintenance structure is toward the retention of a steady state or equilibrium in the system. In expressing this tendency, the state-wide board may seek to mediate between the task demands of various colleges and universities in the system as they perform their predominantly productive function for the system. In order to get as much stability and predictability into the system as possible, the board may establish written policies, formulas, and procedures in the areas of finances, facilities, curricula and programs, students and faculty.

In general, the exchanges in the maintenance process between the board and the institutions in the system are

characterized by the board's transformation of information received from the institutions into recommendations for financial allocations, facilities allocations, curriculum and program assignments, enrollment quotas, and faculty standards. In some cases, it actually may be that the board, after receiving a lump sum from the legislature for higher education, directly determines the allocation of financial and physical resources to the individual institutions.

Some maintenance structures impart values as well as special skills and knowledge, e.g. the church and the school in society. In higher education, these values have to do with basic issues such as academic freedom. State-wide boards have given little evidence of performing this normative function. Evidently, this expression of values for the system is done predominantly by the colleges and universities in the system. The absence of this normative role in the central board's functioning may tend to make the board mechanical and authoritarian. As this tendency toward maintenance without normative expression increases, the more the managerial structure, i.e., with its overriding concern for control, may be integrated into the maintenance structure. It is possible that in some types of boards it would be more accurate to refer to the maintenance-managerial structure.

When performed to the exclusion of the boundary and adaptive structures, the maintenance structure becomes

withdrawn and insulated from forces outside the system. In this situation, the system would become rigid and unresponsive to its environment. It is possible that this preoccupation with the maintenance function has resulted in the last decade in the inability of many institutions and many state systems to cope with the increased rate of change in society.

Highly significant to this study is the point Katz and Kahn make with reference to the problems of power, privilege, and rewards presented by maintenance structures.[1] These problems occur at the crucial line between the authority to make system decisions and the submission to those decisions. It is the often expressed fear seen repeatedly in the survey of the literature on state coordinating systems that autonomy will be lost as the power to make decisions affecting the institutions passes to the central agency. In system terms, the writers are expressing anxiety over the reduction in the institutions' capacities to control the flow of inputs, to seek new inputs, to determine outputs, and to alter the processes that transform inputs into outputs.

Therefore, one of the underlying assumptions of this study is that the maintenance structure of a state system of higher education must be complemented by attention to boundary and adaptive structures in order to produce a system climate for coordination in a positive sense.

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[1] Ibid., pp. 134-135.

Boundary Structure Processes

Since each system and each subsystem possess boundaries which constitute points of exchange with other systems and supersystems, it will be helpful to describe the boundaries to be considered in this study.

The boundaries of the state system of higher education border on the supersystem represented by society in general, specifically the constituents in a particular state. In addition to having transactions with the societal supersystem, the state system of higher education relates to other systems within the supersystem, e.g., the system represented by the state legislature, the system represented by the executive branch of state government, and the system represented by Federal government interests at the state and regional level.

The state-wide board as a component of the state system for higher education has boundary transactions with the societal supersystem as it represents the interests of higher education to the constituents of the state. It also has boundary transactions with the legislative and the state executive offices, which may be thought of as parts of the supersystem.

The process transactions with the general public are in the broadest sense concerned with procurement and disposal, but the specific activities could be called information transmission and interpretation. The informational activities involve the gathering and selective dissemination

of information about the needs and the products of higher education to appropriate state groups. The interpretive activities are more sophisticated actions requiring analysis, indoctrination, and persuasion of individuals and groups in the supersystem who have the power to affect the exchanges of their systems with the state system of higher education.

The boundary exchanges with the legislative system and the executive system not only include information transmission and interpretation, but also a more formalized activity we shall call the liaison activity. In performing this boundary activity the central board may act as representative of the institutional components to the legislative or the executive system in the procurement of financial resources or perhaps intangible types of social legitimacy and power.

State systems will vary greatly in the degree of permeability of their boundaries, i.e., the ease with which transactions occur across the boundaries. It is in keeping with the zeitgeist of the sixties to fault higher education for being irrelevant and unresponsive to the needs of society. If these charges are true, one would surmise that the boundaries of state systems of higher education and those of individual institutional components have been relatively impermeable.

A significant source of the pressures felt by administrators and faculty today to make the institutions

more responsive may be the increased permeability of the boundaries of the system without the concommitant internal alterations within the system to cope with the increased rate and complexity of the system transactions with the external environment.

Adaptive Structure Processes

The adaptive structure of a state system of higher education is the totality of its change processes. Through this structure the system determines what changes may occur in its environment and what the impact of those changes will be upon the processes of the system. Through the adaptive structure research, planning, and development occur enabling change to take place. It is also through this structure that experimentation and innovation are encouraged.

When important or threatening changes are perceived in the environment, the system has the alternative of trying to alter the fact or force of the external change or it can propose internal changes to meet the challenge of external change. Organizations, as Katz and Kahn indicate, usually choose to attack the problem in the external environment initially, resorting to internal change only as a last resort.[1] An educational example of this tendency may be found in the attempts in many states on the part of representatives of colleges and universities to halt the establishment of a state-wide board rather than make

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[1] Ibid., p. 93.

changes first in the established relationships between them and other institutions.

There is a significant relationship between an organization's choice of external change over internal change and the relative degree of openness of the system, a phenomenon closely associated with the idea of boundary permeability discussed in the previous section. The less open a system is, the stronger its tendency is toward attempting first to change the external environment. The boundary structure and the adaptive structure of a system merely deal with different temporal dimensions of the same systemic relationship, exchange with the system environment.

The processes performed in research in state systems by the central boards involve the collection of comprehensive data about the institutions within the system and the system as a whole; the conducting of cost-effectiveness studies directed toward system improvement; and the forecasting of long-range needs of the system. Planning processes may range from merely compiling the plans of separate institutions into one unintegrated document to the development over a period of time of a comprehensive, long-range plan for higher education in the state. Perhaps the most publicized processes performed through the adaptive structure are those related to experimentation and innovation. These processes range from merely disseminating information about innovations in other

institutions to the actual performance of a change-agent's role to stimulate innovation.

It is the argument of this study that the effectiveness of state-wide boards can be increased by balancing the emphasis on the maintenance structure with increased and more comprehensive emphases on the boundary and adaptive structures of the systems. The functions performed through this wider range of structures provide the "greater complementarity of functions" mentioned by James D. Thompson as essential to the climate of cooperation.[1]

Interaction Between Components

As Ryans indicates, the components of a system are likely to be organized in a very complex way making the interrelationships between the components difficult to identify and to analyze.[2] State systems of higher education fit this description of complexity.

Ideally, there should be an absence of conflict in a system allowing the interactions of the components of the system to be coordinated and maximized in order to produce the optimum output for which the system is intended. But, in reality, there are no conflict-free systems. As Katz and Kahn observe, the patterns of relationships within an organization are always vulnerable

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[1]James D. Thompson, Approaches to Organizational Design (Pittsburgh: University of Pittsburgh, 1966), p. 183.

[2]Ryans, op. cit., p. 81.

to dysfunction as a result of conflict occurring within the system.[1]

James D. Thompson suggests that "where there is a high degree of conflict among the elements of the organization set, such conflict may tend to cancel out their effect on the focal organization, thus affording it more autonomy than would otherwise be the case."[2] An example of this phenomenon in a state system of higher education would involve a situation where the state-wide board finds it impossible to bring coordination to the system due to the high degree of conflict among the individual institutions. Unless the conflict is resolved, the "focal organization," i.e., the individual institution, could continue to act in a relatively autonomous manner.

Historically, most state-wide boards have been established in a state climate characterized by a high degree of competition between institutions for the scarce resources provided by the legislature. Glenny observes that the establishment of central boards has often been met with hostility "when they terminate the oligopoly type of competition which is called 'unfair' in the business world, even though these 'cease and desist' coordinating practices also tend to remove higher education

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[1]Katz and Kahn, op. cit., pp. 107-108.

[2]Thompson, op. cit., p. 181.

from the partisan and pressure-group politics of the state."[1]

As suggested earlier, conflict may even be necessary to the existence of the system. It is the control of conflict that is important to the survival of the system.

SUMMARY

This chapter has been devoted to describing state systems of higher education in terms of concepts used by Katz and Kahn in defining the subsystem structures of organizations. These conceptual approaches will serve as bases for the formulation of the study design and research instruments to be described in the next chapter. It is the purpose of subsequent chapters to describe how these concepts were operationalized to study the control activities of state-wide boards and the effects of these activities on the perceptions of college and university presidents in the state systems.

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[1]Glenny, Campus and Capitol, pp. 38-39.

CHAPTER III

RESEARCH DESIGN AND METHODS OF STUDY

INTRODUCTION

The design for this study must be classified as exploratory. It is apparent from the survey of the literature provided earlier that this study will be concentrating on an area in which little has been written. Also, the speculative nature of the conceptual approaches discussed in Chapter II require the study to be considered exploratory.

The term exploratory, however, is not intended to be synonymous with "abstract" because the methodology used in the study will give it the practical orientation of a field study. As Blau and Scott indicate, "Field study does not approach the controlled experiment in rigor of design and hence in validity of conclusions, (but) the use of it permits a combination of systematic research procedures concentrated on a single object of study that can yield data of considerable scientific value."[1]

Preliminary to a presentation of the findings of the study, this chapter describes the limitations of the study, the hypotheses to be investigated, the sources of the data, the characteristics of the respondents, the methods of operationalizing the variables in the study,

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[1]Peter M. Blau and W. Scott, Formal Organizations: A Comparative Approach (San Francisco: Chandler Publishing Co., 1962), p. 20.

LIMITATIONS OF THE STUDY

The state coordination of higher education is a highly complex social process in a complicated network of human relationships. An immediate limitation faced in an exploratory field study of this type is the problem of dealing with only one or few of the variables involved in the system. It should be recognized that other variables, e.g. size, openness, complexity of organizational structure, and processes of decision-making in state systems, have been intentionally excluded from the study. The various reasons for not including these variables are discussed throughout the study.

Another limitation of the study is the high degree of irregularity evidenced among the policies and procedures of various state systems. The wide range of responsibilities assigned to central boards and the dissimilarity of functional procedures among the states make it difficult to create the common denominators needed for valid comparisons between states. These problems of irregularity have made the operationalizing of the variables more difficult as the researcher sought descriptions of the most important control variables to which the majority of the respondents could relate. Consequently, the search for terminology that would communicate to respondents in a wide range of states was a problem and a definite limitation to the study.

It could be noted at this point that one of the anticipated limitations of the study did not materialize. As

the research design was being prepared, numerous advisors cautioned that any study requiring long and detailed responses from the presidents of public colleges and universities would be handicapped from the outset by an insufficient response. The response, as will be described later in quantitative terms, was surprisingly strong cancelling one possible impediment.

In addition to these specific limitations, this study is afflicted by the usual limitations of exploratory field studies. Perhaps, the most significant of these limitations is the difficulty of generalizing the findings of the study. Therefore, it should be pointed out that the results and conclusions to follow are subject to the precautions common to speculative investigations in highly uncontrollable situations.

THE HYPOTHESES

While it is not required that exploratory studies construct and test hypotheses, a series of predictive statements which could be classified as non-rigorous hypotheses will be included to contribute precision and relevance to the analysis of the data. These statements are intended to complement the exploratory and descriptive aspects of the study. The limitations of the study mentioned earlier place constraints upon the weight of the conclusions to be derived from these hypotheses. However, with these qualifying conditions

defined, the hypotheses will be stated in three areas: hypotheses related to overall control in state systems of higher education; hypotheses related to the legitimacy of control in state systems; and hypotheses related to the evaluation of the performance of control in state systems.

Hypotheses Related to Overall Control

From the section describing the conceptual approach to this study, it was learned that Katz and Kahn theorize that the stages of organizational development move in this sequence--productive structures to maintenance and managerial structures to boundary and adaptive structures. Applying this premise to state systems of higher education, one might conclude that since the establishment of state-wide boards is a relatively recent phenomenon, the majority of state-wide boards will be in the earlier stages of development, i.e., the maintenance and managerial stage, at the present time. To test the validity of this conclusion, one might propose the following hypotheses:

> Hypothesis 1. In general, there will be more maintenance-type control activities performed by state-wide boards than boundary and adaptive control activities.
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> Hypothesis 2. There will be a positive relationship between the extent to which maintenance-type control is exercised in a state system and the length of time the state-wide board has been in operation, i.e., the longer the board has been in operation the greater the exercise of maintenance-type control.

Katz and Kahn also suggest that boundary structures and adaptive structures have an inherent relationship due to their common outward orientation toward the external environment. This premise implies that in state systems of higher education one would find a parallel development of these two structures.

> Hypothesis 3. The degree to which boundary structures are implemented by state-wide boards of higher education has a significantly positive relationship to the degree to which the adaptive structures are developed.

One might surmise from the evolutionary nature of organizational development that control in a total organizational sense is a cumulative phenomenon, i.e., the longer a state-wide board is in operation the more overall control it exercises through maintenance, boundary, and adaptive structures.

> Hypothesis 4. There will be a positive relationship between the degree to which overall control is implemented by a state-wide board and the length of time it has been in operation.

It would be helpful to know if the analysis of the scope and types of control activities performed by state-wide boards provides a better means for differentiating between the boards than the traditional categories, i.e., governing boards and coordinating boards. One might assume that state-wide boards classified as "governing boards" would exercise more control in maintenance-type activities than those boards classified as "coordinating boards." However, regarding boundary and adaptive

structures, it could be assumed that a significant number of state-wide boards classified as "governing" (and therefore not considered as strong on boundary and adaptive activities as the coordinating boards) might very well exercise a greater degree of boundary and adaptive control activities than boards identified as "coordinating" boards.

> Hypothesis 5. There will be a positive relationship between states exercising a high degree of maintenance control and the existence in those states of state-wide boards classified as "governing" boards.
>
> Hypothesis 6. There will be a positive relationship between states exercising a high degree of boundary and adaptive control and the existence in those states of state-wide boards classified as "coordinating" boards.

Hypothesis Related to the Awareness of Control

It is considered generally that maintenance control activities have a limiting and restricting impact upon the institutions in a state system of higher education. If this be true, it would seem reasonable to assume that, due to their somewhat negative character, maintenance control activities would produce a greater awareness of their presence. Consequently, if boundary and adaptive control activities have a more positive connotation; representatives of institutions are more likely to be somewhat unaware of their implementation. The following hypothesis gives opportunity to measure the congruence between the perceptions of officers in the state-wide boards and the perceptions of presidents of institutions in their states

concerning the performance of maintenance, boundary, and adaptive control activities.

> Hypothesis 7. There will be a higher percentage of congruence between the perceptions of the officers of the state-wide boards and the perceptions of presidents of the institutions regarding the performance of maintenance control activities than boundary and adaptive control activities.

Hypotheses Related to the Legitimacy of Control

One might surmise from the discussions by Victor A. Thompson regarding the effects of various types of control on the participants of a system that state-wide boards which exercise more maintenance control will evoke relatively negative attitudes on the part of the participants in the system. If this speculation has any basis in fact, it could be assumed that presidents in states in which there is a high degree of maintenance control will respond more negatively when given an opportunity to indicate whether a specific control action should be performed by the state-wide board than presidents in states where there is a moderate to low amount of maintenance control exercised. The following hypothesis will test this assumption.

> Hypothesis 8. Presidents in states where the state-wide boards exercise a high degree of control in maintenance, boundary, and adaptive areas will indicate a more negative response toward the legitimacy of the state-wide board performing these activities than presidents in states where the state-wide boards exercise lower degrees of control in these three areas.

A logical extension of Thompson's assumptions about the negative effects of excessive maintenance-type control

would suggest a predisposition among presidents in high maintenance control states against maintenance activities as opposed to boundary and adaptive activities.

> Hypothesis 9. Presidents in states where the state-wide boards exercise high maintenance control will indicate a more favorable attitude toward the legitimacy of the state-wide board performing boundary and adaptive activities than toward its performing maintenance control activities.

A final hypothesis related to the legitimacy of control is derived from Glenny's observations that although the establishment of state-wide boards is met usually with negative resistance on the part of presidents of the institutions that these feelings change in time to a more positive recognition of the value of the boards' contributions to a lessening of competition among institutions for fiscal resources. The following hypothesis will test the relationship between presidents' favorable attitudes on control and the length of time the state-wide board has been in existence.

> Hypothesis 10. There is a positive relationship between the length of time a state-wide board has been established and the degree to which presidents in the state express favorable responses toward the legitimacy of the state-wide board performing control activities.

Of course, a positive correlation would signify only coexistence between the variables of time and favorable responses. It would not imply a causal relationship in any way. Other possible causal alternatives would include the speculation that favorable responses could be the result of new, more favorable replacement personnel

in presidential positions rather than of the positively-changed attitudes of presidents of continuous tenure.

Hypotheses Related to Performance Evaluation

Some of the literature on state-wide boards suggests that the so-called "emerging state universities," i.e., typically teachers' colleges and undergraduate state colleges recently elevated to university status with the addition of limited graduate programs, are more receptive to the control exercised by state-wide boards. The rationale for this assumption is that these institutions stand a better chance of getting their fair share of the state's resources under the formalized auspices of the state-wide board. By the same token, the large, major universities have been said to prefer what Glenny has called "the oligopoly type of competition"[1] which favors the larger institutions with their more powerful lobbies and formidable political leverage.

> Hypothesis 11. In general, presidents in state colleges with graduate programs will indicate a more favorable evaluation of the state-wide boards' performance of control activities than the presidents of state universities.

It is also important to know the effects that differences in the scope and types of control exercised in various states have on the perceptions of presidents in those states regarding the performance of the state-wide board in maintenance, boundary, and adaptive control

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[1]Glenny, Campus and Capitol, p. 38.

activities. To determine these effects, it should be possible to categorize states having state-wide boards into at least eight types according to the extent to which maintenance, boundary, and adaptive activities are performed in the states. The possible categories are illustrated in Figure 1 on the following page. After determining the appropriate typology for each state to be included in the analysis, the investigator can compare the differences in performance evaluations for various control activities reported by the presidents in the selected types of states. The following hypotheses should be tested.

> Hypothesis 12. States categorized as Type II will record the lowest performance evaluations of all categories.
>
> Hypothesis 13. States categorized as Type VII will record the highest performance evaluations.

These hypotheses are based on the speculation that state-wide boards exercising a high degree of maintenance control exclusive of significant boundary and adaptive activities will create a type of control climate in a state that is perceived as negative and ineffective. On the other hand, it is surmised that state-wide boards exercising a low degree of maintenance control accompanied by the implementation to a high degree of boundary and adaptive control activities (which should be perceived in a more positive way) will evoke more positive performance evaluations from presidents in those states.

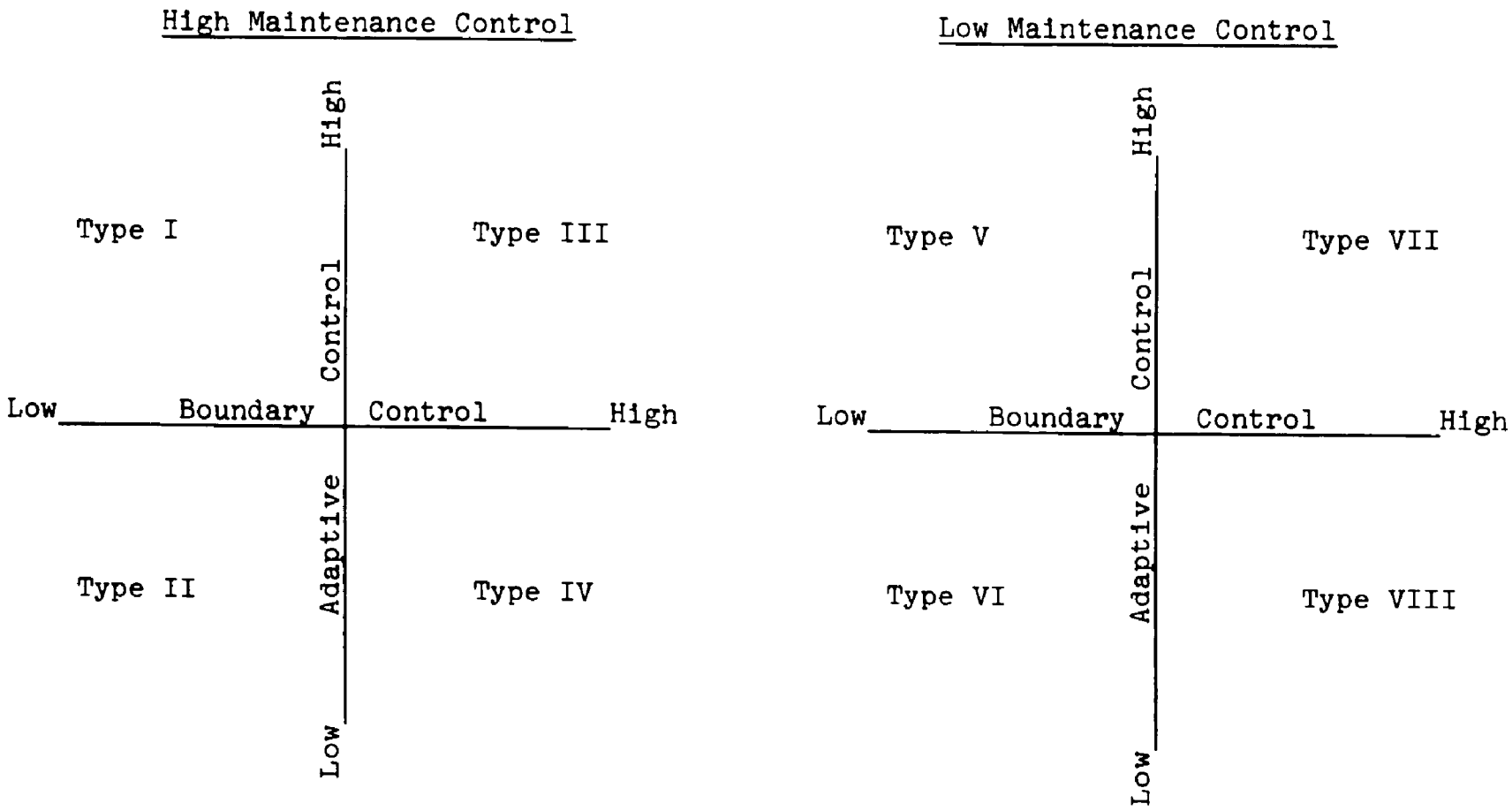


Fig. 1.--State Control Typologies

SOURCES OF THE DATA

The data for this study were obtained from three sources--state-wide boards of higher education, presidents of public colleges and universities in states having state-wide boards, and questionnaires from state-wide boards returned previously as a part of the Pliner and Lindsay study conducted in December, 1965.

Using the data obtained in the Pliner and Lindsay study as a preliminary guide, state-wide boards were identified for inclusion in the study. All states described in the Pliner and Lindsay study as having a governing or coordinating state-wide board were included in the original sampling of this study. States listed as having a voluntary pattern of coordination were not included. States having only one institution, e.g., Alaska and Nevada, were not included. Also, states with unusual or dichotomous organizational patterns, e.g., California and New York, were mailed questionnaires, but returns from those states will be excluded appropriately from various parts of the analysis due to the incompatibility of the data and the difficulty of making comparative judgments from them.

It should be noted parenthetically that the most useful directory of state-wide agency personnel was published shortly after the completion of the state survey phase of this project and has served as a valuable

document against which to verify previous inclusions in the study.[1]

There were thirty-four state-wide boards included in the original survey. These states are: Arizona, Arkansas, California, Colorado, Connecticut, Florida, Georgia, Idaho, Illinois, Iowa, Kansas, Kentucky, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Texas, Utah, Virginia, and Wisconsin.

A master list of presidents of public colleges and universities excluding two-year colleges and special purpose institutions was compiled from the states listed above. The source of this information was the Education Directory, 1966-67, Part 3.[2] There were 306 presidents of public colleges and universities included in the presidential survey.

Data were obtained from the 1965 study conducted by Pliner and Lindsay entitled Coordination and Planning[3]

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[1]Robert Marsh and Donald H. Winandy, Statewide Coordinating Agencies and State Commissions for Federal Programs in Higher Education-1968, A Directory of Professional Personnel (Springfield, Ill.: Association of Executive Officers of Statewide Coordinating Boards, 1968).

[2]Education Directory of the Office of Education, 1966-1967, Part 3 (Washington, D. C.: U. S. Government Printing Office, 1967).

[3]Emogene Pliner and Hubert C. Lindsay, Coordination and Planning (Baton Rouge, La.: Public Affairs Research Council of Louisiana, Inc., 1966).

to complement and corroborate the information received from responding state-wide boards in this survey. Authors Pliner and Lindsay furnished photocopies of all instruments returned by state-wide boards in the previous study.

CHARACTERISTICS OF THE RESPONDENTS

A questionnaire, "State Boards of Higher Education, A Functional Inventory," was completed by thirty of the state-wide boards. Not responding were California, New Jersey, New York, and South Carolina. California and New York replied that they were unable to adapt their responses to the questionnaire without distorting the role and functions of the agencies to which the inquiries were directed.

The questionnaire was directed to the chief executive of the state-wide board. Nearly all of the responses received were accompanied by some personal comment to indicate that the inquiry had received the attention of the chief executive or some staff member designated by him.

Thirteen of the state-wide boards responding were classified in the Pliner and Lindsay study as governing boards. A substantial number of the state-wide boards in the study have recent origins; six of them were established between 1951 and 1959, while ten of them have been created since 1960. Twelve of the responding fourteen boards that were established prior to 1945 identified themselves in the Pliner and Lindsay study as governing boards.

Another questionnaire, "Survey of Presidential Opinion Regarding the Coordination of State Higher Education," was mailed to 306 presidents of public four-year colleges and universities in the 34 states surveyed with the state-wide board instrument. A follow-up letter and questionnaire were sent to encourage response. There were 205 (67%) questionnaires completed and returned by the presidents.

Among the 205 presidential respondents, there were 69 presidents (35%) who had been in their present positions 5 years or less. Another 51 presidents (26%) had served in their present positions 6-10 years. The remaining 85 presidents (39%) had served more than 10 years.

The responding presidents represented the following types of institutions: four-year colleges, 27 (13%); state colleges with graduate studies, 80 (39%); and universities, 98 (48%). Regarding the size of their institutions, the responding presidents indicated that their colleges and universities were in the following categories: enrolments of 2,000 or less, 34 (17%); enrolments of 2,001 to 12,000, 121 (59%); and enrolments 12,001 and more, 50 (24%).

From the original survey of thirty-four state-wide boards and of college and university presidents of public-supported institutions in the thirty-four states, a group of twenty-five states was selected for analysis. This

selection was based on several criteria, e.g., the number of public-supported institutions, the number of presidential respondents, and miscellaneous characteristics that might make these states untypical of governing boards or coordinating boards. (See Appendix II for complete tables on the twenty-five states selected.)

There were 215 potential respondents among the presidents in the 25 selected states. Questionnaires were returned by 162 (75.3%) of them. There were 46 potential respondents from four-year colleges with 34 (74.9%) actually responding. There were 66 (69.5%) actual respondents from a potential of 95 presidents of state colleges with graduate programs. Out of the potential 74 respondents from universities, there were 62 (83.6%) actual respondents. The generally high rates of response from all categories were sufficient for the analyses to be done in the study.

Personal letters and notes were received from a significant number of presidents responding to the questionnaire to indicate that the chief executives of these institutions did give attention personally to the survey.

OPERATIONALIZING THE VARIABLES

In order to transform theoretical concepts about maintenance, boundary, and adaptive structures in open systems into operational terms that could be identified and measured, it was necessary to prepare a comprehensive

list of the possible activities that might be performed through such structures. No list of this type was available in the literature on state-wide boards. The most helpful enumeration of these kinds of activities was found in the previously cited Pliner and Lindsay study. With the aid of this study and the authoritative opinions of colleagues at the Center for the Study of Higher Education, The University of Michigan, a preliminary list of activities was prepared. Since the total number of state-wide boards was small, it was decided that a pretest of the questionnaire would be impractical. If the first mailing of the questionnaire had indicated that the activities included were unsuitable, a revision would have been distributed to the entire list. Fortunately, the original questionnaire proved adequate in design and content for the study.

The same list of activities related to maintenance, boundary, and adaptive control was prepared under a different title for use with presidents of public colleges and universities in the same thirty-four states. Consequently, the two questionnaires differed only in the types of questions asked about the list of control activities.

The activities used in the questionnaires to measure various aspects of maintenance control structures were: financial control activities, facilities control activities, curriculum control activities, faculty control activities, and student control activities. For each of

these areas three distinctive and specific control activities were identified.

As noted in the previous chapter, maintenance activities are performed primarily to assure order and stability in the operation of a system. In a state system of higher education this means the regulation of such inputs into the system as financial resources, physical space resources, and manpower resources, e.g., faculty and student inputs to the system. System outputs such as graduates and services are regulated by governing the inputs mentioned in the previous statement and by the control of curriculum which determines the types of outputs produced by the system.

In the area of financial activities, it was determined from the Pliner and Lindsay study and from the Miller study[1] that it is likely that state-wide boards will perform either a consolidating function, a formula implementation function, or an allocation function in their participation in the process of funding the colleges and universities. Facilities control activities as seen in the literature on state-wide boards appear to relate to the recommending of land and space requirements for proposed institutions, to the approval of the establishment of new institutions or campuses, and to the approval of construction for new buildings on existing campuses.

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[1]James L. Miller, Jr., State Budgeting for Higher Education: The Use of Formulas and Cost Analysis (Ann Arbor, Mich.: Institute of Public Administration, The University of Michigan, 1964).

While the literature is somewhat vague on the control activities performed with relation to curriculum and programs, it was apparent from the questionnaires returned in the Pliner and Lindsay study that state-wide boards exercised a range of activities from the very general action of establishing criteria for new programs to recommending priorities in the system for new programs, e.g., where the next medical school may be located, and to approving the establishment and/or the discontinuance of specific programs on individual campuses. State-wide board involvement in faculty control activities parallels activities in the curricular area, i.e., moving from broad criteria for faculty to the actual approval of individual faculty members' appointments on specific faculties.

In the area of controlling student inputs into the system, the basic activities seemed to revolve around the total numbers of students by levels to be admitted to the system, the numbers of out-of-state students permitted within the system, and the establishment of tuition and fees for the institutions in the system.

The second major control structure to be operationalized in the study was the area of boundary control activities. The discussion of the conceptual approach pointed out that boundary activities have to do with the exchanges of the system with its environment, specifically with the procuring of resources for the continued operation of the system and for the disposal of the outputs

from the system. It was noted that the boundary activities of a state system of higher education relate the system not only to the larger societal environment in which it exists, but also to other systems within that environment. These related systems include the state legislature, the executive branch of state government, and the Federal government.

State-wide boards as seen from the literature appear to perform at least three significant types of boundary activities: liaison activities primarily with the legislature and the governor; information transmission activities to the public and from the public back to the system; and interpretation activities seeking support for higher education from general and specific publics.

Liaison activities identified in the Pliner and Lindsay study seemed to be related almost exclusively to representation of the system before the legislature and the governor regarding financial resources. Therefore, the activities included in this section range from the performance of merely a transmittal function between the institutions and the legislative or executive bodies to the actual scheduling of appearances by representatives of state institutions before legislative hearing committees.

In the area of informational activities the action flows two ways--out of the system to the general public and into the system as the systemic "radar" picks up signals in the larger environment from anticipated events

that could affect higher education significantly and relays them to the system. Interpretive activities are seldom mentioned in the literature on state-wide boards. The activities included under this section were identified from discussions with the help of colleagues experienced in the operation of central boards. These activities include general actions usually considered as public relations, specific campaigns for gaining support for higher education, and group mobilization activities to bring task forces of specialized knowledge and skills to bear on specific higher education problems.

A third major area--adaptive activities--was described in the general literature on state-wide boards as including research, planning, and experimentation actions. The respondents in the Pliner and Lindsay study verified these inclusions.

Within the scope of research, Katz and Kahn identified three basic types of research activities--direct operational feedback, operational research, and systemic research.[1] Operational feedback is little more than the systematic collecting of the data necessary to keep the system in operation. State-wide boards routinely gather and use these data primarily in the areas of financial and facilities control. Operational research, on the other hand, is directed toward the improvement of the

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[1]Katz and Kahn, op. cit., pp. 248-252.

operations of the system either in terms of the products it produces or its methods for producing them. State-wide boards perform operations research activities when they conduct or contract for studies to improve the effectiveness of the institutions in the system. The highest level of research described by Katz and Kahn is systemic research. Systemic research like operational research seeks new information, but its target is the functioning of the total system in relation to its changing environment. In state-wide boards, systemic research is operationalized in studies conducted by the board into the long-range requirements for higher education in the state based upon the significant changes that can be anticipated in the societal environment.

A second subordinate area under adaptive activities is planning. It is likely the most extensively discussed activity of state-wide boards in the literature. It is apparent from the literature and the Pliner and Lindsay study that some state-wide boards merely serve as a "clearing-house" to consolidate the individual institutions' plans into a single document without attempting to synthesize the plans into a comprehensive, unified plan. Another type of planning activity performed by state-wide boards is the recommending of goals, priorities, and actions to meet higher educational needs in the state. Increasingly the most common form of planning activity among state-wide boards is the development

of a state long-range plan for higher education, usually described as a state "master plan."

As an adaptive control activity, experimentation is apparently as absent from the literature on state-wide boards as planning is prevalent. Identification of specific activities in this area was dependent again upon the informal discussions of colleagues experienced in state-wide board operations. Some state-wide boards do function as a center for the dissemination of information regarding experiments in specific institutions to improve instruction and general operations. A relatively few agencies have been known to conduct occasional seminars to foster experimentation on the part of individual colleges and universities. Perhaps, the most sophisticated activity in this area is the maintenance of a special fund for the purpose of making stimulation grants to institutions attempting worthwhile experiments in instruction and operations.

The variables discussed in this section were the basis for a list of thirty-three basic control activities to serve as the operational foundation for the study.

CONSTRUCTION OF THE INSTRUMENTS

Using the operational variables described in the previous section representing maintenance, boundary,and adaptive activities, instruments were prepared to measure subjects' responses to these activities. Each of the

thirty-three control activities appeared on the state-wide board questionnaire and the presidential questionnaire in identical wording.

The questionnaire sent to state-wide boards was designed primarily to obtain from the board a specific list of the control activities it was performing. Also on the questionnaire were spaces in which the state-wide board could indicate in cases where it did not perform a specific activity whether that activity was being performed with other agencies or by some other state agency. This additional information was gathered as a precaution in case certain states lacked congruity between the control activities reported by the board and those reported as perceived by the college presidents. Such incongruities could be explained in part by the existence of other agencies in the state performing part or all of those specific control activities. In a sense, these additional questions provided the researcher with a better picture of the pervasiveness of control in a given state.

The questionnaire designed for presidents included the same thirty-three control activities used in the state-wide board instrument, but gave the respondents an opportunity to indicate their perceptions regarding the right of the board to perform those activities, regarding the actual performance of those activities by the board, and regarding the relative effectiveness with which the board was performing the activity.

The legitimacy of the thirty-three control activities, i.e., the perceptions of the presidents regarding the activities that state-wide boards "should" be performing, provides a helpful descriptive input into the study. First, there are no comprehensive data of this type available in the current research literature on state-wide boards. Also, there is the question of a possible relationship between the perceptions of presidents regarding the legitimacy of an activity and their perceptions of the effectiveness of the performance of that activity. A related question of interest is the perception of presidents regarding the legitimacy of maintenance activities as opposed to boundary and adaptive activities. Finally, there are the possible relationships between presidents' perceptions of legitimacy and the types of control exercised in their states, the types of institutions in which they serve, and the length of time the state-wide board has been in operation in their states. (See Hypotheses 8-10 in the previous section "The Hypotheses.")

The accuracy with which a president can identify the actual performance of a particular control activity in his state has a relationship to the reliability of his subsequent evaluation of that and other control activities. Obviously, one would have reason to doubt the reliability of performance evaluations submitted in the context of a high degree of inaccuracy in perceiving the actual

performance of specific activities. Therefore, space was provided on the presidential questionnaire for the respondent to indicate whether he perceived the state-wide board as actually performing a particular control activity or not.

The most significant part of the questionnaire as far as the essential hypotheses of the study were concerned was the opportunity provided for the president to indicate in terms of a five-point scale his evaluation of the performance of the state-wide board on each particular control activity. The descriptive points on this scale with reference to the performance of each activity were: "Poorly," "Inadequately," "Acceptably," "Well," and "Very Well." The scale appeared in this form in the questionnaire:

HOW WELL DOES IT PERFORM THIS ACTIVITY?



Very Well Well Adequately Inadequately Poorly

No attempt was made to define these five terms for the respondents under the assumption that further explanation of the terms would serve only to complicate the decision-making process and would have an adverse effect on the number of responses that could be obtained from presidents.

There are some rather obvious advantages to using a questionnaire to collect data from a moderate-size sample

scattered throughout thirty-four states. The questionnaire enabled the investigator to gather pertinent information in a manner conducive to responses from busy presidents and to have those data in a standarized form practical for analysis.

Of course, there are also definite limitations to the use of questionnaires in this type study. The questionnaire imposes certain limitations on the scope and amount of information that can be collected. It does not allow for a dialogue of clarification between the researcher and the respondent. These limitations were accepted in this study in order to include all qualified states in the investigation.

VALIDITY AND RELIABILITY

The validation of instruments to be used in an exploratory field study such as the one under discussion is an inexact science to say the least. The exploratory nature of the project introduces an instability difficult to cope with in validating the instruments. A lack of control in field studies also adds to the problem.

Validity refers to the extent to which the instruments actually measure what the researcher wishes to measure. It can be affected by a number of factors such as relevance, rationality, freedom from bias, reliability, and significance.

The validity of the instruments in this study depends primarily upon the research studies in fields other

than higher education which formed the content of the conceptual approach to the study. It is not possible to have an adequate criterion for determining whether the adaptation of these structures to the functional activities of systems of higher education will measure in fact the relationship of these structures to attitudes and evaluations of participants in the system regarding control.

An attempt has been made to keep the study free from bias by the careful selection of statements to be included in the instrument, by the inclusion of all states having boards meeting minimal criteria of size and organizational structure, and by the inclusion of all presidents of public colleges and universities in these states in the study.

The construct validity of the instruments will have to become apparent as the results of the analysis are compared with the hypotheses and the conceptual approach proposed.

Reliability, too, poses a serious problem in an exploratory field study. It is defined as the degree of variance that may exist in scores due to random error. The standard reliability measures, e.g., the repetition of the same test or measure, the administration of a second "equivalent" form of the test, or the subdivision of the test into two or more equivalent fractions, are not applicable to this study. The study is based on a one-time

measure of perceptions in a constantly changing situation which makes retesting impossible. The subdivision of the test into equivalent fractions assumes a weighting of items in the study which again is not applicable.

If one considers the president in a particular state as an independent respondent from his state, there is a reliability of agreement that can be measured between equivalent respondents. Since the questions involved represent fixed alternative responses, it is possible to determine the likelihood that the respondents within a given state would have evidenced a specific level of agreement merely by chance. This approach employs probability theory and the binomial distribution. It requires fixed alternative responses which the questionnaire for the presidents provides in the "yes-no" answers for the legitimacy and awareness questions and the five-point scale answers regarding performance of the state-wide board on each control activity. Using this method, the probabilities (P) indicate the likelihood that a specific number of respondents would have reached their actual level of agreement on the indicated activities by chance. In this sense, the probabilities (P) serve to show the significance level at which there is some agreement on reality not merely chance. As a measure of the reliability of the instruments, probabilities will be determined regarding presidents' answers to the question of their awareness of the performance of a specific control activity in their state. A table will

be constructed to determine how many presidents in each state responded in agreement with the state-wide board's response as to the performance of the activity. Thus, the number of presidents out of the total state N agreeing "correctly" that the state-wide board is in fact performing an activity can be compared with the binomial distribution table to determine if the level of agreement among the presidents is higher than could have been obtained merely by chance.

TREATMENT OF THE DATA

The procedures and techniques used in handling the data gathered in the state-wide board and presidential surveys are described in this section. They include coding, scoring, and analyzing the data.

Coding the Data

The data received in the survey of state-wide boards were tabulated by state to produce four categories of scores, i.e., an index score for the degree to which maintenance, boundary, and adaptive control activities were performed in the state plus a composite index for the three areas. Other data obtained from the Pliner and Lindsay study, e.g., the type of state-wide board, the date of its establishment, the number of professional staff, etc., were coded into discrete frequencies where possible to provide for the rank order statistical techniques that would be applied.

The data received in the presidential survey were coded initially by the state and institutional identification numbers. Three frequencies were established for tabulating the length of time the respondent had been in his present position, the type of institution in which he was serving, and the size of that institution. Two categories were used to tabulate the fixed alternative responses obtained regarding the legitimacy of the state-wide board performing each of the thirty-three maintenance, boundary, and adaptive control activities listed on the instrument. A similar coding pattern was established for handling the "yes-no" responses obtained to the questions regarding the actual performance of each of the thirty-three control activities by the state-wide board in the respondent's state.

The performance evaluation portion of the presidential questionnaire called for the president to indicate on a five-point scale his evaluation of the performance of the state-wide board on each activity actually being performed in his state. Since some of the thirty-three activities likely were not being performed in his state, the respondent could leave some items blank thus requiring a range of frequencies from zero to five for each of the thirty-three activities listed.

Scoring the Data

The data received from the state-wide boards were scored by a simple rating scale that applied a value of one to each control activity in the areas of maintenance,

boundary, and adaptive control being performed by the state-wide board or some other agency in the state. Since there were fifteen items related to maintenance control and only nine items each for boundary and adaptive activities, it was necessary to convert the raw scores into percentile scores to obtain uniformity. An overall control index for each state was obtained by averaging the maintenance, boundary, and adaptive scores.

The performance evaluation data indicated how the state-wide board performed each item according to the following scoring pattern: zero (not performing or no response), one (performing poorly), two (performing inadequately), three (performing adequately), four (performing well), and five (performing very well). State-wide boards with high average total scores on items received favorable performance evaluations. The responses from specific states and later from various types and categories of states were tabulated to provide mean scores for each basic activity and for each of the major control areas, e.g., maintenance, boundary, and adaptive areas.

The Variables Used in Analysis

Relative to the state-wide boards of higher education, the variables used in analysis of the data included: (1) the maintenance control index score of the state; (2) the boundary control index score of the state; (3) the adaptive index control index score of the state; (4) the total control index of the state; (5) the length of time the state-wide

board had been established; and (6) the type of state-wide board, e.g., governing or coordinating.

Variables related to the analysis of presidential responses included: (1) the length of the presidential respondent's tenure; (2) the type of institution in which he served, e.g., college, state college with graduate studies, or university; (3) the size of the institution he served; (4) the preferences for the legitimacy of various control activities; (5) the perceptions regarding the actual performance of control activities in the respondent's state; and (6) the evaluations of the respondent regarding the performance of the state-wide board on each of the control activities.

Statistical Techniques Used in Analysis

The analyses to be performed in this study do not require complex statistical techniques. The descriptive techniques used, e.g., distributions, means, etc., require no discussion. The requirements of the study do not call for the use of inferential techniques to generalize the findings of the study to larger populations.

Analysis and comparison of the state-wide boards required the use of some method of rank correlation for describing how two ordinal variables tend to vary together. The Spearman rho method of rank correlation was selected since the sample size was large enough to eliminate the necessity of using the Kendall tau technique. Spearman's rho has two advantages over the Kendall tau technique:

(1) it belongs to the family of product-moment coefficients and if there are no ties, it is the precise product-moment correlation between two sets of ranks, and (2) ties are easier to handle with Spearman rho even though there is no theoretically perfect solution for tied ranks.[1] The Spearman rho rank correlation was useful in measuring relationships of states on maintenance, boundary, adaptive, and overall control and in terms of the length of time the state-wide board had been in operation.

In working with the two traditional typologies of state-wide boards, e.g., governing and coordinating types, it was appropriate to use the contingency coefficient as a measure of the extent relationship between these two typologies and other measures such as the extent of overall control exercised by state-wide boards identified within these categories. Since the state-wide board typologies provide only nominal information, the contingency coefficient (C) offers a means of describing the association between this attribute and other attributes without requiring that the categories be ordered in any particular way. The contingency coefficient utilizes the computation of a chi-square test by ascertaining the probability associated with the occurrence under H_o of values as large as the observed value of chi-square, with df=(k-1)(r-1).

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[1]Philip H. DuBois, An Introduction to Psychological Statistics (New York: Harper and Row, Publishers, 1965), p. 94.

If the probability is equal to or less than the preselected level of significance, the null hypothesis may be rejected at that level of significance.[1] While the contingency coefficient is limited in the following ways: it cannot achieve unity of association, i.e., where the coefficient should equal one; the upper limit of C depends on the sizes of k and r; the data must be amenable to the computation of chi-square; and C is not directly comparable to any other measure of correlation it is still an extremely useful measure of association because of its wide applicability, especially with nominal data.

In analyzing the responses of presidents regarding their perceptions whether each of the thirty-three control activities on the questionnaire was in fact being performed by the state-wide board in the respondent's state, it was necessary to determine if the number of "accurate" responses, i.e., the number of responses congruent with the responses of the state-wide board regarding the same activities, was greater than could have been attained merely by chance. The questions involved were fixed alternative questions requiring "yes" or "no" answers. The probability of specific numbers of respondents agreeing merely by chance can be determined by the use of binomial distribution tables mentioned in an earlier discussion

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[1]Sidney Siegel, Nonparametric Statistics for the Behavioral Sciences (New York: McGraw-Hill Book Co., Inc., 1956), p. 199.

of reliability. The probabilities (P) that respondents would have reached their actual level of agreement merely by chance is actually the significance level at which there is agreement which is greater than chance agreement.

In analyzing presidential responses using the variables described in the preceding section, statistical techniques for testing the differences between correlated means were used. Primarily, the procedure involved the application of t tests to the data on the performance of statewide boards on each of the thirty-three control activities and to the variables related to the respondents themselves.

SUMMARY

This section has described the design of the study and the methods employed to gather and analyze the data. Specific hypotheses to be investigated were proposed and will become the organizational framework for the following chapter on analysis.

CHAPTER IV

ANALYSIS OF THE SCOPE AND TYPES OF CONTROL PERFORMED BY STATE-WIDE BOARDS OF HIGHER EDUCATION

INTRODUCTION

An analysis of the scope and the types of control exercised by state-wide boards of higher education is crucial to the purpose of this study. In the previous chapter, hypotheses were proposed concerning the effects of various types of control activities on the development of state-wide boards. It will be the intent of analyses reported in this chapter to define the results of the study in relation to these hypotheses and to discuss the significance of these results.

A second major area of concern in this study is the relationship of the scope and types of control exercised by a state-wide board to the evaluation of the board's performance by college and university presidents in the state. The results and discussion related to performance evaluation will be reported in Chapter V.

In this chapter and in Chapter V, a basic pattern will be followed for reporting results and discussion. Each hypothesis will be stated and explained if necessary. The results of the study related to each hypothesis will be given with appropriate references to tables in The Appendix carrying more comprehensive data. A discussion of the implications of the findings will be included for each hypothesis. There will be a summary at the end of each chapter to give a concise overview of the results of the study.

However, before beginning discussion of the hypotheses in the study, attention should be given briefly to establishing the level of reliability which can be attributed to the results reported.

AGREEMENT OF PERCEPTIONS AS A RELIABILITY MEASURE

The reliability of instruments pertains to the variability in scores among respondents that can be attributed to random error in measurement. One of the primary approaches to establishing the relative reliability of an instrument is to determine the equivalence of the responses obtained when measuring the same phenomenon at the same time by different observers. If the individual president within a given state can be considered as an independent observer respondent, the equivalence obtained in responses from these independent reporters provides a measure of the reliability of the instrument.

The probability (P) that N respondents in a specific state will agree on the performance or non-performance of each control activity in the instrument becomes an indicator of the level of significance which can be attributed to their agreement. By application of the binomial distribution tables to each response group, one can determine whether the obtained level of agreement could have been achieved by chance.

The maintenance control activities in Table 1 are divided into five main categories each containing three

specific control activities. The five categories and the activities for each are listed here for assistance in analyzing the table.

Financial Control Activities

1. Consolidate institutional budget requests for transmittal only without recommendations to governor and/or legislature.
2. Establish formulas as bases for institutional budget requests.
3. Allocate operating funds to individual institutions after appropriation has been made in lump sum to board.

Facilities Control Activities

1. Recommend land and space requirements for new or proposed institutions.
2. Approve the establishment of new institutions or campuses.
3. Approve construction of new buildings for individual institutions.

Program Control Activities

1. Establish broad criteria for establishing new academic programs in the state.
2. Recommend priorities in state system for establishing new academic programs.
3. Approve the establishment and/or discontinuance of academic programs at individual institutions.

Faculty Control Activities

1. Establish broad criteria for faculty in state institutions.
2. Establish salary schedules, promotion policies, and/or tenure policies for faculty in all state institutions.
3. Approve appointment of new faculty for individual institutions.

Student Control Activities

1. Establish upper limits for total numbers of students enrolled in state institutions.
2. Establish limitations governing the proportion of students enrolled in state institutions (in-state vs. out-of-state, etc.)
3. Establish rates for student tuition and fees.

TABLE 1

SIGNIFICANCE OF AGREEMENT (P) BETWEEN PRESIDENTS REGARDING MAINTENANCE CONTROL ACTIVITIES[1]

State	N[2]	Fiscal Control			Facilities Control		
		1	2	3	1	2	3
Arizona	3	.50	.12	.87	.12	.12	.12
Arkansas	5	.81	.03	.03	.03	.81	.03
Colorado	8	.36	.64	.03	.03	1.00	*
Connecticut	5	.19	.03	.03	.50	.03	.50
Florida	4	1.00	.06	1.00	.06	.31	.69
Georgia	9	.25	*	*	*	*	*
Illinois	7	.94	*	.72	*	*	*
Kansas	6	.89	.01	.11	.34	.11	.01
Kentucky	5	1.00	.03	.03	.97	.97	.03
Massachusetts	5	.19	.50	.19	.81	.03	.97
Michigan	9	.09	*	*	.91	.25	*
Mississippi	5	.81	.19	.03	1.00	1.00	.03
Missouri	10	.62	.05	*	.62	.95	.99
Montana	4	.69	.31	.06	1.00	.31	1.00
New Mexico	4	.31	.94	.06	.94	.06	.06
North Carolina	11	.03	*	*	*	.72	*
North Dakota	6	.34	.01	.98	.34	.34	.01
Ohio	7	1.00	.01	.06	.77	.01	.77
Oklahoma	7	.22	.01	.01	.22	.50	.22
Oregon	3	.87	.12	.12	.12	.12	.12
South Dakota	5	.97	.03	.81	.19	.81	.03
Texas	12	.07	*	*	.81	*	.61
Utah	3	.50	.87	.50	1.00	1.00	.12
Virginia	9	.25	.02	.02	.98	.09	*
Wisconsin	10	.83	.63	.38	.01	*	.01

*Significant at less than the .01 level.

[1]See Appendix I for complete description of maintenance control activities.

[2]P=.50.

TABLE 1--Continued

State	N[2]	Program Control			Faculty Control		
		1	2	3	1	2	3
Arizona	3	.12	.50	.12	.87	.12	.12
Arkansas	5	.50	.19	.19	.03	.19	.03
Colorado	8	*	.03	*	*	*	*
Connecticut	5	.81	.19	.19	.19	.19	.19
Florida	4	.06	.06	.06	.31	.31	.31
Georgia	9	.09	.02	.02	*	.25	.02
Illinois	7	.50	.22	*	.06	*	.06
Kansas	6	.34	.11	.01	.11	.34	.98
Kentucky	5	.81	.50	.19	.03	.03	.03
Massachusetts	5	*	.03	.19	.19	.03	.03
Michigan	9	.50	.75	.75	.09	.09	.09
Mississippi	5	.19	.81	.03	.19	.03	.03
Missouri	10	.17	.62	.99	.99	.17	*
Montana	4	.06	.06	.06	.94	.31	.06
New Mexico	4	.06	.31	.06	.06	.06	.06
North Carolina	11	.11	.50	.11	*	*	*
North Dakota	6	.11	.11	.01	.34	.34	.11
Ohio	7	.01	.06	.22	.01	.01	.01
Oklahoma	7	.01	.06	.01	.94	.94	.50
Oregon	3	.12	.12	.12	.50	.50	.12
South Dakota	5	.19	.19	.03	.19	.81	.50
Texas	12	*	*	*	.07	*	.19
Utah	3	.87	.87	1.00	.50	.50	.50
Virginia	9	.09	.50	*	.99	*	.02
Wisconsin	10	*	.05	*	.62	.99	.17

*Significant at less than the .01 level.

[1]See Appendix I for complete description of maintenance control activities.

[2]P = .50.

TABLE 1--Continued

State	N[2]	Student Control			
		1	2	3	
Arizona	3	1.00	1.00	.12	
Arkansas	5	.03	.03	.03	
Colorado	8	.64	.64	.96	
Connecticut	5	.50	.03	.19	
Florida	4	.06	.94	.31	
Georgia	9	.99	.99	.02	
Illinois	7	.77	.06	.06	
Kansas	6	1.00	.98	.01	
Kentucky	5	.03	.19	.03	
Massachusetts	5	.81	.50	.50	
Michigan	9	.02	*	.09	
Mississippi	5	1.00	1.00	.81	
Missouri	10	.82	1.00	.99	
Montana	4	.94	.94	.31	
New Mexico	4	.06	.06	.69	
North Carolina	11	*	*	.11	
North Dakota	6	1.00	.89	.01	
Ohio	7	.94	.94	.22	
Oklahoma	7	.99	1.00	.01	
Oregon	3	.87	.50	.12	
South Dakota	5	1.00	.81	.03	
Texas	12	.93	*	*	
Utah	3	.50	.87	.50	
Virginia	9	1.00	.99	.99	
Wisconsin	10	.83	.01	.38	

*Significant at less than the .01 level.

[1]See Appendix I for complete description of maintenance control activities.

[2]P=.50.

The probabilities (P) represented in Table 1 indicate the levels of significance that can be attributed to the responses of presidents in each state for each maintenance control activity listed in the questionnaire. Using the information furnished by the state-wide boards regarding the actual performance of a given activity, the presidents' responses in each state were analyzed in terms of the number of presidential respondents who agreed that a given activity was being performed.

The number of presidential respondents who "correctly" identified a given activity was used to determine the probability (P) that this level of agreement could have been achieved merely by chance. Lower values of P give the researcher more confidence that his findings did not result merely from chance, i.e., the greater the reliability of the data.

Determining what level of significance is acceptable in an exploratory study that does not presume to generalize its findings to a larger population becomes a subjective, relative matter. Forty-one per cent (41%) of the responses to maintenance control questions achieved a probability of .10 or lower. One could wish for a greater reliability, but must consider also the difficulty of obtaining higher levels of significance in states with a small number of respondents. Since only four of the twenty-five states had ten or more respondents, it would be difficult to achieve a high reliability.

It should be noted that the control activities receiving the highest agreement (P=less than .01) were rather evenly distributed throughout the five major areas. There was generally a higher level of agreement on facilities control items while student control activities were least reliable.

The least reliable single activity listed on Table 1 is Financial Control Activity 1. This item states a rather weak control activity, "Consolidate institutional budget requests for transmittal only without recommendations to governor and/or legislature." Subsequent items under financial control refer to "establish formulas" and "allocate operating funds" suggesting a hierarchy of state-wide board actions ranging from "consolidate" to "allocate." The identification by the respondent of items 2 or 3 should have assumed an inclusion of item 1 which apparently was not clear to a large number of respondents. This explanation would account for the contrastingly higher levels of agreement recorded for items 2 and 3 under financial control.

Activity 2 under Program Control also failed to record high levels of agreement. This activity, "Recommend priorities in state system for establishing new academic programs," is perhaps less clear due to the possibly ambiguous word "priorities." It is reasonable to assume that there was some confusion over the precise identification of what a priority was.

Items 1 and 3 under Student Control proved to be less reliable generally than other items in the maintenance control section with the exception of activity 1 under Financial Control. While there is no clear explanation for the difficulty in obtaining high levels of agreement on these two items, a partial answer may lie in the fact that there is usually a great deal of interaction between the institutions, the state-wide board, and the legislature over the matters of enrolment limits and tuition. In the complex negotiation of these controls, the actual base of power to control may be obscured.

Tables 2 and 3 contain the probabilities (P) related to boundary control questions and to adaptive control questions. The following lists of boundary and adaptive control activities are provided for use in analyzing the tables.

Liaison Control Activities

1. Compile individual institutional budget requests into a single document for transmittal without board recommendation to governor and/or legislature.
2. Recommend to legislature and/or governor appropriations for individual institutions or for entire state system as a whole.
3. Schedule and conduct all appearances of state institutions before legislative committees on appropriations.

Information Control Activities

1. Compile information on higher education needs in the state.
2. Collect information on trends in society that are likely to affect higher education in the state.
3. Analyze data and publish reports on anticipated changes in society likely to affect higher education in the state.

Interpretation Control Activities

1. Issue reports and informative bulletins to newspapers and interested public groups.
2. Coordinate and conduct organized campaigns to inform public of higher education needs.
3. Actively seek to organize public groups and influential citizens into task forces to meet specific higher education needs.

Research Control Activities

1. Collect data on the operation of higher education institutions in state.
2. Conduct and/or contract for research to improve effectiveness of institutions in state system.
3. Conduct and/or contract for research to anticipate the long-range needs of higher education in the state.

Planning Control Activities

1. Consolidate individual institutional plans and projections into a single document with a minimum of changes, i.e., merely serves a "clearing-house" function.
2. Recommend specific goals, priorities and actions to meet the state's future higher education needs.
3. Develop and maintain a comprehensive, long-range plan for state higher education.

Experimentation Control Activities

1. Gather and disseminate information on experiments to improve colleges and universities.
2. Conduct information and orientation meetings to foster experimentation in higher education.
3. Maintain special fund for stimulating experimentation in higher education (to be allocated by board upon submission of proposals from institutions).

In general, control activities listed under the boundary and adaptive categories proved to be slightly more reliable than maintenance control activities. Fifty-two per cent (52%) of the probabilities recorded for boundary activities were at the .10 level of significance or less. The percentage of probabilities at the .10 level or less for adaptive activities was fifty-three (53%).

TABLE 2

SIGNIFICANCE OF AGREEMENT (P) BETWEEN PRESIDENTS REGARDING BOUNDARY CONTROL ACTIVITIES[1]

State	N[2]	Liaison Control			Information Control			Interpretation Control		
		1	2	3	1	2	3	1	2	3
Arizona	3	.50	.12	.12	.12	.87	.50	.12	.87	.87
Arkansas	5	.97	.03	.97	.03	.50	.18	.03	.81	.81
Colorado	8	.96	*	.03	*	.99	.64	.36	.14	.36
Connecticut	5	.97	.03	.97	.03	.03	.03	.19	.03	.81
Florida	4	1.00	.31	.31	.06	.06	.31	.06	.31	.94
Georgia	9	.98	.25	.50	*	*	*	.02	.09	.50
Illinois	7	1.00	*	.22	*	.06	.06	1.00	.99	.06
Kansas	6	.89	.01	.11	.11	.11	.11	.89	.66	.89
Kentucky	5	1.00	.03	.97	.03	.03	.19	.19	.81	.19
Massachusetts	5	.50	.03	.50	.03	.19	.81	.50	.81	.50
Michigan	9	.09	.91	*	.25	.91	.91	.25	.75	.91
Mississippi	5	.18	.19	.19	.03	.50	.19	.81	.50	.50
Missouri	10	.01	.17	.99	.05	.05	.01	.01	.62	.98
Montana	4	.94	.06	1.00	.06	.69	.94	.69	.31	.94
New Mexico	4	1.00	.06	.69	.31	.94	.94	.94	.94	.94
North Carolina	11	.03	.11	*	*	*	.03	*	.50	.97
North Dakota	6	.65	.11	.11	.01	.34	.65	.11	.34	.65
Ohio	7	.94	.06	.50	.01	.22	.22	.22	.22	.77
Oklahoma	7	.50	.06	.22	.01	.06	.01	.06	.99	.50
Oregon	3	.50	.12	.50	.12	.12	.87	.12	.50	.50
South Dakota	5	.81	.03	.19	.19	.19	.81	.03	1.00	.50
Texas	12	.99	.07	*	*	*	.02	*	.61	.61
Utah	3	1.00	.12	1.00	.12	1.00	1.00	.12	.87	.87
Virginia	9	.98	.75	*	*	.50	.75	.02	.75	.09
Wisconsin	10	.95	.01	.83	*	.05	.38	*	.01	.83

*Significant at less than the .01 level.

[1]See Appendix I for complete description of boundary control activities.

[2]P = .50.

TABLE 3

SIGNIFICANCE OF AGREEMENT (P) BETWEEN PRESIDENTS REGARDING ADAPTIVE CONTROL ACTIVITIES[1]

State	N[2]	Research Control			Planning Control			Experimentation Control		
		1	2	3	1	2	3	1	2	3
Arizona	3	.12	.87	.50	.12	.12	.12	.50	.50	.50
Arkansas	5	.19	.50	.03	.50	.03	.03	.81	.50	.19
Colorado	8	*	.64	.14	.85	*	*	.14	.14	.14
Connecticut	5	.03	.19	.03	.19	.50	.19	.50	.50	.81
Florida	4	.06	.31	.31	.94	.31	.31	.69	.94	.31
Georgia	9	*	.02	.02	.50	.50	.99	.91	.91	.91
Illinois	7	.01	.99	.22	1.00	.06	.01	.77	.50	.22
Kansas	6	.01	.89	.34	.66	.89	.34	.11	.01	.01
Kentucky	5	.03	.19	.03	.97	.97	.50	.97	.19	.19
Massachusetts	5	.03	.19	.03	.19	.19	.81	.81	.50	.19
Michigan	9	.09	.98	.98	.09	.98	.91	.02	.02	.02
Mississippi	5	.03	.03	.19	.50	.19	.03	.50	.03	.19
Missouri	10	*	.09	*	.50	.02	.02	.50	.50	.02
Montana	4	.06	.69	.31	.69	.69	.31	.31	.94	.31
New Mexico	4	.31	.69	.94	.69	.69	.69	.06	1.00	.06
North Carolina	11	*	.03	*	.89	.27	.11	.50	.99	1.00
North Dakota	6	.01	.01	.01	1.00	.34	.01	.98	.98	.98
Ohio	7	.01	.50	.01	.99	.06	.01	.94	.94	.50
Oklahoma	7	.01	.06	.06	.50	.06	.22	.94	.77	.77
Oregon	3	.12	.50	.50	.50	.12	.12	.50	.50	.12
South Dakota	5	.03	1.00	1.00	.50	.19	.19	.81	.50	.19
Texas	12	*	*	*	.98	*	*	.19	.93	.07
Utah	3	.50	1.00	.87	1.00	.87	.87	.50	.87	.50
Virginia	9	.02	.75	.09	.50	.02	.09	.50	.25	.50
Wisconsin	10	.05	.17	.01	.95	.01	*	.38	.99	*

*Significant at less than the .01 level.

[1]See Appendix I for complete description of adaptive control activities.

[2]P = .50.

An examination of probabilities recorded for boundary activity 1, "Compile individual institutional budget requests into a single document for transmittal without board recommendation to governor and/or legislature," indicates that this item suffers unreliability for much the same reason that Financial Control Activity 1 did. It assumes an inclusive hierarchy of activities under "Liaison Control" that was apparently unclear to the respondents.

Under Interpretation Control Activities, it is possibly significant to note the considerable lack of reliability for activities 2 and 3. Activity 2 indicates an action of coordinating and conducting organized campaigns to inform public of higher education needs. Activity 3 builds on this action by specifying actively seeking to organize public groups and influential citizens into task forces to meet specific higher education needs. While both of these activities have public results, they are essentially tasks that are performed "behind the scenes." This fact may account in part for the respondents' inabilities to agree as to whether the state-wide boards were performing these activities or not.

Summarizing the discussion on the matter of reliability, one must conclude that while the reliability of the questionnaire was not as high as normally would be desired, it is sufficient for proceeding with an analysis of the data. It is unlikely that much greater reliability could be achieved when dealing with small numbers of

respondents concerning complex and with subtle distinctions of activities.

HYPOTHESES RELATED TO THE SCOPE AND TYPES OF CONTROL EXERCISED BY STATE-WIDE BOARDS

What are the predominant control activities performed by state-wide boards of higher education? If one accepts Katz and Kahn's theory that organizations develop productive, maintenance, and managerial subsystem structures before developing boundary and adaptive structures, it would be logical to conclude that state-wide boards have more fully developed maintenance control structures than boundary and adaptive structures. The fact that the establishment of state-wide boards is a relatively recent phenomenon would lend support to the assumption of predominant maintenance control.

Hypothesis 1 seeks to test this assumption:

> Hypothesis 1. In general, there will be more maintenance-type control activities performed by state-wide boards than boundary and adaptive types of control activities.

In order to test the validity of Hypothesis 1, the questionnaires received from the state-wide boards reporting the specific control activities they performed were tabulated for each state. These tabulations provided an indication of how many of the fifteen maintenance control activities, the nine boundary control activities, and the nine adaptive control activities each state-wide board performed. Since the numbers of control activities varied

from nine to fifteen, it was necessary to transpose the number of activities reported by each state for each category into percentages to arrive at a comparable index. The indexes and resulting percentages for each state in all three categories and an average total control percentage index for each state are given in Table 4 on the following page.

To substantiate the hypothesis that maintenance control activities are predominant, it would be necessary to find that the average index for maintenance control activities is higher than the average indexes for boundary and adaptive control activities.

The average indexes reported in Table 4 fail to support the hypothesis. In fact, state-wide boards report performing a smaller percentage of maintenance control activities than boundary or adaptive control activities. The boards indicated on the average that they are performing 83.20% of the boundary control activities listed in the questionnaire as opposed to 74.44% of the adaptive control activities and 66.68% of the maintenance control activities listed.

Examination of Table 4 reveals that the state-wide boards reporting the highest averages for all three types of control activities combined are predominantly "governing" type boards. Further investigation indicates that the "coordinating" type state-wide boards reported combined control activity indexes that seem to cluster at the lower end of the scale. Therefore, the states were divided

into governing and coordinating categories in Tables 5 and 6 to determine if in fact there were any significant difference in the control indexes for the two types of boards.

TABLE 4

CONTROL INDEXES AS REPORTED BY STATE-WIDE BOARDS

State	Control Activities Indexes						Mean
	Maintenance Activities N = 15		Boundary Activities N = 9		Adaptive Activities N = 9		
	N	%	N	%	N	%	
North Dakota	15	100	8	89	9	100	96.33
Oregon	15	100	9	100	8	89	96.33
Florida	13	87	9	100	8	89	92.00
Montana	13	87	9	100	8	89	92.00
Ohio	11	73	9	100	9	100	91.00
Wisconsin	12	80	9	100	7	78	88.33
Georgia	15	100	9	100	5	56	85.33
Texas	9	60	9	100	8	89	83.00
Mississippi	13	87	8	89	6	67	85.33
Oklahoma	13	87	7	78	6	67	77.33
South Dakota	15	100	7	78	5	56	77.66
Michigan	11	73	8	89	6	67	76.33
Utah	7	47	9	100	7	78	75.00
Arizona	14	93	5	56	6	67	72.00
Missouri	11	73	7	78	6	67	72.33
Connecticut	5	33	8	89	8	89	70.33
New Mexico	5	33	8	100	7	78	70.33
Virginia	10	67	7	78	6	67	70.33
Massachusetts	9	60	8	89	5	56	68.30
Kentucky	4	27	8	89	7	78	64.66
North Carolina	4	27	6	67	9	100	64.66
Illinois	8	53	6	67	6	67	62.33
Arkansas	4	27	5	56	6	67	49.66
Colorado	5	33	4	44	6	67	48.00
Kansas	9	60	4	44	3	33	45.66
Mean	10	66.68	7.5	83.20	6.5	74.44	

TABLE 5

CONTROL INDEXES OF STATE-WIDE GOVERNING BOARDS

State	Control Activities Indexes			Mean
	Maintenance	Boundary	Adaptive	
	%	%	%	
North Dakota	100	89	100	96.33
Oregon	100	100	89	96.33
Florida	87	100	89	92.00
Montana	87	100	89	96.33
Georgia	100	100	56	85.33
Mississippi	87	89	67	85.33
South Dakota	100	78	56	78.00
Arizona	93	56	67	72.00
Kansas	60	44	33	45.66
Mean	90.44*	84	71.77	

*Difference between Maintenance M_1 (Table 5) and Maintenance M_2 (Table 6) significant at less than .01 level. ($t=14.3$ $SE_D=2.59$ $df=23$)

TABLE 6

CONTROL INDEXES OF STATE-WIDE COORDINATING BOARDS

State	Control Activities Indexes			Mean
	Maintenance	Boundary	Adaptive	
	%	%	%	
Ohio	73	100	100	91.00
Wisconsin	80	100	78	88.33
Texas	60	100	89	83.00
Oklahoma	87	78	67	77.33
Michigan	73	89	67	76.33
Utah	47	100	78	75.00
Missouri	73	78	67	72.66
Connecticut	33	89	89	70.33
New Mexico	33	100	78	70.33
Virginia	67	78	67	70.33
Massachusetts	60	89	56	68.33
Kentucky	27	89	78	64.66
North Carolina	27	67	100	64.66
Illinois	53	67	67	62.33
Arkansas	27	56	67	49.66
Colorado	33	44	67	48.00
Mean	53.31*	82.75	75.94	

*Difference between Maintenance M_1 (Table 5) and Maintenance M_2 (Table 6) significant at less than .01 level. ($t = 14.3$ $SE_D = 2.59$ $df = 23$)

As the tables reveal, the governing-type boards reported a much more extensive exercise of maintenance control activities (a mean control index for maintenance activities of 90.44%). This high percentage of performance of maintenance activities is in marked contrast with the moderate maintenance index average of 53.31% reported by coordinating boards, a difference significant at less than .01 level.

It would be accurate on the basis of these data to conclude that Hypothesis 1 is substantiated only when referring to state-wide boards classified as governing boards. The hypothesis does not hold when applied to state-wide boards in general or to coordinating-type boards specifically.

Perhaps the significant finding here is that the more recent type of state-wide board, i.e., the coordinating board, typifies a departure from the more orthodox development of organizations characterized by Katz and Kahn. Rather than evolving from productive structures to maintenance structures, evidently the coordinating-type boards evolved from productive structures (which in a state system of higher education are located in the institutions themselves) to boundary and adaptive structures. In essence the coordinating boards are prototypes of a different type of social organization which we might call the adaptive organization.

It would be accurate to say on the basis of this information that governing state-wide boards do differ significantly from coordinating state-wide boards in the scope and types of control they exercise. The difference between the two types of boards is in actuality more than semantic; they differ in basic control characteristics.

It should be noted at this point that to say that the two types of boards differ in the scope and types of control they perform is not to say anything about the intensity of that control or its impact on the system. It may very well be that specific coordinating boards actually exercise

greater control through boundary and adaptive control activities than certain governing boards do through maintenance activities. The impact of these widely differing types of control raises provocative questions that should be researched but cannot come within the scope of this study.

While the data related to Hypothesis 1 told us something about the scope and the types of control performed by state-wide boards, they did not give us insight into the sequential evolvement of these characteristics. It was surmised in the previous discussion that the coordinating boards were a more recent development and were therefore a new type of developing organization as far as the scope and types of control are concerned. Hypothesis 2 gives us opportunity to pursue the question of the sequence of development. Do the state-wide boards that were established earliest perform maintenance control to a greater extent than do the more recently established boards?

To test the validity of Hypothesis 2 it was necessary to determine the degree of coorelation between the length of time the state-wide boards have been in operation and the extent to which they are now performing maintenance control activities. The twenty-five state-wide boards used in the study were ranked according to their dates of establishment and their maintenance control index. A Spearman r correlation was calculated to determine the

degree of association. Table 7 which follows indicates the results.

TABLE 7

CORRELATION OF STATE-WIDE BOARD INDEXES FOR MAINTENANCE CONTROL WITH THE LENGTH OF OPERATION OF STATE-WIDE BOARDS

State	Ranking of Index Maintenance Control	Ranking of Length of Operation
Arizona	5	11
Arkansas	23	18.5
Colorado	20	24
Connecticut	21	24
Florida	7.5	3
Georgia	2.5	8
Illinois	18	18.5
Kansas	16	6
Kentucky	24	9
Massachusetts	16	24
Michigan	12	21
Mississippi	7.5	4
Missouri	12	21
Montana	7.5	1
New Mexico	22	12
North Carolina	25	14
North Dakota	2.5	5
Ohio	12	21
Oklahoma	7.5	10
Oregon	2.5	7
South Dakota	2.5	2
Texas	17	14
Utah	19	17
Virginia	14	16
Wisconsin	10	14

S_r=.575 (Significant at less than the .01 level)

N=25

As the correlation indicates, S_r = .575 (significant at less than the .01 level), the data support Hypothesis 2. There is a significantly positive association between the length of time a state-wide board has been in operation and the extent to which it performs maintenance activities.

The positive correlation of maintenance control activities with an extended length of operation is corroborated by the weak association of boundary activities (S_r = .07) with length of operation as illustrated in Table 10.

TABLE 8

CORRELATION OF STATE-WIDE GOVERNING BOARD INDEXES FOR MAINTENANCE CONTROL WITH LENGTH OF OPERATION

State	Ranking of Index Maintenance Control	Ranking of Length of Operation
Arizona	5	9
Florida	7	3
Georgia	2.5	8
Kansas	8	6
Mississippi	7	4
Montana	7	1
North Dakota	2.5	5
Oregon	2.5	7
South Dakota	2.5	2

S_r = -.15

N = 9

TABLE 9

CORRELATION OF STATE-WIDE COORDINATING BOARD INDEXES FOR MAINTENANCE CONTROL WITH LENGTH OF OPERATION

State	Ranking of Index Maintenance Control	Ranking of Length of Operation
Arkansas	14	9.5
Colorado	11	15
Connecticut	12	15
Illinois	9	9.5
Kentucky	15	1
Massachusetts	7	15
Michigan	4	12
Missouri	4	12
New Mexico	13	3
North Carolina	16	5
Ohio	4	12
Oklahoma	1	2
Texas	8	5
Utah	10	8
Virginia	6	7
Wisconsin	2	5

$S_r = -.09$

$N = 16$

It is extremely important, however, to remember that these data do not infer a causal relationship between time and the extent of maintenance control exercised by a state-wide board. There is absolutely no basis for implying that extensive maintenance control is necessarily the result of long operation. The two variables do exist in relationship, but can be explained in alternate ways. For example, it may be that the difference in the extent of maintenance implementation may be merely a result of the fact that governing boards which have high maintenance control by

statutory rights all happen to cluster at the early end of the length of operation scale. Therefore, the difference might appear in a time context, but actually reflect only statutory differences between governing and coordinating boards. Also, there is no way in this study to measure any accumulation of maintenance control activities over a period of time. Data are not available from which to determine the extent of maintenance control implementation in earlier periods.

Also, it is important to know if boundary and adaptive control activities correlate strongly with length of operation. If so, the already weak argument for a relationship between maintenance and time is further diminished. Tables 10 and 11 indicate the relationship of boundary and adaptive activities to length of operation.

All these findings tend to establish Hypotheses 1 and 2. The picture seems to be that governing-type boards which historically were established much earlier than coordinating-type boards did develop maintenance control activities to a greater degree than have coordinating boards. Furthermore, it appears that the more recent phenomenon of a coordinating-type board has followed a different developmental pattern by concentrating its efforts in the early stages of its growth on boundary and adaptive control activities to the relative neglect of extensive maintenance control activities. The theoretical assumptions of Katz and Kahn are more applicable to the earlier period of growth

TABLE 10

CORRELATION OF STATE INDEX FOR BOUNDARY CONTROL WITH LENGTH OF OPERATION FOR STATE-WIDE BOARDS

State	Ranking Index Boundary Control	Ranking Length of Operation
Arizona	22.5	11
Arkansas	22.5	18.5
Colorado	24.5	24
Connecticut	12.5	24
Florida	5	3
Georgia	5	8
Illinois	20.5	18.5
Kansas	24.5	6
Kentucky	12.5	9
Massachusetts	12.5	24
Michigan	12.5	21
Mississippi	12.5	4
Missouri	17.5	21
Montana	5	1
New Mexico	5	12
North Carolina	20.5	14
North Dakota	12.5	5
Ohio	5	21
Oklahoma	17.5	10
Oregon	5	7
South Dakota	17.5	2
Texas	5	14
Utah	5	17
Virginia	17.5	16
Wisconsin	5	14

$S_r = .243$

$N = 25$

of the governing boards. It is reasonable to assume that the characteristics of the coordinating-type board reflect the rapid rate of change affecting colleges and universities in the last fifteen years and the increasing complexities of state systems of higher education. Perhaps, the evolvement of state-wide boards highly oriented to boundary activities

TABLE 11

CORRELATION OF STATE INDEX FOR ADAPTIVE CONTROL WITH LENGTH OF OPERATION FOR STATE-WIDE BOARDS

State	Ranking of Index Adaptive Control	Ranking Length of Operation
Arizona	17	11
Arkansas	17	18.5
Colorado	17	24
Connecticut	6	24
Florida	6	3
Georgia	22.5	8
Illinois	17	18.5
Kansas	25	6
Kentucky	10.5	9
Massachusetts	22.5	24
Michigan	17	21
Mississippi	17	4
Missouri	17	21
Montana	6	1
New Mexico	10.5	12
North Carolina	2	14
North Dakota	2	5
Ohio	2	21
Oklahoma	17	10
Oregon	6	7
South Dakota	24	2
Texas	6	14
Utah	10.5	17
Virginia	17	16
Wisconsin	10.5	14

$S_r = .07$ $N = 25$

and to adaptive activities is the result of growing awareness that survival depended at this point in time on the abilities of the systems to respond to a changing environment rather than merely to attempt to run a "tighter ship" each biennium.

The third hypothesis related to control suggests that the evolution of boundary control subsystem structures

and of adaptive control subsystem structures are parallel phenomena:

> Hypothesis 3. The degree to which boundary structures are implemented by state-wide boards of higher education has a significantly positive relationship to the degree to which adaptive structures are developed.

The basis for this hypothesis lies in the assumption advanced by Katz and Kahn that these two types of subsystem structures share a mutual extrinsic orientation, i.e., they are concerned primarily with the present and future exchanges of a system with its external environment. If the hypothesis is valid, one would expect to find a strongly positive correlation between the rankings of the states on scales denoting the degrees to which they have implemented boundary and adaptive structures.

Table 12 illustrates the ranking of twenty-five state-wide boards on boundary and adaptive implementation scales. the rankings were obtained by taking the control index produced on boundary and adaptive control activities as reported by the state-wide boards and ranking them. The rank order correlation produced by applying the Spearman formula to these scales is .92, a very significant positive relationship.

Since the logical question is whether boundary or adaptive rankings also correlate just as positively with state-wide board rankings for maintenance control activities. Tables 13 and 14 indicate that this speculation is unfounded, i.e., there is a weak correlation between boundary and maintenance control activities. Therefore, it is accurate to

say that the boundary-adaptive correlation stands out as unique.

TABLE 12

CORRELATION OF STATE RANKING FOR ADAPTIVE CONTROL WITH STATE RANKING FOR BOUNDARY CONTROL

State	Ranking of Index Boundary Control	Ranking of Index Adaptive Control
Arizona	22.5	17
Arkansas	22.5	17
Colorado	24.5	17
Connecticut	12.5	6
Florida	5	6
Georgia	5	22.5
Illinois	20.5	17
Kansas	24.5	25
Kentucky	12.5	10.5
Massachusetts	12.5	22.5
Michigan	12.5	17
Mississippi	12.5	17
Missouri	17.5	17
Montana	5	6
New Mexico	5	10.5
North Carolina	20.5	2
North Dakota	12.5	2
Ohio	5	2
Oklahoma	17.5	17
Oregon	5	6
South Dakota	17.5	24
Texas	5	6
Utah	5	10.5
Virginia	17.5	17
Wisconsin	5	10.5

S_r = .92 (Significant below the .01 level)

N = 25

TABLE 13

CORRELATION OF STATE RANKING FOR MAINTENANCE CONTROL WITH STATE RANKING FOR BOUNDARY CONTROL

State	Ranking of Index Maintenance Control	Ranking of Index Boundary Control
Arizona	5	24.5
Arkansas	24	21
Colorado	21	24.5
Connecticut	21	1.5
Florida	7.5	6.5
Georgia	2.5	6.5
Illinois	18	21
Kansas	16	24.5
Kentucky	24	15
Massachusetts	16	15
Michigan	12	6.5
Mississippi	7.5	15
Missouri	12	21
Montana	7.5	6.5
New Mexico	21	6.5
North Carolina	24	6.5
North Dakota	2.5	15
Ohio	12	6.5
Oklahoma	7.5	18.5
Oregon	2.5	6.5
South Dakota	2.5	18.5
Texas	16	6.5
Utah	19	6.5
Virginia	14	6.5
Wisconsin	10	6.5

$S_r = .16$

$N = 25$

TABLE 14

CORRELATION OF STATE RANKING FOR MAINTENANCE CONTROL WITH STATE RANKING FOR ADAPTIVE CONTROL

State	Ranking of Index Maintenance Control	Ranking of Index Adaptive Control
Arizona	5	17
Arkansas	24	17
Colorado	21	17
Connecticut	21	6
Florida	7.5	6
Georgia	2.5	22.5
Illinois	18	17
Kansas	16	25
Kentucky	24	10.5
Massachusetts	16	22.5
Michigan	12	17
Mississippi	7.5	17
Missouri	12	17
Montana	7.5	6
New Mexico	21	10.5
North Carolina	24	2
North Dakota	2.5	2
Ohio	12	2
Oklahoma	7.5	17
Oregon	2.5	6
South Dakota	2.5	24
Texas	16	6
Utah	19	10.5
Virginia	14	17
Wisconsin	10	10.5

$S_r = -.05$

$N = 25$

These findings give ample evidence to accept Hypothesis 3 as valid. Also, these results lend credence to the assumption by Katz and Kahn that there is an inherent relationship between these two types of subsystem structures.

From the discussion of Hypothesis 2, it was learned that there is a possible relationship between the length of time a state-wide board has been operational and the amount of maintenance-type control it is exercising. While there is no causal relationship implied and it is possible that the relationship results from other factors, e.g., the statutory differences between the governing boards which are generally older and coordinating boards which are more recently established, it is true that both conditions exist. Therefore, the next logical question is whether the older boards in fact do exercise more overall control than the newer boards. Here again the possible statutory differences between the generally older governing boards and the newer coordinating boards inherent in such a correlation lessens the significance of the analysis. However, it is important to determine if such conditions exist with any degree of relationship.

> Hypothesis 4. There will be a positive relationship between the degree to which overall control is implemented by a state-wide board and the length of time it has been in operation, i.e., the longer a board has been in operation the greater the exercise of all types of control.

To test Hypothesis 4, it is necessary to obtain a composite index rating of control for each state-wide board. (See Table 36 in Appendix III.) The questionnaires returned by the state-wide boards provide the basis for an average index figure from three areas reported, i.e., maintenance activities, boundary activities, and adaptive activities.

These indexes were ranked according to the twenty-five states reporting and the rankings correlated with the rankings of the length of time the state-wide boards had been operating. The results of these rankings and correlation are shown in Table 15.

TABLE 15

CORRELATION OF RANKING FOR OVERALL CONTROL WITH LENGTH OF OPERATION RANKING FOR STATE-WIDE BOARDS

State	Ranking of Mean Index Overall Control	Ranking Length of Operation
Arizona	14.5	11
Arkansas	23	18.5
Colorado	24	24
Connecticut	17	24
Florida	3.5	3
Georgia	7	8
Illinois	22	18.5
Kansas	25	6
Kentucky	20.5	9
Massachusetts	19	24
Michigan	12	21
Mississippi	9	4
Missouri	14.5	21
Montana	3.5	1
New Mexico	17	12
North Carolina	20.5	14
North Dakota	1.5	5
Ohio	5	21
Oklahoma	10.5	10
Oregon	1.5	7
South Dakota	10.5	2
Texas	8	14
Utah	13	17
Virginia	17	16
Wisconsin	6	14

S_r = .91 (Significant below the .01 level)

As indicated in Table 15, there is a strongly positive correlation (S_r = .91) between these two variables. Control as a distinct organizational characteristic may tend to cumulate with time in state-wide boards of higher education. There are some interesting exceptions, however, to this general premise. For example, the state-wide coordinating board for Ohio has only recently been established. It was begun in 1963 and ranked twenty-first among twenty-five states in the length of time it has been operational. Yet, Ohio ranked fifth among twenty-five states in the amount of overall control it exercises. The state's unusually high ranking in overall control is attributable to the fact that its state-wide coordinating board performs every boundary and adaptive control activity listed on the questionnaire. The majority of the other states which ranked high on overall control ranked high in the exercise of maintenance control activities as opposed to boundary and adaptive activities and have been in operation for relatively longer periods of time. It is possible that the Ohio coordinating board is a prototype of the state-wide board of the future. It depicts a state-wide board with strong control characteristics that are primarily not maintenance control activities, but rather boundary and adaptive control activities. The implications of this prototype are important because they mean possibly that the skills needed to cope with boundary and adaptive control must be more

rational, more sophisticated, and more subtle than the skills needed to hold one's own under maintenance control.

Kansas also provided an exception with its long tenure of operation and its relatively moderate exercise of control in all areas. Despite these exceptions, the hypothesis that control tends to cumulate with time in state-wide boards still holds. Two aspects related to this hypothesis should be noted, however, in summary. First, the state-wide boards which had been in operation the longest attained their high control indexes primarily because of extensive maintenance-type control activities. Secondly, the newer boards, especially Ohio, tend to rank high on boundary and adaptive control activities. These two factors would suggest that if the pattern set by Ohio is adopted by other state-wide coordinating boards that Hypothesis 4 could have only a brief validity because through boundary and adaptive control activities other state-wide boards could achieve a relatively high degree of control in a short period of time.

State-wide boards of higher education have been classified in most of the historical and descriptive literature as belonging to one of three categories--governing boards, coordinating boards, and voluntary boards. Since the number of state-wide boards using the voluntary pattern is very small, the attention should be concentrated on the distinctions between governing boards and coordinating boards. Hypotheses 5 and 6 examine these traditional categories to determine if they describe any actual differentiation in the scope and types of control activities performed.

Hypothesis 5. There will be a positive relationship between states exercising a high degree of maintenance control and the existence in those states of state-wide boards classified as "governing" boards.

Hypothesis 6. There will be a positive relationship between states exercising a high degree of boundary and adaptive control and the existence in those states of state-wide boards classified as "coordinating" boards.

The assumptions underlying these hypotheses are evident. The word "governing" by its very connotation implies control that is more direct and immediate, i.e., maintenance-type control. Similarly, the term "coordinating" suggests less direct control, i.e., boundary and adaptive control activities with their external orientation and future perspective. To test the hypotheses it was necessary to divide the control indexes of the twenty-five states on maintenance control and on overall control into two groups for high and for low control indexes. States were placed in these two categories on the basis of their position in rankings above and below the median. These same states were then categorized as governing or coordinating. The correlation between the two variables for each hypothesis was determined.

Table 16 illustrates the correlation achieved between the maintenance control indexes and the nominal classifications of twenty-five state-wide boards. The contingency coefficient produced, $C = .48$, differs significantly from zero because the chi square obtained (7.51) as a part of the correlation formula ($df = 1$) is significant beyond the .01 level.

TABLE 16

CORRELATION OF MAINTENANCE CONTROL RANKINGS WITH NOMINAL CLASSIFICATIONS OF STATE-WIDE BOARDS

Nominal Classification of State-Wide Board	Degree of Maintenance Control	
	High	Low
Governing Boards	Arizona Florida Georgia Mississippi Montana North Dakota Oregon South Dakota $_8(4.7)$*	Kansas $_1(4.3)$
Coordinating Boards	Ohio Oklahoma Michigan Missouri Wisconsin $_5(8.4)$	Arkansas Colorado Connecticut Illinois Kentucky Massachusetts New Mexico North Carolina Texas Utah Virginia $_{11}(7.6)$
Totals	13	12

*The expected frequency for each cell is given in parentheses.

C = .48 (Significant at less than the .01 level.)

Chi Square = 7.51 df = 1

The analysis confirms Hypothesis 5--there is definite association between the nominal classification of state-wide boards as "governing" boards and the performance of a high degree of maintenance activities. Correspondingly, there is also a significant association of state-wide boards called "coordinating" boards with a low degree of implementation of maintenance control activities.

The state-wide boards classified as "coordinating" boards which have high maintenance control performance and therefore do not fit the pattern are Ohio, Oklahoma, Michigan, Missouri, and Wisconsin. All five of these states were ranked below all of the "governing" boards in the ranking of the "High Maintenance Control" category. It is to be noted that even these five state-wide boards are relatively moderate in their exercise of maintenance control activities. Moderate to low maintenance control therefore can be identified as characteristic of coordinating boards.

As semantic tools to differentiate in actuality between state-wide boards that vary widely in their performance of maintenance control activities, the words "governing" and "coordinating" serve useful and accurate purposes. They distinguish between two types of state-wide boards with regard to one of the primary characteristics of the boards, i.e., maintenance control.

Hypothesis 6 attempted to explore the other side of the question. If in fact governing boards are oriented more

toward maintenance control, is the reverse true? Do state-wide boards classed as "coordinating" boards have a definite affinity for boundary and adaptive types of control activities?

Tables 17 and 18 show the results of the analyses related to Hypothesis 6. Evident in Table 17 is the fact that there is very little indication that the classification "coordinating" board has any significant association with high performance indexes for boundary control activities. The contingency coefficient of .10 with a chi square value of .27 offers little more confidence than could have been achieved by pure chance. Apparently, governing-type boards in general tend to have a proportionately greater affinity for extensive performance of boundary activities than do boards that are in the coordinating category.

It should not be overlooked that while proportionately fewer coordinating boards have high boundary control indexes it is still a fact that over half of them recorded high indexes for boundary control. It is plausible that the relative short period of operation of some of the coordinating boards may account for their lower rankings on this type control. For example, the average length of operation for the seven coordinating boards in the low boundary control category was 10.5 years. None of the seven ranked higher than tenth in the ranking of state-wide boards by length of operation. Only three of the seven boards in this low boundary control cell could be called long-established boards, i.e., North Carolina, Oklahoma, and Virginia.

TABLE 17

CORRELATION OF BOUNDARY CONTROL RANKINGS WITH NOMINAL CLASSIFICATIONS OF STATE-WIDE BOARDS

Nominal Classification of State-Wide Board	Degree of Boundary Control	
	High	Low
Governing Boards	Florida Georgia Mississippi Montana North Dakota Oregon $6^{(5.4)*}$	Arizona Kansas South Dakota $3^{(3.6)}$
Coordinating Boards	Connecticut Kentucky Massachusetts Michigan New Mexico Ohio Texas Utah Wisconsin $9^{(9.6)}$	Arkansas Colorado Illinois Missouri North Carolina Oklahoma Virginia $7^{(6.4)}$
Totals	15	10

*The expected frequency for each cell is given in parentheses.

C = .10

Chi Square = .27 df = 1

TABLE 18

CORRELATION OF ADAPTIVE CONTROL RANKING WITH NOMINAL CLASSIFICATION OF STATE-WIDE BOARDS

Nominal Classification of State-Wide Board	Degree of Adaptive Control	
	High	Low
Governing Boards	Florida Montana North Dakota Oregon $_4(4.3)$*	Arizona Georgia Kansas Mississippi South Dakota $_5(4.7)$
Coordinating Boards	Connecticut Kentucky North Carolina New Mexico Ohio Texas Utah Wisconsin $_8(8.3)$	Arkansas Colorado Illinois Massachusetts Michigan Missouri Oklahoma Virginia $_8(8.3)$
Totals	12	13

*The expected frequency for each cell is given in parentheses.

C = .14

Chi Square = .06 df = 1

However, Virginia has reached relative strength as a coordinating board only in recent years. Therefore, the relatively new establishment of these seven coordinating boards could account for their low boundary control performance at the time in 1968 when they completed the questionnaire.

Table 18 presents the other dimension of the analysis related to Hypothesis 6. The question pertains to the degree of association between state-wide coordinating boards and the extent of the performance of adaptive control activities such as research, planning, and experimentation.

Here, as in the previous table, the relationship between the nominal classification of a state-wide board and the degree of performance on adaptive activities is very slight. The contingency coefficient of .14 with a chi square of .06 (df = 1) has very little significance.

The newness of the adaptive subsystem structure as an important part of the state-wide board's functioning and the newness of many of the coordinating-type boards could account again for the lack of any significant differentiation between the two classifications of boards. It is interesting to note that a proportionately larger number of coordinating boards has a high ranking on adaptive control performance than governing boards. This is the opposite of the pattern on boundary control in Table 17.

It does seem important that half of the coordinating boards have highly developed adaptive control activities.

The preoccupation of many of the state-wide boards of both classifications with master planning may account for the fact that nearly half of all the state-wide boards have extensive adaptive subsystem structures.

In summary, it can be concluded that the findings substantiate Hypothesis 5 as valid. There is a definite association between the classification of a state-wide board as a "governing" board and the degree to which it performs maintenance control activities.

However, the findings do not support the other side of the coin expressed in Hypothesis 6. There is little evidence to support the belief that coordinating-type boards have a greater tendency to implement boundary and adaptive control activities. At this point it seems that boards called "governing" boards may be just as likely to have a highly developed boundary or adaptive subsystem structure as boards classified as "coordinating" boards.

The previous six hypotheses have been related to the scope and types of control performed by state-wide boards. The awareness on the part of presidents of colleges and universities in these states regarding the control activities of the state-wide boards will be the subject of the next part of this investigation.

HYPOTHESIS RELATED TO AN AWARENESS OF CONTROL

It is a commonplace assumption in life that people are more aware of the things that affect them negatively than they

are of those things which influence them positively or indirectly. The review of the literature revealed numerous instances in which the control activities of the state-wide boards were described negatively as restrictive, intrusive, and coercive. Usually the specific activities characterized in these negative terms were maintenance control activities, e.g., the control of budgets through formulas or allocations, the control of new construction, or the control of new programs and institutions.

By contrast with maintenance control activities, the activities performed by state-wide boards in boundary and adaptive control areas appear to be oriented outward and forward, presumably producing less of a negative impression on the institutions being governed or coordinated. While it is true that long-range master plans make many decisions that could be called "maintenance-type" control decisions, they perform this control before the fact which seems to be less coercive than when those same decisions are applied on a yearly operating basis. One might surmise from all these conjectures that:

> Hypothesis 7. There will be a higher percentage of congruence between the perceptions of the officers of state-wide boards and the perceptions of the presidents of institutions regarding the performance of maintenance activities than boundary and control activities.

This hypothesis assumes that if a more negative attitude does exist among the presidents toward maintenance control activities that this feeling will manifest itself in their increased awareness of these maintenance activities.

The questionnaires sent to the officers of the state-wide boards and to the presidents of the colleges and universities contained identical lists of control activities. (See pages 84, 90, and 91 for a complete description of the activities included in the questionnaires.) The officers of the state-wide boards were asked to report their performance or non-performance of each control activity. For the same control activities, the presidents of institutions were given opportunity to indicate whether each specific activity were being performed in his state by the state-wide boards. Assuming the reports of the state-wide boards to be accurate, one is able to measure the presidents' awareness of control on the basis of the percentage of their answers that agree with the reports of the state-wide boards in their state regarding each control activity.

Table 19 on the following page provides an analysis of the presidents' awareness of each of the three types of control activities. The states included in this table are the same twenty-five states that have been listed in all previous tables.

The percentages of congruent responses were obtained by dividing the number of responses from presidents that agreed with the reports of the state-wide boards by the number of presidential respondents multiplied by the number of activities in each of the three control categories.

$$\% \text{ CR} = \frac{\text{N Congruent Responses}}{\text{N Respondents X N Activities}}$$

It should be noted here, however, that in actuality this analysis only matches perceptions between two types of respondents. It does not attempt to determine if in fact the state-wide board is completely accurate in its own perceptions of its activities. (See Appendix IV for complete data.)

TABLE 19

CONGRUENCE OF PRESIDENTS' RESPONSES WITH REPORTS FROM STATE-WIDE BOARDS REGARDING CONTROL ACTIVITIES

Type of Activity (N = Number of Activities)	States (N)	Respondents (N)	Congruent Responses (CR) (N)	Congruent Responses (CR) %
Maintenance N = 15	25	162	1600	65.84
Boundary N = 9	25	162	912	61.86
Adaptive N = 9	25	162	960	65.84

With regard to the hypothesis under study, i.e., whether there is more agreement between state-wide boards and presidents relative to maintenance activities as opposed to boundary and adaptive activities, it is apparent from Table 19 that there is little or no difference between the presidents' congruent responses within the three types of control activities. Interestingly, presidents were as accurate in identifying adaptive control activities as they were in recognizing

maintenance control activities. On the basis of these findings, Hypothesis 7 must be rejected on the basis of no significant differences in the congruent responses to the three categories.

One conclusion that could be drawn from these data is that evidently maintenance control activities differ very little in their impact on the awareness of presidents in the system from boundary and adaptive activities. Obviously, they do differ in other ways in their impact on the presidents, but as far as being more identifiable because of their assumed negative effects, they cannot be differentiated from boundary and adaptive activities.

This brief section has been devoted to an analysis of the presidents' awareness of the control exercised by state-wide boards. Next our attention will be directed toward the responses of the presidents with regard to the right (or legitimacy) of the state-wide boards to perform each of the thirty-three control activities listed in the questionnaires.

HYPOTHESES RELATED TO THE LEGITIMACY OF CONTROL

The review of the literature on state-wide boards revealed that there is some disagreement regarding the prerogatives of the state-wide boards to perform control activities. In designing this study, it was felt that one area to be explored should be this question of the right or "legitimacy" of the state-wide board to perform various control activities. Therefore, opportunity was given the presidents in the survey

to indicate whether they felt that the state-wide board in their state should be performing each of the thirty-three control activities listed in the questionnaire. The responses of the presidents constitute a measure of their attitudes toward the right of the board to perform each activity.

Hypothesis 8 explores the question of whether the existence of extensive control activities in a state has any significant relationship in a negative way to the attitudes of the presidents in that state concerning the right of the state-wide board to perform those activities.

> Hypothesis 8. Presidents in states where the state-wide boards exercise a high degree of control in maintenance, boundary,and adaptive control areas will indicate a more negative response toward the legitimacy of the state-wide board performing these activities than presidents in states where the state-wide boards exercise lower degrees of control in these three areas.

In preparing data for testing Hypothesis 8, it was necessary to divide the twenty-five states cited previously in the study into "high control" and "low control" groups. States' rankings in terms of overall control as reported in Table 15 and included in Appendix III, Table 36, provided the basis for division.

Presidents' responses ("should perform" and "should not perform") for each of the fifteen maintenance activities, nine boundary activities, and nine adaptive activities were totaled by state. Cumulative "should" and "should not" totals for the twelve high control states and the thirteen low control states were divided by the total numbers of responses

in each category to obtain the percentage of responses to each type of control activity, i.e., maintenance, boundary, and adaptive. These percentages are reported in Table 20.

TABLE 20

PERCENTAGE RESPONSE SCORES OF PRESIDENTS REGARDING LEGITIMACY OF STATE-WIDE BOARDS PERFORMING CONTROL ACTIVITIES

Control Activities	High Control States N = 12		Low Control States N = 13	
	Should	Should Not	Should	Should Not
Adaptive	86.9	13.1	86.4	13.6
Boundary	81.7	18.3	77.0	23.0
Maintenance	65.5*	34.5	51.9*	48.1

*Difference between maintenance percentages significant at .01 level. Complete tables of responses are found in Appendix III, Table 37.

The findings for Hypothesis 8 indicate that presidents in high control states and low control states differ only slightly in the ways they perceive the right of the state-wide boards to perform maintenance, boundary, and adaptive activities. On the basis of these results one would have to

conclude that the evidence is not sufficient to validate the hypothesis.

The data show that presidents in high control states favor maintenance activities more than do presidents in low control states by 13.6 percentage points, a difference significant at the .01 level. They exceed the presidents in low control states by only 4.7 percentage points in feeling that state-wide boards should perform boundary activities. Regarding adaptive activities the presidents in low control states indicate a slightly less favorable response than presidents in high control states. Presidents in low control states feel more strongly that all three types of control should not be performed than their counterparts in high control states.

What is evident and important in this analysis is that regardless of the degree of overall control exercised in their states presidents appear to be strongly in favor of the state-wide boards performing boundary and adaptive activities. The feeling on maintenance activities is more balanced, but still more favorable than negative.

Hypothesis 9 was formulated to take the analysis one step further, i.e., to determine specifically if high maintenance-type control would relate in some way to the existence of negative attitudes toward maintenance control. In such states, it was assumed, the presidents would indicate a preference for the performance of boundary and adaptive activities over maintenance activities.

Hypothesis 9. Presidents in states where the state-wide boards exercise high maintenance control will indicate a more favorable attitude toward the legitimacy of the state-wide board performing boundary and adaptive activities than toward its performing maintenance control activities.

In selecting states for the analysis of Hypothesis 9, the thirteen states ranking highest on the performance of maintenance activities were used. (Three states tied for twelfth in the ranking necessitating the use of thirteen states in the high maintenance control category.) These states included: Arizona, Florida, Georgia, Michigan, Mississippi, Missouri, Montana, North Dakota, Ohio, Oklahoma, Oregon, South Dakota, and Wisconsin.

Again as in the analysis for the previous hypothesis, cumulative totals were obtained from all the states in the group under categories marked "should perform" and "should not perform" in three control activity areas, i.e., maintenance, boundary, and adaptive. These category totals were used to obtain the percentage of responses for the "should" and "should not" categories for each activity. These percentages provide the basis for comparison as shown in Table 21 on the following page.

The data indicate that presidents in states where the state-wide boards perform a higher degree of maintenance control do give more favorable responses to the legitimacy of the boards' performing boundary and adaptive activities than maintenance activities. And a larger number of responses from the same presidents indicates that the boards should not

perform maintenance activities. The difference of 21.3 percentage points between positive responses on adaptive activities and maintenance activities is large enough (significant at the .01 level) to assume some actual difference in the presidents' feelings concerning the right of the state-wide boards to perform these activities. The presidents seem to feel that adaptive activities, i.e., research, planning, and experimentation, are more legitimately the concern of state-wide boards than financial control, facilities control, and other maintenance control activities.

TABLE 21

PERCENTAGE RESPONSE SCORES OF PRESIDENTS IN STATES PERFORMING HIGH MAINTENANCE CONTROL REGARDING LEGITIMACY OF STATE-WIDE BOARDS PERFORMING CONTROL ACTIVITIES

Control Activities	Percentage Response Scores	
	Should	Should Not
Adaptive	85.3*	14.7
Boundary	81.5*	18.5
Maintenance	64.0	36.0

*Difference from Maintenance significant at .01 level. Complete response data are found in Appendix III, Table 37.

It would appear that the data support the validity of Hypothesis 9 to a reasonable degree. Maintenance control activities do draw the strongest unfavorable response

and the weakest favorable response of all three control activity categories among presidents of states where higher degrees of maintenance control are performed.

In carrying this analysis one step further, it would be helpful to know if the presidents of states in which the boards perform low maintenance control respond in the same way the high maintenance state presidents do. If so, the basic premise of Hypothesis 9 is weakened since it implies some relationship between the fact of high maintenance control and more favorable attitudes toward boundary and adaptive control activities. If the presidents of low maintenance states respond in the same manner, one would have to conclude that these attitudes are characteristic of all presidents in state colleges and universities regardless of the scope and types of control activities performed in their states. Table 22 reports the results of this analysis.

The states included in this analysis are: Arkansas, Colorado, Connecticut, Illinois, Kansas, Kentucky, Massachusetts, New Mexico, Utah, Virginia, North Carolina, and Texas. (See ranking on maintenance control in Appendix III.)

Presidents reporting from states in which the statewide boards perform a lower degree of maintenance control actually indicate a weaker favorable response to the boards' performance of maintenance control activities than do the presidents in high maintenance control states. These results support the part of Hypothesis 9 which assumes a preference for boundary and adaptive activities over maintenance

activities, but reject that part of the hypothesis that assumes that this phenomenon is related to the extent to which maintenance control is exercised in the states. The preference for boundary and adaptive activities is a characteristic that appears common to presidents of state colleges and universities regardless of the degree of maintenance-type control performed in their states.

TABLE 22

PERCENTAGE RESPONSE SCORES OF PRESIDENTS IN STATES PERFORMING LOW MAINTENANCE CONTROL REGARDING LEGITIMACY OF STATE-WIDE BOARDS PERFORMING CONTROL ACTIVITIES

Control Activities	Percentage Response Scores	
	Should	Should Not
Adaptive	88.0*	12.0
Boundary	77.2*	22.8
Maintenance	53.0	47.0

*Difference from Maintenance significant at .01 level. Complete response tables are found in Appendix III, Table 37.

Hypothesis 10, the final assumption related to the legitimacy of state-wide boards' performing control activities, proposes that the longer a state-wide board has been in operation the more favorable will be the responses of presidents toward its performing control activities.

Hypothesis 10. There is a positive relationship between the length of time a state-wide board has been established and the degree to which presidents in the state express favorable responses toward the legitimacy of the state-wide board performing control activities.

This assumption is based on Glenny's observation that the negative feelings encountered by state-wide boards at their inception tend to dissipate with time as the positive contributions of the boards are recognized. If this is true, there will be a significantly positive relationship between the length of time a state-wide board has been in operation and the degree of favorable responses it received from presidents in its state regarding the legitimacy of the board performing maintenance, boundary, and adaptive control activities.

Table 23 shows the rank order correlation between the length of operation of twenty-five state-wide boards and their ranking on favorable responses to the thirty-three activities in the presidential questionnaire. To obtain the ranking on legitimacy responses, the favorable responses in a given state were totaled and divided by the number of presidential respondents in the state to give an average score for each state on favorable responses. The state means were ranked to enable correlation with a ranking of state-wide boards in terms of the length of time the board has been in operation.

The relationship observed between the two rankings (S_r = .42) is significant statistically at the .05 level and corroborates the assumption in Hypothesis 10. However, caution must be exercised in placing importance on this one relationship since it cannot imply any causal relation at all. In fact, it is possible that this observed correlation

may be simply the result of statutory differences inherent in governing boards (which are generally older) and coordinating boards (which are more recent).

TABLE 23

CORRELATION OF STATE AVERAGE SCORES ON LEGITIMACY RESPONSES WITH LENGTH OF OPERATION OF STATE-WIDE BOARDS

State	Ranking of Average State Score on Legitimacy Responses	Ranking Length of Operation
Montana	1.5	1
South Dakota	3	2
Florida	8	3
Mississippi	20.5	4
North Dakota	5	5
Kansas	8	6
Oregon	4	7
Georgia	8	8
Kentucky	17.5	9
Oklahoma	20.5	10
Arizona	1.5	11
New Mexico	25	12
North Carolina	15	14
Texas	20.5	14
Wisconsin	8	14
Virginia	23	16
Utah	15	17
Arkansas	13	18.5
Illinois	15	18.5
Michigan	20.5	21
Missouri	24	21
Ohio	17.5	21
Colorado	8	24
Connecticut	11.5	24
Massachusetts	11.5	24

S_r = .42 (Significant at the .05 level.)

N = 25

The implications of this analysis, however, seem to suggest that Glenny's assumption is true--presidents may tend to accept the controlling activities with the passage of time. Of course, these data do not measure changes in specific attitudes of presidents over any given period of time. It is possible that the rather positive attitudes found on the part of presidents in states where the board has been in operation longer are not the result of changed attitudes, but merely changed personnel. Perhaps, new presidents more favorable to state-wide boards have taken office in recent years and respond more favorably. Regardless of the explanation, it is encouraging that the responses are relatively favorable. There seems to be more acceptance of state-wide board activities than had been assumed generally, especially of boundary and adaptive activities. The effects of these findings should bring optimism that better regulated systems can be developed from present organizations.

SUMMARY

It has been the purpose of this chapter to present the findings of the study related to the scope and types of control activities performed by state-wide boards. The findings related to ten hypotheses have been presented. A summary of these discussions and some indication of their implications for state-wide boards will be included in the final chapter of the dissertation.

The next section of the study, Chapter V, will report the findings of the study regarding performance evaluations

submitted by college and university presidents. These evaluations of the state-wide boards' performance of each of the thirty-three control activities included in the questionnaires will provide additional insight into the effectiveness of control in state systems of higher education.

CHAPTER V

EVALUATION OF THE PERFORMANCE OF CONTROL IN STATE SYSTEMS OF HIGHER EDUCATION

INTRODUCTION

As noted in the review of the literature on college and university presidents in an earlier chapter, there are no comprehensive reports available at this time to indicate how large numbers of presidents evaluate the performance of state-wide boards. This study has an opportunity to contribute data in that area. The questionnaire which went to 306 presidents in the study included questions concerning the presidents' evaluations of the state-wide boards' performance on each of thirty-three control activities.

These data are reported in this chapter as they pertain to Hypotheses 11-13. The following chapter will provide a summary of the findings of the entire study and will offer a discussion of the implications of these results for state-wide boards.

ANALYSIS OF PERFORMANCE EVALUATION BY PRESIDENTS OF PUBLIC COLLEGES WITH GRADUATE PROGRAMS

Hypothesis 11 attempts to test the validity of the assertion made by Glenny that the larger public universities favor what he calls the "oligopoly type of competition"[1] for state dollars. It is his contention that the rough and tumble political arena is more advantageous to the large state universities who can use powerful lobbies to achieve their goals. He uses this rationale to explain the resistance he has observed on the part of major university representatives to the

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[1]Glenny, Campus and Capitol, p. 38.

establishment and growth of state-wide boards of higher education.

If Glenny's argument is valid, the presidents of major state universities should evaluate the performance of the state-wide board less favorably than their colleagues in the so-called "emerging state universities," i.e., public colleges with graduate programs that are now evolving into university status. Hypothesis 11 states the assumption in this way:

> Hypothesis 11. In general, presidents in state colleges with graduate programs will indicate a more favorable evaluation of the state-wide boards' performance of control activities than the presidents of state universities.

It would be possible to approach this hypothesis from the responses submitted by presidents of institutions regarding the legitimacy of the state-wide board performing various control functions. However, it was felt that their responses in performance evaluation of these same control activities would provide even more significant insight into their actual attitudes.

Generally throughout the study data are used from twenty-five states selected for intensive analysis. (See pages 59-60 in Chapter III for explanation.) These twenty-five select states were used for the analyses related to all of the hypotheses in the study with the exception of Hypothesis 11. Since this hypothesis proposes no relationship to the scope or type of control performed by the state-wide board, but rather to the type of institution served by the

presidents responding, it was felt that it would be helpful to obtain the largest number of respondents possible to increase the significance of the results. Therefore, for this one hypothesis the 205 presidential respondents from all thirty-four states will be included in the tabulations.

The presidents classified themselves by marking on the questionnaire whether they were the chief officer of a four-year college, a state college with graduate studies, or a university. For the purposes of this analysis, the responses from presidents in these two types of institutions were totaled for each maintenance, boundary, and adaptive control activity listed on the questionnaire using the scores given by each president to each activity on the five-point performance evaluation scale explained on pages 69-70 of Chapter III. These totals were divided by the number of activities in each control category (fifteen maintenance, nine boundary, and nine adaptive) to obtain an average performance evaluation score per activity. T tests were run on the differences obtained between these mean scores and an analysis of variance was performed. The results of these analyses are reported in Table 24 on the following page.

A response of "3" on the questionnaire represented a presidential opinion that the state-wide board was performing a particular control activity "adequately." Therefore, the average scores reported by presidents in both types of institutions agreed with one exception that the state-wide boards were performing only slightly less than adequately in all areas.

TABLE 24

AVERAGE PERFORMANCE EVALUATION SCORES REPORTED BY PRESIDENTS OF PUBLIC COLLEGES WITH GRADUATE PROGRAMS AND UNIVERSITIES REGARDING THE PERFORMANCE OF CONTROL ACTIVITIES BY STATE-WIDE BOARDS

Control Activities	Average Performance Evaluation Scores		
	Presidents of Public Colleges With Graduate Programs	Presidents of Public Universities	F Ratio
Maintenance	3.40	3.26	7.66*
Boundary	3.16	3.06	2.72
Adaptive	3.13	2.92	.67
All Types Combined	3.25	3.10	4.39

*Significant at the .05 level.

N = 205

The one exception was the more than adequate rating given the boards on adaptive control activities by the leaders of the universities. Essentially, there was little difference between the opinions expressed by presidents in the two categories under study. T tests of the differences between means indicated no significant differences at the .05 level of confidence for any of the pairs of means. An analysis of variance did indicate that the maintenance mean scores could be accepted as differing from chance at the .05 level of significance.

From these results, one cannot support Hypothesis 11. If Glenny's statement is true that presidents of major universities favor a system free of constraints then this attitude--if in fact it does exist--does not seriously affect these presidents' evaluations of the performance of the state-wide boards. In general, the presidents of the universities agree with the presidents of the "emerging state universities" that the state-wide boards are doing an adequate job in performing control activities.

EVALUATION OF PERFORMANCE RELATED TO TYPES OF BOARDS

Of basic interest to this study is the question of whether the types of control activities performed and the degree to which those activities are performed have any association with the attitudes of presidents in evaluating performance. As discussed on pages 53-55 of Chapter III, it is possible to group the twenty-five selected states used throughout most of this study into eight typologies on the basis of the maintenance, boundary, and adaptive control activities that are performed.

The eight typologies are depicted in Figure 1 on page 55. Table 25 illustrates these typologies and indicates the states included in each group.

These typologies provide a framework for comparing the evaluations of presidents on the basis of the types and degree of control activities performed by state-wide boards. There was no state-wide board in the study reporting high

TABLE 25

TYPOLOGIES OF STATE-WIDE BOARDS BY SCOPE AND TYPE OF CONTROL ACTIVITIES

State Type	Degree of Control Implementation			States in Typology	
	Maintenance	Boundary	Adaptive	N	Identification
I	High	Low	High	0	
II	High	Low	Low	4	Ariz., Okla., Mo., S. D.
III	High	High	High	6	Fla., Mont., N.D., Ore., Ohio, Wisc.
IV	High	High	Low	3	Ga., Mich., Miss.
V	Low	Low	High	2	Conn., N.C.
VI	Low	Low	Low	5	Ark., Colo., Ill., Kan., Va.
VII	Low	High	High	4	Ky., Tex., N. Mex.,Utah
VIII	Low	High	Low	1	Mass.
Total				25	

control performance on maintenance and adaptive activities while low on boundary activities. Therefore, no states will be included under Type I. The other groupings include both governing and coordinating boards with no recognizable pattern as to their location on the typology matrices. There was only one Type VIII state, Massachusetts, which reported low performances on maintenance and adaptive activities, but high on

boundary activities. Of course, typologies such as these constructed in an exploratory way cannot stand rigorous analysis, but only serve to pave the way for more sophisticated classifications.

Hypothesis 12 proposes that state-wide boards which are high on maintenance control activities, but perform boundary and adaptive activities less extensively, will receive the lowest performance evaluations of all the seven typologies being examined:

> Hypothesis 12. States categorized as Type II will record the lowest performance evaluations of all categories.

This assumption, of course, is based on the theory that the extensive performance of maintenance activities to the relative neglect of boundary and adaptive activities will create a negative climate for the state-wide board that will result in low evaluations of its performance.

Since Hypothesis 13 is closely related to the assumption immediately preceding it, it will be helpful to discuss the two hypotheses together. This final hypothesis proposes that state-wide boards exercising low maintenance control with high boundary and adaptive control activities will receive the highest performance evaluations from the presidents.

> Hypothesis 13. States categorized as Type VII will record the highest performance evaluations.

Obviously, the underlying premise here is the idea that concentration on boundary and adaptive activities in a low maintenance control climate will be perceived by the presidents as more effective.

The Type II states include two governing boards (Arizona and South Dakota) and two coordinating boards (Missouri and Oklahoma). The Type VII states are all coordinating boards (Kentucky, New Mexico, Texas, and Utah). The states were assigned to typologies on the basis of their rankings in the performance of maintenance, boundary, and adaptive control activities.

The average performance evaluation score was obtained for each state typology by tabulating the presidents' responses in each typology to each of the thirty-three control activity questions. These totals were multiplied by the weighted values of one to five assigned to the five-point scale in the performance evaluation section of the presidential questionnaire. (Regarding performance of specific control activities by the state-wide boards, the presidents marked "Very Well" (1), "Well" (2), "Acceptably" (3), "inadequately" (4), or "Poorly" (5) for each activity.) These weighted totals were divided by the number of responses for each typology to obtain a mean performance evaluation score for each of the three major control areas, i.e., maintenance, boundary, and adaptive. The mean evaluation scores obtained by this method are reported in Table 26 on the following page. To facilitate comparison and analysis the typologies are listed in terms of their rank orders under various control headings in Table 27.

In analyzing the average evaluation scores for each of the categories, it should be remembered that the lower mean

TABLE 26

AVERAGE PERFORMANCE EVALUATION SCORES FOR STATE-WIDE BOARD TYPOLOGIES RELATED TO TYPES OF CONTROL ACTIVITIES

State Type	Maintenance	Boundary	Adaptive	All Control Areas*
I	0.00	0.00	0.00	0.00
II	3.81	3.44	3.35	3.53
III	3.32	3.29	3.05	3.22
IV	4.05	3.79	3.31	3.71
V	3.83	3.20	3.16	3.39
VI	3.46	3.29	3.38	3.37
VII	3.19	3.29	3.60	3.36
VIII	2.79	2.42	2.50	2.57

*F = 5.29 (significant at the .01 level.)

TABLE 27

RANK ORDERS OF STATE-WIDE BOARD TYPOLOGIES DERIVED FROM PERFORMANCE EVALUATION AVERAGE SCORES

Rank	Maintenance	Boundary	Adaptive	All Control Areas
1	VIII	VIII	VIII	VIII
2	VII	V	III	III
3	III	VII	V	VII
4	VI	VI	IV	VI
5	II	III	II	V
6	V	II	VI	II
7	IV	IV	VII	IV

scores indicate higher performance evaluations. The data in Table 26 reveal that Type II states with their high maintenance indexes and low boundary and adaptive rankings did in fact receive relatively lower performance evaluation scores. Type II boards never ranked higher than fifth in the rankings and in two instances were listed as sixth. The average performance score of 3.81 achieved by Type II boards borders near the "inadequately" range of the evaluation scale for maintenance activities. The average score for Type II states for all types of control activities combined (3.53) is also oriented toward the less effective end of the scale.

The relatively weak evaluations given Type II boards tend to substantiate in part Hypothesis 12. These boards did not record the lowest performance scores, but were within two places of last on every control category. It would be fair to say that presidents evaluate Type II boards as performing slightly less than acceptably in all control activity areas.

Type VII state-wide boards, i.e., those with low maintenance activities, but high boundary and adaptive activities, placed second in performance of maintenance activities, third in performance of boundary activities, last in performance of adaptive activities, and third in the rankings when all three control areas are considered together. (It should be noted parenthetically that the Type VIII state, Massachusetts, placed first in all categories. The significance of

this ranking is open to question since the category contained only one state with a small number of respondents.) The surprising last place performance of Type VII boards on adaptive control activities is difficult to explain. The low average score (3.60) on adaptive activities kept this group of states from the highest combined evaluation score if one considers the Type VIII state atypical. Based on these data, one may only partially accept Hypothesis 13. There is some evidence that these boards receive more positive performance evaluations than at least half of the other typologies with the one exception of adaptive activities.

An important insight in this analysis is the fact that Type III states, i.e., those state-wide boards high on all three types of control activities, received perhaps the most favorable and balanced evaluations (if one still considers the Type VIII state to be atypical and therefore not seriously considered in the analysis). These six state-wide boards include four governing boards and two coordinating boards: (Governing) Florida, Montana, North Dakota, and Oregon; (Coordinating) Ohio and Wisconsin.

These are state-wide boards which perform all control activities to a relatively high degree. It is evident that their performance of these activities does not affect in any strongly negative way the evaluations of presidents in those states as to the effectiveness with which the boards are controlling the system.

By contrast, the type states receiving the poorest evaluations in general were the boards classified as Type IV.

These are state-wide boards that exercise high maintenance and boundary controls, but relatively low adaptive controls. These states (Georgia, Michigan, and Mississippi) include two governing boards and one coordinating board. Paradoxically, their highest average score was recorded for the performance of adaptive control activities--the one area in which they reportedly perform the least extensive control activities.

In order to determine if the rankings of the state board typologies in each control area, e. g., maintenance, boundary, etc., related to rankings in other areas, it was necessary to compute rank order correlations. Table 28 illustrates the results of these correlations.

TABLE 28

RANK ORDER CORRELATIONS FOR STATE-WIDE BOARD TYPOLOGIES ON PERFORMANCE EVALUATIONS OF CONTROL ACTIVITIES

Control Activities	Correlation (S_r) of State Typology Rank Orders
Maintenance vs. Boundary	.61
Maintenance vs. Adaptive	.15
Boundary vs. Adaptive	.29
Maintenance vs. Combined Control	.93
Boundary vs. Combined Control	.68
Adaptive vs. Combined Control	.40

Combined control indexes seem to be the best predictors of how specific types of control activities will be evaluated especially in the case of maintenance control activities. Of course, the reverse is true and would tend to imply that if a state-wide board achieves a relatively high performance evaluation on maintenance control activities, it can reasonably expect a favorable evaluation of its overall efforts at control. Adaptive control activities, on the other hand, seem to be weak predictors of performance evaluations in other control areas.

SUMMARY

In this chapter, results have been presented and discussed concerning the evaluation of state-wide boards' performances on various types of control activities. The data were used to test the validity of eight typologies of state-wide boards constructed on the basis of the scope and types of control activities performed. Each of these findings was discussed briefly as it related to Hypotheses 11-13.

The final chapter of the study will be devoted to summarizing the results and analyses of the entire project, discussing the implications of the findings for the control activities of state-wide boards, and proposing implications for further research.

CHAPTER VI

SUMMARY AND CONCLUSIONS

INTRODUCTION

The primary focus of this study has been the phenomenon of control as performed by state-wide boards of higher education. The stated purpose of the study was (1) to provide a conceptual design for identifying the scope and types of control being exercised by state-wide boards of higher education; (2) to operationalize this design by applying it to actual state-wide boards to produce identifiable typologies of boards in terms of the scope and types of control they exercise; and (3) to determine through a survey of presidents of public colleges and universities their perceptions regarding the rights of state-wide boards to perform various control activities and the relative effectiveness with which the boards are performing the activities.

In Chapter II, a conceptual approach to the study of control activities performed by state-wide boards was proposed based on the structural subsystem concepts of Katz and Kahn. State-wide boards and their control activities were defined in terms of the maintenance, boundary, and adaptive subsystem structures identified by Katz and Kahn as inherent to social systems. The characteristics of the subsystem structures were defined in terms of state-wide board control activities.

The essential characteristics of this conceptual approach were incorporated into a research design for the project. Hypotheses were constructed to serve as the criteria for the study. As outlined in Chapter III, these hypotheses

included assumptions related to the nature of control activities performed by state-wide boards, to the awareness of presidents regarding control activities, to the legitimacy with which the boards exercise control activities, and to the evaluation by presidents of the control activities performed by state-wide boards.

Eight typologies of state-wide boards were proposed on the basis of the types and extent of the control activities they perform. Assumptions were offered as to the relationship of these typologies to the evaluations of presidents regarding performance.

State-wide boards and presidents of public colleges and universities were identified as the sources of basic data for the study. Using the conceptual approach explained in Chapter II, thirty-three control activities representing maintenance, boundary, and adaptive activities were identified for inclusion in questionnaires to be sent to the state-wide boards and to the presidents of the institutions. The questionnaires mailed to both data sources contained the same list of control activities. The presidential questionnaire contained a five-point scale for the presidents to use in evaluating the performance of the state-wide board in their state on each of the control activities in the study.

Questionnaires were returned by thirty-four state-wide boards from which twenty-five were selected for analysis in the study. (Data from presidents in all thirty-four states

were used for Hypothesis 11 only. Otherwise, data were selected from the twenty-five states listed in Appendix II.) There were questionnaires returned by 205 presidents out of 306 recipients of the mailings for a response of 67%.

The findings of the study as reported in Chapters IV and V will be summarized in the following section.

RESULTS OF THE STUDY

The first six hypotheses explored in the study were concerned with the nature of the control activities performed by state-wide boards. The assumptions attempted to examine control in light of generally held ideas about state-wide boards as expressed in the literature reviewed in Chapter I. The findings related to these hypotheses produced the following conclusions.

1. State-wide boards reported performing more boundary control activities than adaptive and maintenance activities. It is generally assumed that state-wide boards perform more maintenance control activities than any other activities, e.g., control of finances, facilities, programs, faculty, and student enrolments and tuition. The findings of this study indicate that this assumption is true only when applied to state-wide boards classified as "governing boards." But when considered all state-wide boards without regard for their classification as "governing" or "coordinating," the boards perform a smaller percentage of maintenance-type activities than boundary or adaptive activities.

2. State-wide boards classed as "governing boards" report the performance of more control activities of all types than do "coordinating boards," with the exception of adaptive control activities, e.g., research, planning, and experimentation. Coordinating boards report a slightly greater implementation of adaptive activities. The data showed that the differences between these two major types of state-wide boards is more than semantic, it has basis in actual differentiation in the scope and types of control activities exercised.

3. State-wide boards which have been in operation for a longer period of time perform maintenance control activities to a greater degree than do boards with more brief histories. This finding does not suggest necessarily that the acquisition of maintenance control is a cumulative process. This finding was accompanied by weak correlations of boundary and adaptive control activity indexes with the length of operation of the boards.

4. There is a significantly high correlation between a state-wide board's ranking on the performance of boundary activities and its ranking on the performance of adaptive activities. This finding would suggest that these two types of control have a parallel development.

5. As mentioned in earlier discussions, one cannot place too much significance on the fact that the scope of control activities implemented correlates positively with the length of the board's operation. No causal inference

can be implied since the correlation could just as easily result from the statutory differences in governing boards which were established earlier and coordinating boards which are generally a more recent phenomenon. The Ohio Board of Regents provides an interesting exception to the rule, however, by exercising extensive control despite its relatively recent establishment. This state-wide board is especially strong in implementing boundary and adaptive activities.

6. The classification of state-wide boards as "governing boards" is a strong predictor that these boards will exercise extensive maintenance control activities. By the same token, the title "coordinating board" is an effective indicator that the board will perform relatively few maintenance control activities. Little significant difference can be found between the two types of state-wide boards in predicting the extent of the performance of boundary and adaptive control activities. Both types of boards are about equally divided in their performance of high degrees and low degrees of these two types of control activities.

7. There was no significant difference in the awareness of specific control activities exhibited by presidents in states varying in the types and extent of maintenance, boundary, and adaptive control activities performed by the state-wide boards. High maintenance control in a state apparently had no identifiable effect on the increase or decrease of presidents' awareness of control activities being performed.

Hypotheses 8-10 concentrated on the question of what control activities state-wide boards should perform. The following results were reported in the study.

8. Presidents in states where high degrees of control are exercised differ only slightly from presidents in low control states in how they feel about the activities state-wide boards should and should not perform. There is more disagreement about the performance of maintenance activities than boundary or adaptive activities which receive generally favorable responses.

9. Specifically in states where maintenance control activities are performed extensively, the presidents indicate a preference for boundary and adaptive activities over maintenance activities. The strength of this finding is weakened considerably by the fact that presidents in low maintenance control states also indicated a marked preference for boundary and adaptive activities over maintenance activities. Therefore, the preference for boundary and adaptive activities appears to be a characteristic common to all presidents regardless of the degree to which maintenance control is performed in their states.

10. Presidents in states where the state-wide boards have been in operation longer report more favorable responses to the question of whether the state-wide board should be performing a given control activity or not. The negative attitudes toward the state-wide board, if indeed they do exist to the extent the writers on the subject indicate, dissipate with time.

The final three hypotheses of the study, Hypotheses 11-13, deal with the evaluations of state-wide boards' performance of control activities by presidents of public colleges and universities.

11. Presidents of "emerging state colleges" differed little from presidents of state universities in their evaluation of the state-wide boards' performance on maintenance, boundary and adaptive control activities. Both types of presidents generally agree that the boards are performing at a nearly adequate level in all areas.

12. State-wide boards typed as high on maintenance control but low on boundary and adaptive control receive lower performance evaluations in general than state-wide boards which are low on maintenance but high on boundary and adaptive activities. States with boards high on all three types of control activities received perhaps the highest and most balanced overall evaluations on performance. There was little evidence, if any, that the existence of high degrees of control had any significant relationship to negative performance evaluations.

13. High performance evaluations on maintenance control activities correlate strongly with high performance evaluations on all control activities combined. There is very little correlation between high performance evaluations on maintenance and adaptive control activities.

IMPLICATIONS OF THE RESULTS

This study gives evidence that the structural subsystem concepts of Katz and Kahn as they relate to open social systems have relevance for state-wide boards of higher education. These boards can be defined in terms of the control activities they perform in what Katz and Kahn call maintenance, boundary, and adaptive subsystems.

Perhaps the most significant finding of the study is the conclusion that maintenance types of control activities are found in generally predictable patterns in state-wide boards, but do not have the detrimental effect on the attitudes of presidents in the system that has been assumed in the literature on the subject. In fact, when performed in combination with high degrees of boundary and adaptive control activities, high maintenance activities become the best predictors of positive performance evaluations from presidents of institutions in the system.

Related to these findings was the discovery that one of the states in the highest rated typology was untypical in that it is one of the most recently established boards, yet it has extremely high implementation of boundary and adaptive control activities and moderately high implementation of maintenance activities. This state-wide board, the Ohio Board of Regents, is classified as a coordinating board. Its fast development of boundary and adaptive subsystem structures has outdistanced its maintenance subsystem development. In

this characteristic, Ohio contradicts the theories of Katz and Kahn concerning the evolution of open social systems, i.e., the prior development of maintenance structures followed by boundary and adaptive structure maturation. The suggestion was offered in the text of this report that Ohio may be a prototype of the state-wide board of the future--high on control activities, but oriented strongly toward boundary and adaptive activities.

This study also has demonstrated that terms now used to describe state-wide boards, i.e., governing and coordinating, are useful and accurate in differentiating between types of organizations with contrasting characteristics. The differences are not semantic, but real.

It is apparent from the study that presidents of public colleges and universities are not only interested in the question of control by state-wide boards (the 67% response of the presidents to the four-page questionnaire is evidence of this interest), but are generally informed about the control activities being performed in their states.

Also, it is evident that these presidents in general accept the "right" of the state-wide boards to perform maintenance, boundary, and adaptive control activities. This fact may suggest that state-wide boards may wish to concentrate more on the quality of implementation of control activities and spend less time in defending their prerogatives in the control area. Of course, this approach is probably in operation in most states already. The entire

thrust of the analysis is toward an acceptance of control activities as necessary and useful to the functioning of state systems of higher education.

It would seem proper on the basis of data gathered for this study for state-wide boards to operate with more confidence that the role they are fulfilling in state systems of higher education is an important one which is recognized by the leaders of the institutions in the system as legitimate. In general, officers in state-wide boards should be encouraged by the fact that presidents feel the boards are performing their activities adequately.

IMPLICATIONS FOR FURTHER RESEARCH

As an exploratory study, this project was designed to define certain concepts in operational terms and to test those operational variables in an actual field survey. The result should be preliminary findings that suggest avenues for further research.

The need was demonstrated for more adequate concepts and instruments for measuring the degree to which various control activities are implemented in state systems. The control indexes and rankings used in this study were useful, but crude.

With these more sophisticated tools a better job can be done in constructing typologies of state-wide boards. Of major interest would be comprehensive system definitions of the characteristics and functions of the typologies.

Further study is needed to understand the structure and relationships of such variables as size, openness, complexity of organizational structure, and processes of decision-making as they relate to state-wide boards. The processes governing the flow of information in these systems also would make a contribution as a future topic for study.

Out of these and other studies, information could be developed as a basis for the design of a systems model of state coordination. This model would define the elements of the system, their functions, and interrelationships. There would be a dynamic description of the processes regulating the system internally and externally. From such a model, operating guidelines could be devised to encourage coordination to assure system stability and growth.

It has been the goal of this study to make a small, but necessary initial step toward the creation of that ultimate model.

APPENDIX I

QUESTIONNAIRES

A. Letter to State-Wide Boards

B. Questionnaire for State-Wide Boards

C. Letters to Presidents of Institutions

D. Questionnaire for Presidents

THE UNIVERSITY OF MICHIGAN
ANN ARBOR
48104
CENTER FOR THE STUDY OF HIGHER EDUCATION

Director
State-Wide Board of Higher Education
Address
City and State

Dear _____:

We are currently conducting research related to state coordination of higher education that requires information about the functional activities performed by state boards of higher education.

In effort to conserve your time, we have secured the use of the data supplied by state boards to the Public Affairs Research Council of Louisiana in the 1966 Pliner study. Careful examination of the questionnaires reveals, however, that we need supplemental information in one area--the functional activities performed by state boards.

The enclosed questionnaire will supply these data. We have designed it to require a minimum of time to complete. In fact, it can be completed in less than ten minutes by someone familiar with the total operation of your board.

Please help us by having the questionnaire completed and returned in the enclosed envelope. I will appreciate anything you can do to help us expedite the gathering of this information.

Gratefully,

James I. Doi
Professor of Higher Education

STATE BOARDS OF HIGHER EDUCATION
A FUNCTIONAL INVENTORY

*Name of State*_____

Please check each activity below that your state board performs. If the activity is performed in the state by some other board or agency, we would like for you to indicate that in the second column naming the board or agency. In the third column, please indicate if you perform the function in conjunction with another state agency and, if so, please name the agency.

Functional Activities	We Perform	Others Perform(Name)	Perform With Other Agency(Name)
Financial			
1. Consolidate institutional budget requests for transmittal only without recommendations to governor and/or legislature.	____	_____	_____
2. Establish formulas as bases for institutional budget requests.	____	_____	_____
3. Allocate operating funds to individual institutions after appropriation has been made in lump sum to board.	____	_____	_____
Facilities			
1. Recommend land and space requirements for new or proposed institutions.	____	_____	_____
2. Approve the establishment of new institutions or campuses.	____	_____	_____
3. Approve construction of new buildings for individual institutions.	____	_____	_____
Programs			
1. Establish broad criteria for establishing new academic programs in the state.	____	_____	_____
2. Recommend priorities in state system for establishing new academic programs.	____	_____	_____
3. Approve the establishment and/or discontinuance of academic programs at individual institutions.	____	_____	_____
Faculty			
1. Establish broad criteria for faculty in state institutions.	____	_____	_____

	We Perform	Others Perform (Name)	Perform With Other Agency (Name)
2. Establish salary schedules, promotion policies, and/or tenure policies for faculty in all state institutions.			
3. Approve appointment of new faculty for individual institutions.			
Students			
1. Establish upper limits for total numbers of students enrolled in state institutions.			
2. Establish limitations governing the proportion of students enrolled in state institutions (in-state vs. out-of-state, etc.)			
3. Establish rates for student tuition and fees.			
Liaison			
1. Compile individual institutional budget requests into a single document for transmittal without board recommendation to governor and/or legislature.			
2. Recommend to legislature and/or governor appropriations for individual institutions or for entire state system as a whole.			
3. Schedule and conduct all appearances of state institutions before legislative committees on appropriations.			
Information			
1. Compile information on higher education needs in the state.			
2. Collect information on trends in society that are likely to affect higher education in the state.			
3. Analyze data and publish reports on anticipated changes in society likely to affect higher education in the state.			

	We Perform	Others Perform (Name)	Perform With Other Agency (Name)
Interpretation			
1. Issue reports and informative bulletins to newspapers and interested public groups.			
2. Coordinate and conduct organized campaigns to inform public of higher education needs.			
3. Actively seek to organize public groups and influential citizens into task forces to meet specific higher education needs.			
Research			
1. Collect data on the operation of higher education institutions in state.			
2. Conduct and/or contract for research to improve effectiveness of institutions in state system.			
3. Conduct and/or contract for research to anticipate the long-range needs of higher education in the state.			
Planning			
1. Consolidate individual institutional plans and projections into a single document with a minimum of changes, i.e. merely serves a "clearing-house" function.			
2. Recommend specific goals, priorities and actions to meet the state's future higher education needs.			
3. Develop and maintain a comprehensive, long-range plan for state higher education.			
Experimentation			
1. Gather and disseminate information on experiments to improve colleges and universities.			
2. Conduct information and orientation meetings to foster experimentation in higher education.			
3. Maintain special fund for stimulating experimentation in higher education (to be allocated by board upon submission of proposals from institutions).			

THE UNIVERSITY OF MICHIGAN
ANN ARBOR
48104

CENTER FOR THE STUDY OF HIGHER EDUCATION

There is a serious void in our research on the coordination of higher education. Despite all our research data and reports, we still do not know what presidents think about coordination.

Obviously, presidents comprise the most strategic group of leaders in the coordination of higher education. What you think is most important.

Therefore, we feel the importance of the task will cause you to overlook our presumption in asking you to invest five minutes to tell us what you think about coordination.

We have condensed our questions to one sheet which requires you merely to check boxes to indicate your opinions. Your answers will be confidential and identified only by code number in data analysis. Our final report will identify no individual institution or state.

Please take a moment to help us and have your secretary return the questionnaire in the envelope enclosed.

Gratefully,

James I. Doi
Professor of Higher Education

P.S. In gratitude for your help, we will mail you a condensed summary of responses from presidents all over the nation.

enc.

THE UNIVERSITY OF MICHIGAN
ANN ARBOR
48104

CENTER FOR THE STUDY OF HIGHER EDUCATION

Forgive us for knocking on your door again, but we want so much to know what you think about state coordination of higher education that we felt we had to make a return call.

Realizing that our recent letter is at this moment rising to the surface in your "to be done" tray, we thought you might appreciate not having to search for that previous questionnaire. So we are enclosing a duplicate for your convenience.

As our earlier letter indicated, we will express our gratitude for your help by mailing you a condensed summary of the responses from presidents all over the nation.

Gratefully,

James I. Doi
Professor of Higher Education

enc.

SURVEY OF PRESIDENTIAL OPINION REGARDING THE COORDINATION OF STATE HIGHER EDUCATION

Your responses will be kept confidential and identified only by the code number appearing above. Final report will not mention individual states or institutions. Please check these boxes to aid in our analysis.

Number of years you have served this institution: 5 or less___; 6-10 years___; 11 or more ___. Type institution you serve: Four-year college___; State college with graduate studies___; University ___. Size of your institution: 2,000 students or less ___; 2,001 - 12,000 students___; 12,001 students or more ___.

Please check each activity below.

In column 1, please tell us if you think the state board of higher education should perform this activity.
In column 2, please tell us if the board of higher education in your state is now performing this activity.
In column 3, please place a check on the line which best describes how well the state board is performing this activity.

Activity	(1) Should Perform?		(2) Does Perform?		(3) How Well Does It Perform This Activity?				
	Yes	No	Yes	No	Very well	Well	Acceptably	Inadequately	Poorly
Financial									
1. Consolidate institutional budget requests for transmittal only without recommendations to governor and/or legislature.	___	___	___	___	_____	___	_____	_____	___
2. Establish formulas as bases for institutional budget requests.	___	___	___	___	_____	___	_____	_____	___
3. Allocate operating funds to individual institutions after appropriation has been made in lump sum to board.	___	___	___	___	_____	___	_____	_____	___
Facilities									
1. Recommend land and space requirements for new or proposed institutions.	___	___	___	___	_____	___	_____	_____	___
2. Approve the establishment of new institutions or campuses.	___	___	___	___	_____	___	_____	_____	___

Activity	(1) Should Perform? Yes	(1) Should Perform? No	(2) Does Perform? Yes	(2) Does Perform? No	(3) How Well Does It Perform This Activity? Very well	Well	Acceptably	Inadequately	Poorly
3. Approve construction of new buildings for individual institutions.	___	___	___	___	_____	___	_____	_____	___
Programs									
1. Establish broad criteria for establishing new academic programs in the state.	___	___	___	___	_____	___	_____	_____	___
2. Recommend priorities in state system for establishing new academic programs.	___	___	___	___	_____	___	_____	_____	___
3. Approve the establishment and/or discontinuance of academic programs at individual institutions.	___	___	___	___	_____	___	_____	_____	___
Faculty									
1. Establish broad criteria for faculty in state institutions.	___	___	___	___	_____	___	_____	_____	___
2. Establish salary schedules, promotion policies, and/or tenure policies for faculty in all state institutions.	___	___	___	___	_____	___	_____	_____	___
3. Approve appointment of new faculty for individual institutions.	___	___	___	___	_____	___	_____	_____	___
Students									
1. Establish upper limits for total numbers of students enrolled in state institutions.	___	___	___	___	_____	___	_____	_____	___
2. Establish limitations governing the proportion of students enrolled in state institutions (in-state vs. out-of-state, etc.).	___	___	___	___	_____	___	_____	_____	___
3. Establish rates for student tuition and fees.	___	___	___	___	_____	___	_____	_____	___
Liaison									
1. Compile individual institutional budget requests into a single document for transmittal without board recommendation to governor and/or legislature.	___	___	___	___	_____	___	_____	_____	___

Activity	(1) Should Perform? Yes	(1) Should Perform? No	(2) Does Perform? Yes	(2) Does Perform? No	(3) How Well Does It Perform This Activity? Very well	Well	Acceptably	Inadequately	Poorly
2. Recommend to legislature and/or governor appropriations for individual institutions or for entire state system as a whole.	___	___	___	___	_____	___	_____	_____	___
3. Schedule and conduct all appearances of state institutions before legislative committees on appropriations.	___	___	___	___	_____	___	_____	_____	___
Information									
1. Compile information on higher education needs in the state.	___	___	___	___	_____	___	_____	_____	___
2. Collect information on trends in society that are likely to affect higher education in the state.	___	___	___	___	_____	___	_____	_____	___
3. Analyze data and publish reports on anticipated changes in society likely to affect higher education in the state.	___	___	___	___	_____	___	_____	_____	___
Interpretation									
1. Issue reports and informative bulletins to newspapers and interested public groups.	___	___	___	___	_____	___	_____	_____	___
2. Coordinate and conduct organized campaigns to inform public of higher education needs.	___	___	___	___	_____	___	_____	_____	___
3. Actively seek to organize public groups and influential citizens into task forces to meet specific higher education needs.	___	___	___	___	_____	___	_____	_____	___
Research									
1. Collect data on the operation of higher education institutions in state.	___	___	___	___	_____	___	_____	_____	___
2. Conduct and/or contract for research to improve effectiveness of institutions in state system.	___	___	___	___	_____	___	_____	_____	___
3. Conduct and/or contract for research to anticipate the long-range needs of higher education in the state.	___	___	___	___	_____	___	_____	_____	___

Activity	(1) Should Perform?		(2) Does Perform?		(3) How Well Does It Perform This Activity?				
	Yes	No	Yes	No	Very well	Well	Acceptably	Inadequately	Poorly
Planning									
1. Consolidate individual institutional plans and projections into a single document with a minimum of changes, i.e., merely serves a "clearing-house" function.	___	___	___	___	_____	___	_____	_____	___
2. Recommend specific goals, priorities and actions to meet the state's future higher education needs.	___	___	___	___	_____	___	_____	_____	___
3. Develop and maintain a comprehensive, long-range plan for state higher education.	___	___	___	___	_____	___	_____	_____	___
Experimentation									
1. Gather and disseminate information on experiments to improve colleges and universities.	___	___	___	___	_____	___	_____	_____	___
2. Conduct information and orientation meetings to foster experimentation in higher education.	___	___	___	___	_____	___	_____	_____	___
3. Maintain special fund for stimulating experimentation in higher education (to be allocated by board upon submission of proposals from institutions).	___	___	___	___	_____	___	_____	_____	___

APPENDIX II

CHARACTERISTICS OF STATE-WIDE BOARDS AND PRESIDENTS OF INSTITUTIONS

A. Characteristics of State-Wide Boards

B. Presidents of Public Colleges and Universities by Types of Institutions

C. Presidents Responding to Survey by Types of Institutions

TABLE 29

CHARACTERISTICS OF STATE-WIDE BOARDS

State-Wide Board	Type	Number of Institutionsl	Date Established
Arizona Board of Regents of the Universities and State Colleges of Arizona	Gov.	3	1945
Arkansas Commission on Coordination of Higher Education Finances	Coord.	8	1961
Colorado Colorado Commission on Higher Edcuation	Coord.	8	1965
Connecticut Commission for Higher Education	Coord.	5	1965
Florida Board of Regents	Gov.	5	1905
Georgia Board of Regents, University System of Georgia	Gov.	12	1931
Illinois Illinois Board of Higher Education	Coord.	9	1961
Kansas Board of Regents, State of Kansas	Gov.	6	1913
Kentucky Kentucky Council on Public Higher Education	Coord.	6	1934
Massachusetts Board of Higher Education	Coord.	11	1965

TABLE 29--Continued

State-Wide Board	Type	Number of Institutions	Date Established
Michigan State Board of Education	Coord.	10	1963
Mississippi Board of Trustees of State Institutions of Higher Learning	Gov.	8	1910
Missouri Missouri Commission on Higher Education	Coord.	11	1963
Montana State Board of Education	Gov.	5	1889
New Mexico Board of Educational Finance	Coord.	6	1951
North Carolina North Carolina Board of Higher Education	Coord.	15	1955
North Dakota State Board of Higher Education	Gov.	6	1911
Ohio Ohio Board of Regents	Coord.	10	1963
Oklahoma Oklahoma State Regents of Higher Education	Coord.	10	1941
Oregon Oregon State System of Higher Education	Gov.	6	1929
South Dakota Board of Regents of the State of South Dakota	Gov.	6	1897

TABLE 29--Continued

State-Wide Board	Type	Number of Institutions	Date Established
Texas Coordinating Board, Texas College and University System	Coord.	21	1955
Utah Coordinating Council of Higher Education	Coord.	4	1959
Virginia State Council of Higher Education for Virginia	Coord.	12	1956
Wisconsin Coordinating Commission for Higher Education	Coord.	12	1955

[1]Education Directory of the Office of Education, 1966-1967, Part 3 (Washington, D. C.: U. S. Government Printing Office, 1967).

TABLE 30

PRESIDENTS OF PUBLIC COLLEGES AND UNIVERSITIES RESPONDING TO THE STUDY QUESTIONNAIRE CATEGORIZED BY TYPES OF INSTITUTIONS SERVED[1]

State	Potential Respondents (N)				Actual Respondents (N)			
	Type I	Type II	Type III	Total	Type I	Type II	Type III	Total
Arizona		1	2	3		1	2	3
Arkansas	4	3	1	8	3	1	1	5
Colorado	3	2	3	8	3	2	3	8
Connecticut		4	1	5		4	1	5
Florida		3	2	5		2	2	4
Georgia	6	3	3	12	5	1	3	9
Illinois		5	4	9		5	2	7
Kansas		3	3	6		3	3	6
Kentucky	1	4	1	6	1	4		5
Massachusetts	2	8	1	11	1	2	2	5
Michigan	2	5	3	10	2	4	3	9
Mississippi	3	2	3	8	1	1	3	5
Missouri	3	3	5	11	3	2	5	10
Montana	1	2	2	5	1	2	1	4
New Mexico		3	3	6		2	2	4
North Carolina	6	4	5	15	3	4	4	11
North Dakota	3	1	2	6	3	1	2	6
Ohio		3	7	10		1	6	7
Oklahoma	2	6	2	10	2	4	1	7
Oregon		4	2	6		2	1	3
South Dakota	2	2	2	6	2	2	1	5

TABLE 30--Continued

State	Potential Respondents (N)				Actual Respondents (N)			
	Type I	Type II	Type III	Total	Type I	Type II	Type III	Total
Texas	3	11	7	21		7	5	12
Utah	2		2	4	1		2	3
Virginia	2	6	4	12	2	4	3	9
Wisconsin	2	7	3	12	1	6	3	10
Totals	46	95	74	215	34	66	62	162

[1]Type I -- Four-Year Colleges
Type II -- State Colleges with Graduate Programs
Type III -- Universities

TABLE 31

PERCENTAGES OF RESPONSES FROM PUBLIC COLLEGE AND UNIVERSITY PRESIDENTS BY TYPES OF INSTITUTIONS IN TWENTY-FIVE SELECTED STATES

Type of Institution	Total Potential Respondents	Total Actual Respondents	
	N	N	%
Four-Year Colleges	46	34	74.9
State Colleges With Graduate Programs	95	66	69.5
Universities	74	62	83.6
Totals	215	162	75.3

APPENDIX III

RANK ORDER TABLES OF STATE-WIDE BOARD CHARACTERISTICS

A. Rank Order Length of Operation

B. Rank Order Maintenance Control Index

C. Rank Order Boundary Control Index

D. Rank Order Adaptive Control Index

E. Rank Order Overall Control Index

F. Rank Order Favorable Responses on Legitimacy of Performance

TABLE 32

RANK ORDER OF STATE-WIDE BOARDS
BY LENGTH OF OPERATION

State-Wide Board	Date Established[1]	Rank Order Length of Operation
Montana	1889	1
South Dakota	1897	2
Florida	1905	3
Mississippi	1910	4
North Dakota	1911	5
Kansas	1913	6
Oregon	1929	7
Georgia	1931	8
Kentucky	1934	9
Oklahoma	1941	10
Arizona	1945	11
New Mexico	1951	12
North Carolina	1955	14
Texas	1955	14
Wisconsin	1955	14
Virginia	1956	16
Utah	1959	17
Arkansas	1961	18.5
Illinois	1961	18.5
Michigan	1963	21
Missouri	1963	21
Ohio	1963	21
Colorado	1965	24
Connecticut	1965	24
Massachusetts	1965	24

[1]Data taken from Coordination and Planning by Emogene Pliner and Hubert C. Lindsay, 1966, p. 14.

TABLE 33

RANK ORDER OF STATE-WIDE BOARDS
ON MAINTENANCE CONTROL

State-Wide Board	Index on Maintenance Control	Rank
Georgia	100	2.5
North Dakota	100	2.5
Oregon	100	2.5
South Dakota	100	2.5
Arizona	93	5
Florida	87	7.5
Mississippi	87	7.5
Montana	87	7.5
Oklahoma	87	7.5
Wisconsin	80	10
Michigan	73	12
Missouri	73	12
Ohio	73	12
Virginia	67	14
Kansas	60	16
Massachusetts	60	16
Texas	60	16
Illinois	53	18
Utah	47	19
Colorado	33	21
Connecticut	33	21
New Mexico	33	21
Arkansas	27	24
Kentucky	27	24
North Carolina	27	24

TABLE 34

RANK ORDER OF STATE-WIDE BOARDS
ON BOUNDARY CONTROL

State-Wide Board	Index on Boundary Control	Rank
Georgia	100	5
Florida	100	5
Ohio	100	5
Oregon	100	5
Montana	100	5
New Mexico	100	5
Texas	100	5
Utah	100	5
Wisconsin	100	5
Connecticut	89	12.5
Kentucky	89	12.5
Massachusetts	89	12.5
Michigan	89	12.5
Mississippi	89	12.5
North Dakota	89	12.5
Missouri	78	17.5
Oklahoma	78	17.5
South Dakota	78	17.5
Virginia	78	17.5
Illinois	67	20.5
North Carolina	67	20.5
Arizona	56	22.5
Arkansas	55	22.5
Colorado	44	24.5
Kansas	44	24.5

TABLE 35

RANK ORDER OF STATE-WIDE BOARDS
ON ADAPTIVE CONTROL

State-Wide Board	Index on Adaptive Control	Rank
Ohio	100	2
North Carolina	100	2
North Dakota	100	2
Connecticut	89	6
Florida	89	6
Montana	89	6
Oregon	89	6
Texas	89	6
Kentucky	78	10.5
New Mexico	78	10.5
Utah	78	10.5
Wisconsin	78	10.5
Arizona	67	17
Arkansas	67	17
Colorado	67	17
Illinois	67	17
Michigan	67	17
Mississippi	67	17
Missouri	67	17
Oklahoma	67	17
Virginia	67	17
Georgia	56	22.5
Massachusetts	56	22.5
South Dakota	44	24
Kansas	33	25

TABLE 36

RANK ORDER OF STATE-WIDE BOARDS
ON OVERALL CONTROL

State-Wide Board	Index on Overall Control	Rank
Oregon	96.33	1.5
North Dakota	96.33	1.5
Florida	92.00	3.5
Montana	92.00	3.5
Ohio	91.00	5
Wisconsin	88.33	6
Georgia	85.33	7
Texas	83.00	8
Mississippi	85.33	9
Oklahoma	77.66	10.5
South Dakota	77.66	10.5
Michigan	76.33	12
Utah	75.00	13
Arizona	72.00	14.5
Missouri	72.00	14.5
Connecticut	70.33	17
New Mexico	70.33	17
Virginia	70.33	17
Massachusetts	69.66	19
Kentucky	64.66	20.5
North Carolina	64.66	20.5
Illinois	62.33	22
Arkansas	49.66	23
Colorado	48.00	24
Kansas	45.66	25

TABLE 37

RANK ORDER OF STATE-WIDE BOARDS BY RESPONSES TO LEGITIMACY OF CONTROL ACTIVITIES

State-Wide Board	Rank Order Favorable Responses	Numbers of Presidential Responses					
		Maintenance Activities (N = 15)		Boundary Activities (N = 9)		Adaptive Activities (N = 9)	
		Should	Should Not	Should	Should Not	Should	Should Not
Arizona	1.5	34	9	22	5	21	6
Montana	1.5	39	20	29	7	31	5
South Dakota	3	67	7	41	4	44	1
Oregon	4	36	8	22	3	26	1
North Dakota	5	69	18	46	3	43	10
Colorado	8	75	43	63	9	65	7
Florida	8	46	7	27	3	26	2
Georgia	8	96	21	60	10	67	10
Kansas	8	70	19	41	12	39	14
Wisconsin	8	101	49	73	17	75	15
Connecticut	11.5	42	33	38	7	41	4
Massachusetts	11.5	38	37	36	9	44	1
Arkansas	13	34	33	40	4	41	4
Illinois	15	56	43	50	12	45	15
North Carolina	15	83	80	66	24	87	8
Utah	15	23	13	14	6	19	1
Kentucky	17.5	31	42	34	11	40	5
Ohio	17.5	44	59	51	11	52	9

TABLE 37--Continued

State-Wide Board	Rank Order Favorable Responses	Numbers of Presidential Responses					
		Maintenance Activities (N = 15)		Boundary Activities (N = 9)		Adaptive Activities (N = 9)	
		Should	Should Not	Should	Should Not	Should	Should Not
Michigan	20.5	50	78	64	17	68	13
Mississippi	20.5	49	11	25	11	27	9
Oklahoma	20.5	56	31	41	7	45	3
Texas	20.5	87	80	70	30	85	10
Virginia	23	49	83	54	24	67	12
Missouri	24	52	97	52	27	61	17
New Mexico	25	17	28	20	77	25	1

APPENDIX IV

AWARENESS OF CONTROL ACTIVITIES

A. Awareness of Maintenance Control

B. Awareness of Boundary Control

C. Awareness of Adaptive Control

TABLE 38

FREQUENCIES OF PRESIDENTS' RESPONSES CONGRUENT WITH STATE-WIDE BOARD RESPONSES CONCERNING AWARENESS OF THE PERFORMANCE OF MAINTENANCE CONTROL ACTIVITIES

State	N	Congruent Responses for Maintenance Control Activities														
		Financial Activities			Facilities Activities			Program Activities			Faculty Activities			Student Activities		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Arizona	3	2	3	1	3	3	3	3	2	3	1	3	3	0	0	3
Arkansas	5	2	5	5	5	3	5	3	4	4	5	4	5	5	5	5
Colorado	8	5	4	7	7	0	8	8	7	8	8	8	8	4	4	2
Connecticut	5	4	5	5	3	5	3	2	2	4	4	4	4	3	5	4
Florida	4	0	4	0	4	3	2	4	4	4	3	3	3	4	1	3
Georgia	9	6	9	9	9	9	9	7	8	8	9	6	8	1	1	8
Illinois	7	2	7	5	7	7	7	4	5	7	6	7	6	3	6	6
Kansas	6	2	6	5	4	5	6	4	5	6	5	4	1	0	1	6
Kentucky	5	0	5	5	1	1	5	2	3	4	5	5	5	5	4	5
Massachusetts	5	4	3	4	2	5	1	5	5	4	4	5	5	2	3	3
Michigan	9	7	9	9	3	6	9	5	4	4	7	7	7	8	9	7
Mississippi	5	2	4	5	0	0	5	4	2	5	4	5	5	0	0	2
Missouri	10	5	8	10	5	3	2	7	5	1	1	7	10	4	0	1
Montana	4	2	3	4	0	3	0	4	4	4	1	3	4	1	1	3
New Mexico	4	3	1	4	1	4	4	4	3	4	4	4	4	4	4	2
North Carolina	11	9	11	10	11	5	11	8	6	8	10	10	10	11	10	8
North Dakota	6	4	6	1	4	4	6	5	5	6	4	4	5	0	2	6
Ohio	7	0	7	6	3	7	3	7	6	5	7	7	7	2	2	5
Oklahoma	7	5	7	7	5	4	5	7	6	7	2	4	4	1	0	7

TABLE 38--Continued

State	N	Congruent Responses for Maintenance Control Activities														
		Financial Activities			Facilities Activities			Program Activities			Faculty Activities			Student Activities		
		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Oregon	3	1	3	3	3	3	3	3	3	3	2	2	3	1	2	3
South Dakota	5	1	5	2	4	2	5	4	4	5	4	2	3	0	2	5
Texas	12	9	12	11	5	11	6	12	12	12	9	11	8	4	11	11
Utah	3	2	1	2	0	0	3	1	1	0	2	2	2	2	1	2
Virginia	9	6	8	8	2	7	9	7	5	9	1	9	8	0	1	1
Wisconsin	10	4	5	6	9	10	9	10	8	10	5	2	7	4	9	6

TABLE 39

FREQUENCIES OF PRESIDENTS' RESPONSES CONGRUENT WITH STATE-WIDE BOARD RESPONSES CONCERNING AWARENESS OF THE PERFORMANCE OF BOUNDARY CONTROL ACTIVITIES

State	N	Congruent Responses for Boundary Control Activities								
		Liaison Activities			Information Activities			Interpretation Activities		
		1	2	3	1	2	3	1	2	3
Arizona	3	2	3	3	3	1	2	3	1	1
Arkansas	5	1	5	1	5	3	4	5	2	2
Colorado	8	2	8	7	8	1	4	5	6	5
Connecticut	5	1	5	1	5	5	5	4	5	2
Florida	4	0	3	3	4	4	3	4	3	1
Georgia	9	2	6	5	9	9	9	8	7	5
Illinois	7	0	7	5	7	6	6	0	1	6
Kansas	6	2	6	5	5	5	5	2	3	2
Kentucky	5	0	5	1	5	5	4	4	2	4
Massachusetts	5	3	5	3	5	4	2	3	2	3
Michigan	9	7	3	9	6	3	3	6	4	3
Mississippi	5	4	4	4	5	3	4	2	3	3
Missouri	10	9	7	0	8	8	9	9	5	2
Montana	4	1	4	0	4	2	1	2	3	1
New Mexico	4	0	4	2	3	1	1	1	1	1
North Carolina	11	9	8	11	11	11	9	11	6	3
North Dakota	6	3	5	5	6	4	3	5	4	3
Ohio	7	2	6	4	7	5	5	5	5	3
Oklahoma	7	4	6	5	7	6	7	6	1	4
Oregon	3	2	3	2	3	3	1	3	2	2
South Dakota	5	2	5	4	4	4	2	5	0	3
Texas	12	2	9	11	12	12	10	11	6	6
Utah	3	0	3	0	3	0	0	3	1	1
Virginia	9	2	4	9	9	5	4	8	4	7
Wisconsin	10	3	9	4	10	8	6	10	9	4

TABLE 40

FREQUENCIES OF PRESIDENTS' RESPONSES CONGRUENT WITH STATE-WIDE BOARD RESPONSES CONCERNING AWARENESS OF THE PERFORMANCE OF ADAPTIVE CONTROL ACTIVITIES

State	N	Congruent Responses for Adaptive Control Activities								
		Research Activities			Planning Activities			Experimentation Activities		
		1	2	3	1	2	3	1	2	3
Arizona	3	3	1	2	3	3	3	2	2	2
Arkansas	5	4	3	5	3	5	5	2	3	4
Colorado	8	8	4	6	3	8	8	6	6	6
Connecticut	5	5	4	5	4	3	4	3	3	2
Florida	4	4	3	3	1	3	3	2	1	3
Georgia	9	9	8	8	5	5	1	3	3	3
Illinois	7	7	1	5	0	6	7	3	4	5
Kansas	6	6	2	4	3	2	4	5	6	6
Kentucky	5	5	4	5	1	1	3	1	4	4
Massachusetts	5	5	4	5	4	4	2	2	3	4
Michigan	9	7	2	2	7	2	3	8	8	8
Mississippi	5	5	5	4	3	4	5	3	5	4
Missouri	10	9	7	9	5	8	8	5	5	8
Montana	4	4	2	3	2	2	3	3	1	3
New Mexico	4	3	2	1	2	2	2	4	0	4
North Carolina	11	11	9	11	4	7	8	6	1	0
North Dakota	6	6	6	6	0	4	6	1	1	1
Ohio	7	7	4	7	1	6	7	2	2	4
Oklahoma	7	7	6	6	4	6	5	2	3	3
Oregon	3	3	2	2	2	3	3	2	2	3
South Dakota	5	5	0	0	3	4	4	2	3	4
Texas	12	11	11	11	3	11	11	8	4	9
Utah	3	2	0	1	0	1	1	2	1	2
Virginia	9	8	4	7	5	8	7	5	6	5
Wisconsin	10	8	7	9	3	9	10	6	2	10

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