

A COMPARATIVE AND PROGRAMMATIC
APPROACH TO ORGANIZATIONAL CONTROL:
A CASE-STUDY OF TWO HOSPITALS

By

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Dedicated
to
My Family

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Introduction

Despite the importance of the hospital in today's society relatively little research has been performed on the distribution and balance of influence in the hospital as an organization. On the other hand the process by which members determine or influence how things get done in an organization has been the subject of extensive research in such organizations as unions, voluntary associations, colleges, business and industrial organizations. Studies similar to the ones which have been performed in these other organizations simply do not exist for hospitals.

Purpose of the Study

Therefore the purpose of this case-study was twofold. First, was to compare the patterns of control by hierarchical level in two nongovernmental, not-for-profit hospitals (one church operated, the other nonchurch operated) to determine what, if any, significant differences existed between the two. This was done by assessing: (a) perceived vs. desired control and (b) active vs. passive control. Second, was to determine the relationship between the perceptions of individuals at various hierarchical levels (using the French and Raven fivefold typology) as to the bases of supervisory control in each institution and then to correlate those with their perceptions as to satisfaction with the way immediate supervisors were doing their jobs.

Research Methodology

The methodology was essentially the same as that used in several other studies of organizational control in which the control graph approach and the French and Raven fivefold typology were utilized. Data were gathered, from members of various groups and hierarchical levels in the two institutions, by the use of an influence questionnaire. These data were then subjected to both descriptive and statistical analysis.

Conclusions

On Patterns of Control

Based upon the research findings, concerning the patterns of control which were addressed by this case-study it was concluded that there were no significant differences in the patterns of control in the two hospitals which participated in the study. This conclusion was supported by the following findings.

1. Both hospitals were perceived of as being:

- a. characterized by "oligarchic" control structures; and
- b. in need of a more equalitarian distribution of control than that which existed in them.

2. The receipt of control in both organizations was perceived of as being a more general principle than the exercise of control.

On the Bases of Supervisory Control and Satisfaction

Why did the respondents comply with the requests of their organizational superiors? Of the five bases of supervisory control measured in these two institutions, it was concluded that the single most important reason was because subordinates respected the competence and good judgment of their superiors (expert control). The least likely reason for compliance was because the supervisors

could apply pressure or penalize those who did not cooperate (coercive control).

Additionally it was concluded that the strongest and most consistently positive correlations existed between expert control and satisfaction with the way immediate supervisors were doing their jobs. Conversely the most negative correlations existed between coercive control and satisfaction with the way immediate supervisors were doing their jobs.

On the Influence of the Medical Staff

The medical staffs in both hospitals were perceived of as being very influential groups which exercised more control within each of the organizations than was generally believed they should. Additionally, while they were perceived of as exercising a "great deal" of control, it was the opinion of the majority of the respondents from each institution that they were subject to only "some" control within the organizations, a condition which is considered to be a potential source of tension and/or misunderstanding.

CHAPTER I

INTRODUCTION

The Scope of the Problem

Overview

Historians have tried over the years to give an adequate definition of a hospital. All definitions have necessarily varied with the purposes of the hospital. Purposes have changed with the needs of the people and with the state of medical knowledge of the times when the definition was made.

One thing is certain, hospitals have always existed in some form or other.¹ "There has always been some place where the tired, the sick, the injured, the poor, the aged, the destitute and the disabled could go to rest, to repair their sick and broken bodies, to relieve their pain and discomfort, to receive solace and comfort, or to pass their last few moments on earth."²

Regardless of size or purpose, a hospital must necessarily follow a basic pattern of organization just as any other business or industry if it is to achieve its purposes.

There are many types of systems and organizations in

the hospital field which exercise control over and assume responsibility for the functioning of a hospital, but according to Dr. Charles U. Letourneau:

All systems and organizations conform basically to the four major functions of government of any kind of organization. These are:

1. legislation
2. execution
3. administration
4. evaluation

These four functions of government are most commonly associated with the constitutional law applicable to government organizations but the principles apply equally well to industry, to business and to educational, religious and hospital institutions. A hospital may be a part of a vast institutional system or may be a small local institution serving a relatively isolated community.³

At the end of the The Community General Hospital, its authors, Georgopoulos and Mann, state:

The community general hospital could easily claim the dubious honor of being one of the least researched modern large-scale organizations. In spite of its crucial function of aiding the integration and stability of society, through the maintenance of a level of health that permits other social institutions to accomplish their objectives, and in spite of its far-reaching impact upon nearly every facet of everyday life - particularly our economy, standards of living and community welfare - the community general hospital has not received more than a fraction of the scientific attention that its importance as an organization would warrant. As yet our understanding of its functioning, problems and characteristics is extremely limited... and the same is true, only more so, regarding comparative studies of hospitals.⁴

The significance of this comment cannot be allowed to escape attention, since research in the field of health itself - the diagnosis, treatment and prevention of disease - must rank among the oldest of quests for security, not only among the sciences as they are established today, but in

the previous epochs of alchemy, magic and superstition through which they all, including medicine, have passed. Why, when the history of medicine itself is so richly documented and, of later years, so suggestive for the other sciences, has so little regard been paid to the development of hospital organization itself?

Dr. Reginald W. Revans has suggested that to some extent the answer to this question is found in the fact "that studies of hospitals were not needed."⁵ "In the past the hospital created no serious problems for those whose hands were on the levers of social control, for only the poor were driven to seek its shelter. The rich were nursed at home and died in their own beds."⁶ Along these same lines Dr. Sam A. Edwards has suggested that:

Studies of these early hospitals were not needed or desired for the following reasons:

1. Paucity of hospitals.
2. Simplicity of the operation of hospitals.
3. Limited social objectives of hospitals.
4. Hospital social objectives were not recognized as of any value to the community, with the possible exception of giving comfort to the poor... a purely local activity.
5. The method of financing hospital care dictated control by a small group who associated their interests with the immediate community.
6. Demand for hospital care was not of sufficient importance to be significant.
7. The financing of hospitals was not an economic problem, as development in the following areas was limited:
 - a. Technology.
 - b. Medicine.
 - c. Social objectives that hospitals could attain to.
 - d. Public acceptance of hospitals as institutions useful to the entire community and to each of its members.
 - e. The need for inter-hospital cooperation was non-existent or not recognized.
8. Lack of governmental interest.⁷

Someone in this day and age would have difficulty in understanding the expansive and benevolent amateurism with which these early hospitals were established. The suggestion that research might be needed either to identify their problems or to point out their solutions would have been so remote from their patronizing self-confidence as to lack all meaning. In commenting upon this situation Dr. Revans states:

The Encyclopedia Britannica for 1911, for example, in its article on nursing, remarks that whatever other problems the profession may face in the future, it will never be short of recruits. Who, in their senses, would spend years examining the role and status of nurses, given this happy state of affairs? Bullock, in his 1954 report on the profession's needs for self-realization would, to the first daughters of Florence Nightingale, have sounded not only pretentious but also indecent.⁸

Additionally these early hospitals had none of the problems with which they are now perplexed. So long as they were run by amateurs only for the deserving poor they made no demands upon official consciences and so called for no official examination. Even if he had existed the research worker had no channel of entry either from the university or the government department.

One does not create overnight a tradition of hospital research. The fact that a better understanding is needed of present day problems no longer needs emphasis. But resources to carry out the search for understanding are practically non-existent. Few studies get to the heart of the

problem of "what makes for a good hospital," on which alone a tradition of hospital research is built. Nor does one have to look far back into American history to find equally telling illustrations of how little progress has been made in eliminating the ignorance of these vital problems in the best use of precious resources.

The Commonwealth Fund, some 30 years ago, produced a report on the small community hospital and, in its chapter on organization and administration, said of the doctors:

Men already accustomed to having their own way in a proprietary situation promptly identify the hospital with themselves, thinking of the operating room as their operating room, the nurses as their nurses, the superintendent as their agent... these attitudes may lead to irritability in the staff and early friction with the superintendent, if not with the business men who stand behind him. There is a good deal of jockeying for position and much depends upon the tact and firmness with which the hospital is run during this period.... Perhaps a local disaster - a tornado or a fire - throws into relief the advantage of the hospital to the community and shows the doctors their own capacity for a quick and smooth cooperation....⁹

In reviewing these comments Dr. Revans says:

The author of these lines has nothing to learn about one of the most obstinate of all hospital problems - the cult of individualism among the medical staff - but his drastic remedy, teamwork in disaster, is one on which the resources of social science should be able to improve. Nor is this all. A full program of research into the organization and management of hospitals would help to understand this distressing condition among the medical staff, not merely to ameliorate or even cure it, but to prevent it by adequate methods of emotional inoculation in early life. But, judged against what is needed in the way of social therapy, present knowledge is pitifully slender.¹⁰

There is an advantage to this lack of knowledge and that is in this field no misconceived theory need be

disproven before contact can be made with what may prove useful. Also, a very wide variety of ideas can be adapted from other fields, from mechanical engineering to political science, and from nonparametric statistics to social psychology. But, according to Dr. Revans:

The main research problem remains that of defining, analyzing and modifying the attitudes of those who, in the hospitals, command the heights of power. All three must be achieved - definition, analysis and modification - for in the real world of suffering and anxiety, academic or scholarly studies that do not lend themselves to improving the human condition have but a secondary place. They may be brilliant excursions into the fields of statistics, anthropology, economics or social theory, but if they do not help to resolve the problems of hospital effectiveness they are not research into management or organization. These management problems can be understood only if and when those who are actually managing personally join or take over the research needed to resolve the problems. This demands a radical change of view, to recognize that, while help is available, salvation will not be by outside experts.¹¹

The Problem Area

These introductory comments have identified the broad general area in need of research as that of "research into the organization and management of hospitals." This case-study in particular is concerned with what Rensis Likert has referred to as a fundamental aspect of organization: the process by which members determine or influence how things get done in an organization - (the process of control).¹² In the hospital, as in any complex organization some groups and individuals have more influence on the operations of the organization than others. And the part each group or

person plays in the organization depends, among other things, on the relative amount of influence that it has. Moreover a particular group may be perceived by its members, and/or others in the organization, as wielding more, or less, influence than it should insofar as organizational functioning is concerned. The prevailing distribution of influence in the organization may or may not coincide with the distribution that is preferred by those concerned. Imbalances of influence may be present in the organization. Such imbalances, or discrepancies between prevailing and desired patterns of influence in the system, when large enough and unmitigated, can at least in the opinion of Georgopoulos and Mann based upon the results of their study, "result in power conflicts, intraorganizational strains, and dissatisfactions among organizational members, ultimately affecting the performance of the organization adversely."¹³ This position is supported by other studies such as the one by March and Simon¹⁴ who propose that disagreements between participants regarding organizational facts and ideals (including those related to control) contribute to intergroup conflict. Additionally there is the study by Blake and Mouton¹⁵ who have underscored the importance of mutual understanding and agreement in attaining organizational effectiveness. While more recently McMahon and Perritt¹⁶ have reported, from a study of two manufacturing plants, that they found a high degree of concordance was directly related to measures of effectiveness. Concordance they define as "the degree of

agreement among hierarchical echelons' perceptions of the organizational control structure."¹⁷

It is, therefore, important to know something about the distribution and balance of influence in the hospital, especially about the influence of key groups in the organization. Yet, despite the importance of this subject relatively little research has been performed in this area. While the number of hospitals has increased by approximately 250 since 1960, only one major research study is available which makes any reference to the influence of key groups in the hospital.¹⁸ On the other hand the process by which members determine or influence how things get done in an organization has been the subject of extensive research in such organizations as unions,^{19,20} voluntary associations,^{21,22} colleges,²³ business,^{16,24,25,26} and industrial organizations.^{27,28} Studies similar to these do not exist for hospitals.

Purpose of the Study

With this background information in mind, the purpose of this case-study becomes relatively clear. It is twofold: First, to compare the patterns of control by hierarchical level in two hospitals (of different types) to determine what, if any, significant differences exist between the two. This is done by assessing: (a) perceived vs. desired control and (b) active vs. passive control. (These terms are defined in the methodology section of this chapter.) Second, to

determine the relationship between the perceptions of the individuals at various levels (using the French and Raven fivefold typology) as to the bases of supervisory power in each institution and then to correlate these with their perceptions as to satisfaction with the way their immediate supervisors were doing their jobs.

Significance of the Study

Recent research has indicated that there is a direct relationship between the amounts of control exercised by members at all organizational echelons, higher performance and increased satisfaction.^{17,21,25,26,29} This same research has also pointed out that there are certain relationships between control structure and member consensus. While it is not the purpose to examine the relationship between control and performance in these hospitals, it is within the purpose to determine the prevailing distribution of influence which exist within them. This distribution (which for the two hospitals involved is discussed and developed in detail in subsequent chapters) does not always coincide with the distribution that is preferred by those concerned and previous studies have demonstrated that such imbalances, or discrepancies between prevailing and desired patterns of influence, when large enough and unmitigated, can result in power conflicts, intraorganizational strains, and dissatisfactions among members of the organization which ultimately affect the performance of the organization adversely. The fact

that this study demonstrates that such imbalances or discrepancies do exist in these institutions should serve as a warning to the managerial personnel of these organizations as to the existence of a real or potentially imminent problem area that can, if uncorrected, adversely affect the performance of their own and other similar organizations. Additionally, it should serve as an indicator of a problem area in hospital administration which is deserving of and in need of further research.

Likert³⁰ and Tannenbaum³¹ have suggested that the processes underlying a system of high control and its effects derive essentially from the satisfaction of the ego motives of the individual, such as the desire for status, achievement, and acceptance. If their interpretation is correct, then one would expect reward, referent, and expert power to be the more important bases underlying control and its implications. In contrast, if the more traditional Weberian view is indeed correct, then the more important bases of control and its effects would be legitimate authority and the manipulation of rewards and sanctions. Closely related to this point is the fact that there are empirical studies which have shown a direct relationship between control, bases of control, performance and satisfaction with supervisory personnel.^{23,26,32}

Use of the French and Raven fivefold typology in this case-study permitted a categorization, within these institutions, of the more important bases of supervisory control

as perceived by members of the organizations. Results of this categorization tend to support the earlier findings of Likert and Tannenbaum as opposed to the more traditional Weberian view. The bases of control obtained by use of the above mentioned typology were then correlated to perceptions of satisfaction with the way immediate supervisors were doing their jobs to demonstrate that a definite relationship did in fact exist in these institutions between these two variables. Certainly these results point out that this is another area which is in need of additional investigation and study.

Finally significance can be found in the fact that this is one of the first, if not the first, attempts to apply the control graph approach to the study of control patterns in hospitals. The success of this research should demonstrate that there are many additional areas in need of study to which this approach can be applied.

Methodology

There is a serious problem that exists in any study of control and that is the one of measurement. In general researchers have obtained data about control either from available records describing the legal or structural characteristics of organizations or from informants who respond to questions concerning how or where in the organization decisions are made or how influence is exercised.

In 1963 Evan reviewed a number of indices that

illustrate the measurement of control in industrial organizations.³³ These included, span of control; the number of levels of hierarchy; the ratio of administrative to production personnel; "time-span of discretion," which is defined as "the maximum length of time an employee is authorized to make decisions on his own initiative which commit a given amount of the resources of the organization;"³⁴ the hierarchical level at which given classes of decisions are made; and the formal limitations that apply to the decision-making authority of management.

More recently, Whisler, Meyer, Baum and Sorensen have conducted an empirical as well as analytical study in which they focused upon the three general measures of control that have been suggested in organizational literature: (1) individual compensation, (2) perceptions of interpersonal influence recorded on a questionnaire, and (3) the span of control in the formal organization.³⁵ These three measures are recognized as being based upon different concepts of the process of control in organizations. For the concept of control identified as "control over system output" (system control), the compensation paid the individual by the organization is used as the measure of control. Where control is defined as "perceived interpersonal control," scaled perceptions of individual influence is the measure of control. And finally for the concept of control which is "formally defined (or intended) interpersonal control," the measure is the span of control.³⁶ Each of these measures can be

appropriate depending upon the concept of control to be measured. In determining which measure to use the researcher should take into consideration several factors. First to be considered is the relevance of the control construct (concept) to the other variables studied. Where the other variables relate to the organization as a whole, for example changes in technology, changes in size or dispersion and differences in the environment (cultural or demographic) then the system control concept with its "individual compensation" measure is likely to be most relevant. When the other variables are internal in nature, such as technology and task complexity then the span of control measure is probably the most relevant. Perceived control is apt to be most relevant when psychological variables are studied.³⁷ The second factor to be taken into consideration is ease of use. In this regard, qualitative differences in the various measures can be seen. Questionnaire data are costly and difficult to gather. Compensation data are often confidential, especially in private businesses. Formal organization structures on the other hand are normally available, provided one has a reliable and knowledgeable informant or provided that the organization maintains and preserves organizational charts. The availability of the different kinds of data desired is often related to the organization or research site within which the research is to be conducted.³⁸ The final factor to be discussed, which should be taken into consideration, is that of the research design. If the research is designed to

compare the present with the past, then the influence questionnaire measure is unfeasible (unless the questionnaire had for some reason been administered previously). In this type of project it would be necessary to use either the span of control or compensation measures. The influence questionnaire or some variation of it; however, may be the only feasible measure to be used when the researcher encounters informally organized groups, or organizations that do not use monetary compensation.³⁹

Taking into consideration the concept of control (Chapter II) and the research design (Chapter IV) the work described in the remainder of this paper relies for measures of control largely on the averaged judgments by organization members in response to questionnaire items dealing with the amount of influence or control exercised by various groups in their organization. This approach to measurement of control has limitations; yet it seems to be more suitable than the available alternatives for the measurement of the particular concepts with which this research is concerned.

The specific methodology which is used in this study is essentially the same as that which has been used in other studies of organizational control in which the control graph approach and the French and Raven fivefold typology have been utilized. An influence questionnaire, which was developed by using research questions from previous studies conducted by Dr. Arnold S. Tannenbaum and others at the Survey Research Center, Institute for Social Research,

Department of Psychology, University of Michigan, was distributed in two very carefully chosen hospitals for the purpose of gathering certain data from members of various groups and hierarchical levels in the two institutions. These data which have been collected are subjected to both descriptive and statistical analysis in the following chapters of this paper.

The control graph technique is especially utilized in this study to:

1. Measure the perceptions of various members from several different groups and hierarchical levels, in each of the hospitals, as to the type of control structure which characterizes their institution (perceived control). In his recent work Tannenbaum uses the words "actual control" in his discussions of this concept.²⁹

2. Measure the perceptions of this same group of individuals as to how control should be distributed in their institution (desired control). Once again Tannenbaum uses the words "ideal control" to describe this concept in his book.²⁹

3. Compare the perceived control with the desired control for each institution based upon the perceptions of this group of individuals.

4. Measure the perceptions of this same group as to the "active" and "passive" control curves which characterize their institution.

"Active Control" in this context means the extent

to which the actor (either an individual or a group) exercises control in the organization.

"Passive Control" on the other hand means the extent to which the actor is controlled within the organization.

5. Measure the perceptions of these same respondents as to the amount of perceived and desired control (influence) that the medical staff has or should have on how their institution functions - on how it is run and how it operates.

The French and Raven fivefold typology is used in the study to measure the perceptions of these same individuals as to what constitutes the bases of supervisory control in each of these institutions.

Assumptions

In adopting the control graph approach to the measurement of control, the assumption is made that organization members as a group are able to provide reasonably valid and reliable data. There are those who would call this assumption into question saying that it is apparent that organization members differ in their judgment about control. In response to this, it is important to bear in mind that the reliability of the measures, which are intended as organizational indices, is a function of the number of respondents chosen from each of the organizations studied. Thus, although the reliability of scores based on an individual's responses may be low, averaged responses may be quite stable. The fact that individual respondents may be

unsure of their answers and that they may be in error does not in itself vitiate the method, provided that respondents give better than chance answers, that the errors are random, and that a sufficient number of respondents are available. It is assumed in this study that these conditions do in fact prevail. Additionally it is assumed, based on the results of previous research, that the control graph approach to the study of control in organizations, was and is an empirically reliable and valid approach to the study of this concept.

Organization of the Study

The remainder of this paper is devoted to developing and testing these concepts. Chapter II elaborates on the nature of control, answering such questions as: (1) What is control? (2) What are its functions? and (3) What are the bases for control? Chapter III discusses at some length the "control graph" and its application to the study of control in organizations. Chapter IV is devoted to the research design, method and procedure used in the study. Also included in this chapter are such items as the (1) selection of the participating hospitals; (2) selection of the respondents; and (3) methodological limitations of the study. Finally Chapter V presents the findings of this investigation, while the sixth chapter summarizes the dissertation, drawing those conclusions which seem reasonable in light of the results, and indicates the implications this

inquiry holds for further research.

Data not an integral portion of the body of the paper but supplemental in nature, are included in appendices, and are cross-referenced in the appropriate places in the text.

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CHAPTER II

THE NATURE OF CONTROL

Overview

What exactly does control mean? When this question was asked of a number of managers, in both government and industry, the answers showed a general lack of agreement.¹

It is important that managers have a clear understanding of this concept. A manager who does not understand control cannot be expected to exercise it in the most efficient and effective manner. Nor can staff men whose duty it is to design systems and procedures for their organizations design efficient systems unless they possess a clear understanding of control. And certainly anyone who is subject to control by others has to understand clearly what that means if he is to be contented in their relationship.

When control is not understood, good management is a very improbable result. This is especially true when - as frequently it is - control is identified with management, or is confused with certain devices of management, such as

objectives, plans, organization charts, policy statements, delegation of authority, procedures, and the like. Sherwin has stated that "the manager who believes managing and controlling are the same thing has wasted one word and needs a second to be invented."² He goes on to add that "one who believes he has provided for control when he has established objectives, plans, policies, organization charts, and so forth, has made himself vulnerable to really serious consequences. A clear understanding of control is therefore indispensable in an effective manager."³

Understanding control really means understanding at least three principal things about it: What it is; what its functions are; and finally the bases for its existence. By addressing these three things I have framed a concept of control that serves as a basis for the research which was conducted as a part of this dissertation.

What is Control

The word control is difficult to define as it appears to have different meanings in different contexts when used by different authors. For example Clark states:

"Control" means, primarily, coercion: orders backed by irresistible power. In a sense, no coercion is truly irresistible, or almost none. One can always break the law if one will take the consequences... and sometimes the penalty is less than the profits of the offense. But the earmark of coercive control is penalties, imposed by a power which can, if it will, make them heavier than anyone but the most desperate would deliberately incur.⁴

He readily admits there are other means of exercising control.

Newman, on the other hand, defines control as:

...seeing that operating results conform as nearly as possible to the plans. This involves the establishment of standards, motivation of people to achieve these standards, comparison of actual results against the standard, and necessary corrective action when performance deviates from the plan.⁵

Dubin, in writing of control within organizations but nevertheless applicable to society in general, states:

Control within an organization has two major dimensions: We can conceive of control as the process of developing systems of standards for the guidance of organization behavior; we can view control as a system for enforcing standards of organization behavior.⁶

Roucek defines control as "a collective term for those processes, planned or unplanned, by which individuals are taught, persuaded, or compelled to conform to the usages and life-values of groups." He expands his definition by stating further:

Control occurs when one group determines the behavior of another group, when the group controls the conduct of its own members, or when individuals influence the responses of others.... Control, consequently, operates on three levels - group over group, the group over its members, and individuals over their fellows. In other words, control takes place when a person is induced or forced to act according to the wishes of others whether or not in accordance with his own individual interests.⁷

Hill and Egan have defined control:

As the selection of guidelines for the decisions of lower participants as well as the establishment of rules to enforce conformity to the standards of performance which are set by superiors.⁸

More recently Tannenbaum has defined control as:

Any process in which a person or group of persons or organization of persons determines, that is, intentionally affects, the behavior of another person, group, or organization.⁹

It becomes apparent from these quotes that "the word control has the serious shortcoming of having different meaning in different contexts"¹⁰ This attribute has been noted by such authors as Drucker,¹¹ Kast and Rosenzweig,¹² Litterer,¹³ and Lunski.¹⁴ Each points out that management control may be viewed in two parts. One relates to the achievement of effective control over subordinates through the direction of their activities. The second relates to the evaluation of the desired outcome of an activity and the making of corrections when necessary. This dichotomy has been summarized well by Reeves and Woodward:

In the literature relating to organizational behavior there is ambiguity in the use of the word control. The confusion arises largely because to control can also mean to direct. Precisely defined control refers solely to the task of ensuring that activities are producing the desired results. Control in this sense is limited to monitoring the outcome of activities, reviewing feed back information about this outcome, and if necessary taking corrective action.¹⁵

Partially because of this confusion, control is considered to be "one of the thorniest problems of management today."¹⁶ While it has been widely discussed, there are still some writers who content that it lacks a common area of understanding. It has "scarcely any generally accepted principles, and everyone in the field, therefore, works by intuition and folklore."¹⁷ Rowe has noted:

Although management control is widely discussed, little has been done to formulate a body of principles for use in business system design.¹⁸

Furthermore, Jerome has pointed out:

Principles and procedures and substantive content simply have not been rigorously developed in the area of executive control.¹⁹

More recently, Mockler has written:

In spite of the fact that management control is one of the basic management functions, there is no comprehensive body of management control theory and principles to which executives can turn for guidance in performing their management control functions.²⁰

Recognizing this ambiguity regarding the use of the term control and the alleged lack of control theory it is necessary to state that the definition of control used in this paper is the one provided by Tannenbaum which has been referenced above. In effect, this eliminates from consideration the works of those authors who use the term control to refer solely to the traditional "constant cyclic-type activity of plan-do-compare-correct" with its "continuous, concomitant system of communication or flow of information." For a rather comprehensive review of the work done in this area the reader is referred to a recent article written by Giglioni and Bedeian, who concluded by stating:

Even though control theory has not achieved the level of sophistication of some other management functions, it has developed to a point that affords the executive ample opportunity to maintain the operations of his firm under check. Unquestionably however, continued interest and research in this area are necessary to bring control theory to new levels of sophistication and, above all, pragmatism.²¹

Although the definition of control provided by Tannenbaum and utilized in this study conforms essentially to what many authors mean by control, power, or influence,²² there certainly are differences of opinion regarding the definition

of these terms.^{23,24} For example, some writers prefer to think of power as an exclusively coercive form of control. Weber was the first of the classic authors on organization to reject this limited notion of power, and many contemporary social scientists, including Tannenbaum, are inclined to think of power as having bases in addition to, although by no means excluding, coercive ones. Some authors like to think of power in terms of differentials or ratios that describe the relative "strengths" of persons in a system. In this view power is essentially the effect that one person has on a second compared with that which the second has on the first. This is an important index of power relations, but it is conceptually a derivative of the more general definition proposed by Tannenbaum and the one used in this paper. A number of authors prefer to distinguish power from control by defining power essentially as the ability or capacity to exercise control, that is, as "potential control." For example, Goldhamer and Shils state that "a person may be said to have power to the extent that he influences the behavior of others in accordance with his own intentions."²⁵ While Etzioni says that "power is an actor's ability to induce or influence another actor to carry out his directives or any other norms he supports."²⁶ Both of these definitions are consistent in essential respects with the one used in this paper, although Etzioni's statement implies what is called "potential control." Many authors use the term "authority" to refer to the formal right to

exercise control, and I do likewise in this paper.

The meaning of control, then as defined in this paper, can be seen in a simple graph which represents control as a cycle beginning with an intent on the part of one person, followed by an influence attempt addressed to another person, who then acts in some way that fulfills the intent of the first. Figure 1 presents the control process in its simplest form.

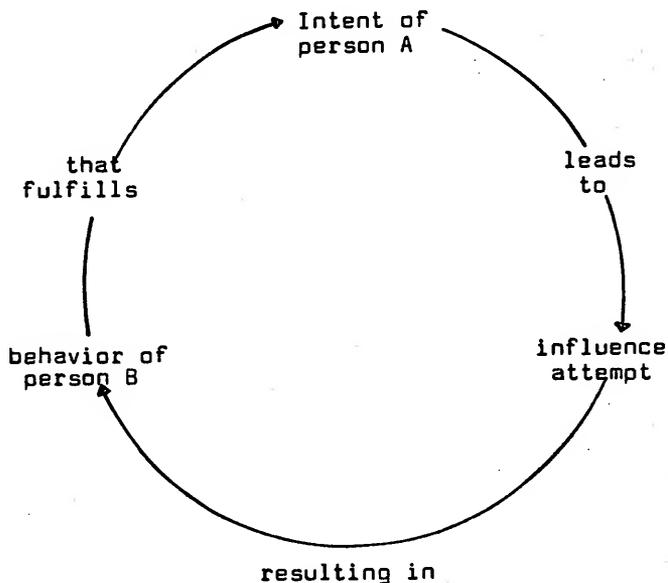


Figure 1. The Control Process

This graph was originated by Tannenbaum who states that:

There are, of course, many elements in addition to those indicated that are important in understanding this process. These include the assumptions and values of the actors, the "basis of power" that help explain B's response, and the great variety of means by which A attempts to influence B. Such means may be direct or indirect; they may include orders or requests, threats or promises, and so forth. The behavior of B may involve relationships with other persons or it may involve actions in relation to technological elements, such as tools, computers, or production lines. Thus technology may enter into the cycle at various points, creating what has been called a "sociotechnical" system. For example, computers may provide A with information that leads him to request B to do one thing rather than another. Or A may simply use the computer to tell B. A may also speed up a production line, which illustrates another form of influence attempt on B.

The intentions of A may be initiated by him, or they may be the intentions of others that are acquired by A. These intentions may imply quite specific actions for B, as when a supervisor gives detailed instructions to a subordinate; or they may be very general, although no less real, as in the formulation of organizational policy. The behavior of B, which is the object of A's intentions, may, in our definition, be covert as well as overt. A, for example, may have intentions regarding the intentions of B, and vice versa.²⁷

It can be stated then that Figure 1, although simplified, represents the essence of the control process, as it has been defined. Such a cycle, as that depicted in the graph, includes essentially what Etzioni refers to as "compliance." The control cycle is a basic unit of organization structure; organizations are composed of large numbers of such cycles in interrelationship. If a cycle breaks down at any point, for whatever reason, control cannot be said to exist.²⁸ Chronic breakdowns of such cycles imply a breakdown in the organization itself.

What are its Functions

Just as control has been variously defined, so has the concepts as to the functions of control varied. Control has been conceptualized in both a narrow and broad sense, as evident in the following quotes from different writers.

In the broad social sense Ross has stated that:

The function of control is to preserve that indispensable condition of common life, social order. When this order becomes harder to maintain, there is a demand for more and better control. When this order becomes easier to maintain, the ever-present demand for individual freedom and for toleration makes itself felt. The supply of social control is evoked, as it were by the demand for it, and is adjusted to that demand.²⁹

Young condenses this definition further by stating that the function of control is "to bring about conformity, solidarity, and continuity of a particular group of society."³⁰

Roucek, in commenting on Young's definition, states:

These purposes may possibly guide far-seeing statesmen of social scientists, but most individuals who endeavor to control their fellow men show little perspective in their efforts. Often they merely struggle to increase the acceptance of the modes of conduct that they themselves prefer.³¹

While writing of control within the organization, as opposed to society in general, Hill and Egan have stated that:

Control is a critical element in the administrative process. Its purpose is to insure that work activities are directed toward the accomplishments of stated objectives. Therefore, it compliments both the determination of goals and the subsequent structuring of work flows which are intended to accomplish these aims. Since both of these elements are continuing processes, regulatory mechanisms also must extend over time. As a result they bear a vital relationship to adaptation and innovation.³²

In another place these same authors state:

If control is to approach its ideal use, it must perform three functions: (1) evaluation, (2) enforcement, and (3) motivation. Too often, however, emphasis is concentrated on the second function. Managers fail to pay sufficient attention to the monitoring processes which must be used to gather, sift, and evaluate information pertinent to the activities to be governed. Frequently, even less attention is devoted to constructing a system which is designed to motivate desirable forms of behavior. Failure to give sufficient weights to each of these functions can lead to the creation of dysfunctional control procedures.³³

Tannenbaum, on the other hand, writing about the functions of control, in an organization, states that:

A social organization is an ordered arrangement of individual human interactions. Control processes help circumscribe idiosyncratic behaviors and keep them conformant to the rational plan of the organization. Organizations require a certain amount of conformity as well as the integration of diverse activities. It is the function of control to bring about conformance to organizational requirements and achievement of the ultimate purposes of the organization. The coordination and order created out of the diverse interests and potentially diffuse behaviors of members is largely a function of control.³⁴

Since I have previously elected to accept Tannenbaum's definition of control, for the sake of continuity I also recognize and accept his concepts as to the functions of control.

What are the Bases for Control

Theories on the bases of control have changed through the years as the concepts of control have changed, and although the theoretical analysis of control in social systems has been utilized for a long time, empirical research has only recently been initiated in organizations.

The "human-relations" approach that inspired a great deal of research in organizations avoided explicit reference to social power or control, partly because these terms carried connotations that were inconsistent with the ideal of the harmonious, conflict-free organization. This research was concerned implicitly with enhancing the control exercised by management through devising more effective techniques of supervision and through reducing "resistances" on the part of workers to managerial policies. Therefore, some advocates of human relations were committed, implicitly at least, to enhancing control within organizations while denying its importance - a contradiction that, according to Crozier, may have contributed to the charge that human relations was manipulative.³⁵

Traditionally, the concept of power has been associated with forms of tyranny, elitism or authoritarianism, or with conflict and struggle. Almost all the literature on the power of leadership, according to Bell, stems from the works of Aristotle and Machiavelli and is committed to "the image of the mindless masses and the image of the strong-willed leader."³⁶ Bendix maintains that historically, ideologies of management have grown up specifically to justify the employers' exercise of authority, which was associated in one way or another with the subordination or exploitation of workers.³⁷

While many of the classical conceptions of control, including those of Weber in bureaucracies and Michels in

political organizations, have been valuable in analyses of contemporary organizations, the changing character of societies and organizations over the years is making apparent some of the limitations of the older concepts. The emphasis in contemporary social science on quantitative research has also contributed to changes in interpretations of the control process because of the need to develop concepts that are operational as well as theoretically meaningful. At the same time, research findings themselves have led to reinterpretations of some of the older conceptions.³⁸

The changes, of course, with which this section is concerned is the changes that have taken place in analyses of the bases of power. Coercion played a prominent role in the traditional analyses, consistent with the presumed conflict between leaders and followers. Leaders were to be obeyed out of fear of punishment or hope for reward. Weber, however, has argued that the stability of social systems depends on acceptance by followers of the right of leaders to exercise control. This implies legitimate authority, and Weber defines three types: (1) "Charismatic" authority, according to which leaders are thought to be endowed with extraordinary, sometimes magical powers. Charisma on the part of a leader elicits obedience out of awe. It is illustrated in its pure form by "the prophet, the warrior hero, the great demagogue." (2) "Traditional" authority, which appertains to those who have the right to rule by virtue of birth or class. The traditional leader is obeyed because

it is the thing to do and because he or other members of his family have always been followed. Examples are certain patriarchs, monarchs, or feudal lords. (3) "Legal" authority, which applies to those who hold leadership positions because of demonstrated technical competence. The legal leader is obeyed out of a sense of duty to the law. In the ideal bureaucracy, leadership is based almost exclusively on legal authority.³⁹

The nature of authority visualized within this framework is consistent with many of the traditional analyses: Weber's authority figures are prophets, warriors, demagogues, patriarchs, lords and bureaucrats. However, more recent analyses have outlined additional bases of power.

Simon, for example, points to the importance of social acceptance and approval.⁴⁰ Approval and disapproval represent forms of reward and punishment, but they deserve special consideration because they are frequently dispensed, not only by the designated leader, but also by others. Therefore, a subordinate may obey a supervisor, not so much because of the rewards and punishments meted out by the supervisor, as because of the approval and disapproval by the subordinate's own peers. Confidence may be another basis for acceptance of a supervisor's authority. A subordinate may, for example, trust the judgment and therefore accept the authority of a superior in areas where the leader has expertise. French and Raven make a further distinction between the influence of a leader based on confidence by

subordinates in the leaders' expert knowledge and "informational influence" based on acceptance by subordinates of the logic of the arguments that the leader offers.⁴¹ An expert leader, then, may exercise control, not simply because he is an acknowledged authority, but because his decisions, being based on expertise, are logical, appropriate, and convincing. Subordinates are persuaded that the decisions are correct.

Some of these concepts represent radical departures from the traditional ones where coercion played a prominent role in the analyses of the bases of power.

French and Raven have developed a fivefold typology which suggests a number of different categories of bases of control.⁴² This framework offers a clear distinction between the various categories of control. They list five specific bases of power which are as follows:

1. Reward Power: This is based on a subordinate's perception that a superior has the ability to mediate rewards for him.
2. Coercive Power: This is based on a subordinate's perception that a superior has the ability to mediate punishments for him.
3. Legitimate Power: This is based on internalized values which dictate that there is a legitimate right to influence and an obligation to accept this influence. The organizational position of the superior is a major factor of the legitimate power base.

4. Referent Power: This is based on the desire of a subordinate to identify with a superior. The identification of the subordinate can be maintained if he behaves, believes, or perceives as the superior does.

5. Expert Power: This is based on a subordinate's perception that a leader has some special knowledge or expertise in a given area. Experience, training, reputation, and demonstrated ability are among the many reasons why a subordinate attributes expertness to a superior.

Recently there has been another base of control suggested by Katz and Kahn. They call their new power variable, "incremental influence," which they say is stated as follows:

...we consider the essence of organizational leadership to be the influential increment over and above the mechanical compliance with routine directives of the organization.⁴³

The five bases proposed by French and Raven and the incremental concept offered by Katz and Kahn afford researchers an important conceptual distinction. Reward power, coercive power, and legitimate power are exercised primarily in areas which are largely specified by the organization. For example, a person's position in the organizational structure largely dictates his degree of power in these three areas. However, the exercise of referent and expert power are idiosyncratic in character; i.e., these power bases are uniquely determined by the behavior of the superior and his ability to interact with subordinates. Therefore, the superior's ability to influence his subordinates, based on the referent and expert power forms,

constitutes an increment which is beyond that dictated by his position in the organizational structure. Consequently, referent power and expert power are the bases of incremental influence and are operationalized as the combination of referent power and expert power.⁴⁴

Two other changes which have occurred in the conception of control are worthy of mention before this section is completed. First there is the change which relates to the assumptions concerning the mutuality - unilaterality of control. A view common to traditional analyses argues that the control process is unilateral; one either leads or is led, is strong or weak, controls or is controlled. Simmel, in spite of his general adherence to the traditional conflict view of power, noted a more subtle interaction underlying the appearance of "pure superiority" on the part of one person and the "purely passive being led" of another: "All leaders are also led; in innumerable cases the master is the slave of his slaves."⁴⁵ Several social scientists emphasize the fact that contemporary analyses are more likely than the earlier ones to consider relationships of mutual as well as unilateral power, of followers influencing leaders, as well as vice versa. Finally there is the change which has taken place in the assumptions as to the total amount of control in an organization. Traditional analyses of social power assume that the total amount of power in a social system is a fixed quantity and that leaders and followers are engaged in a "zero sum games": increasing the

power of one party must be accompanied by a corresponding decrease in the power of the other. Now social scientists such as Lammers,⁴⁶ Likert,⁴⁷ Parsons,⁴⁸ Tannenbaum and Kahn⁴⁹ are inclined to question the generality of this assumption. They believe that the total amount of power in a social system can grow and that the leaders and followers can therefore enhance their power jointly. The converse is also true in their opinion.

Summary

In summarizing the Nature of Control it can be stated: (1) that there is a certain amount of ambiguity associated with the term "control" but that as it is used in this paper it refers to any process in which a person or group of persons or organization of persons determine, that is, intentionally affects, the behavior of another person, group or organization; (2) that its functions are diverse but the recognized one in this thesis is the one contributed to Tannenbaum, namely that its function is to bring about conformance to organizational requirements and achievement of the ultimate purposes of the organization; and (3) that there are at least six bases of control which have been subjected to empirical research - reward, coercive, legitimate, referent, expert and incremental.

Organizational control has been studied from a number of different approaches, one of which is the control graph approach - the subject of Chapter III.

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CHAPTER III

THE CONTROL GRAPH AND ITS APPLICATION TO THE STUDY OF CONTROL IN ORGANIZATIONS

The Control Graph

The control structure of an organization can be represented in terms of a general schema which has been called the "control graph." Such a graph was first applied by Tannenbaum and Kahn in 1957 to a study of four trade-union locals.¹ This schema characterizes the control structure of an organization in terms of two axes. The horizontal axis of this graph represents a scale of hierarchical levels in an organization. It may run from rank-and-file members at the low end through various levels to the president (top management) at the high end. The vertical axis of the control graph represents the amount of control over the organization's policies and actions that is exercised by each of the hierarchical levels. This may vary according to Tannenbaum and Kahn's approach from "none" to "a very great deal of control." Thus, "having a great deal of control" means that persons at the hierarchical level under consideration determine in large degree the specific actions and policies of the organization. "Having no control" on this dimension means that all persons at a given level have

no "say" or influence in determining the policies and actions of the organization. A curve can be created by plotting and connecting the points that show the amount of control characteristic of each hierarchical level. Figure 2, graphically illustrates this concept.

It is clear from this graph that an infinite number of Amount of control exercised

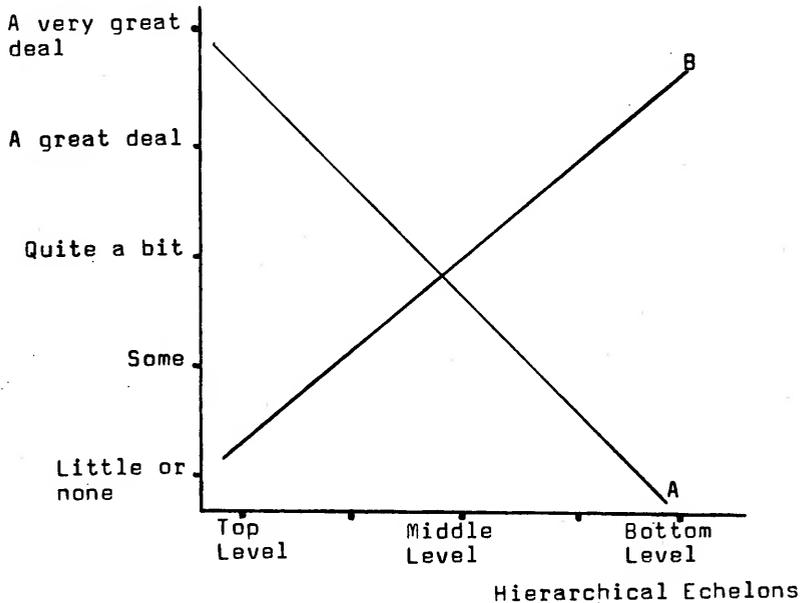


Figure 2. The Control Graph

curves of varying shapes are possible. For example, a curve may have a negative slope, indicating that the amount of control increases as one goes up the hierarchy (Figure 3). It is also conceivable for the curve to have a positive slope (Figure 4). This shape of curve applies to an

organization where individuals at the lower level as a group have more control than the individuals at the uppermost level, even though these may be active and effective leaders. In some organizations, there may be very little increase in the degree to which the various levels institute control until the top of the organization is reached; there a great increase takes place. This type of organization is controlled by only a few individuals (Figure 5). Other organizations may be characterized by a relatively flat curve. Such a curve may be low and flat, indicating a very low degree of control throughout the organization (dotted line in Figure 6). On the other hand, a flat curve might be high on the vertical axis, indicating that people at all

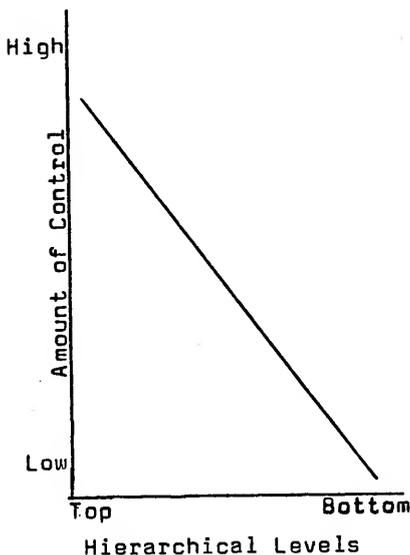


Figure 3. Autocratic Model

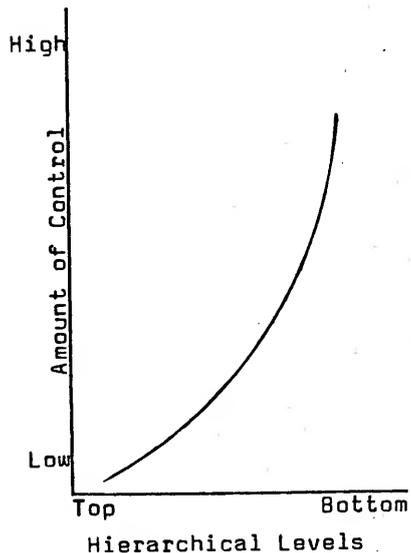


Figure 4. Democratic Model

levels in the organization have a great deal of influence (solid line in Figure 6).²

It should also be readily apparent that these curves may differ from one another, not only in their shape, but also in their average height, suggesting, at least theoretically, that organizations may differ in their total amount of control, as well as in the relative amount of control exercised by the respective hierarchical levels. If this be true, then it becomes apparent that the control graph illustrates a concept that is in opposition to what some writers refer to as "the dominant tendency in the literature... that there is a fixed quantity of power in any relational system...."³

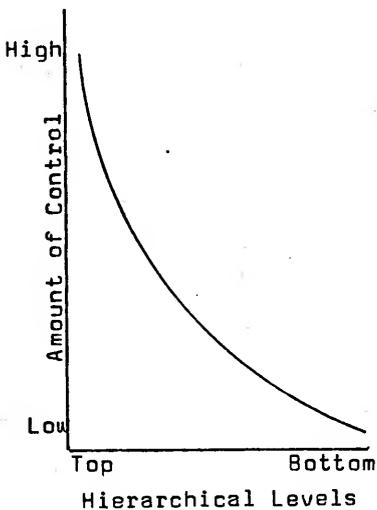


Figure 5. Dictatorial Model

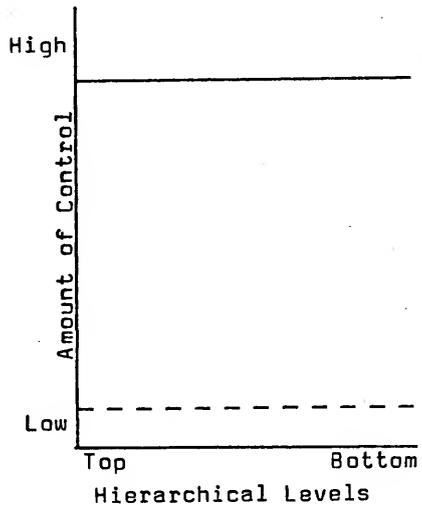


Figure 6. Anarchic and Polyarchic Models

The assumption of a variable amount of control in organizations represents to Tannenbaum, an assumption of basic theoretical and practical importance. He states:

Theoretically, this assumption opens up a number of possibilities that would not otherwise be apparent. Consequently it allows us to resolve what might otherwise appear to be opposing and irreconcilable arguments concerning the implications of control in organizations. For example, one argument holds that the enhancement of control by rank-and-file members is essential for increasing organizational effectiveness, because involvement in decision making by these persons, especially in the context of a "democratic society," is necessary to foster conditions of identification, motivation, and loyalty. On the other hand, the conflicting argument goes, a high degree of control by leaders is necessary for the efficient direction and administration of organizations. Our use of the control graph has led us to question the "fixed-pie" assumption underlying this controversy and has raised the question of why increased control exercised by both leaders and members does not create conditions for more effective organizational performance.⁴

Control curves then give us, by implication, a good deal of information about an organization. They tell us something about how control is distributed in an organization also something about the total amount of control that is instituted in that organization. They can also tell us whether the actor is doing the controlling (active control) or is being controlled (passive control). They can be used to describe the amount of control and the distribution of control that is desired by the membership. This can then be compared with the perceived control curves. If these two curves, perceived and desired, were superimposed, the discrepancies between them would be expected to have an important bearing on membership participation, involvement, and loyalty

to the organization. In an organization where the perceived control curve differs sharply from the desired curve one would expect to find a corresponding degree of dissatisfaction, frustration, and disaffection among the members. This can be contrasted with another hypothetical organization which has the same perceived control curve but in which the desired control curve corresponds more closely to the perceived curve and in which one would expect and predict a greater degree of membership satisfaction and loyalty.⁵

Several capabilities of the control graph approach to the study of control in organizations have been suggested in the literature. Some of them are as follows:

1. It provides a convenient device for characterizing and thinking about control in social systems.⁶

2. It provides a method of description which is both quantitative and conceptually meaningful.⁷ In this sense it has been stated that it can be used to conceptualize the prescriptions of major organizational theories in terms of the amount and distribution of control affecting organizational functioning.⁸

3. It illustrates the importance of two distinct aspects of control in organizations: the distribution of control and the total amount of control.⁹

4. It has been offered as one approach to the comparative study of organizations with the advantages of being a general, quantitative technique with conceptual as well as operational potentialities.¹⁰

5. It opens up to the process of scientific testing a number of hypotheses that have been discussed primarily in speculative terms.¹¹ For example, it can be used to test hypotheses which emanate from bureaucratic theory, power equalization and participative management models as well as the theory of a possibly increase in the amount of total control.¹²

This is an impressive list but it is not the writer's intention to suggest that these are unique characteristics of the control graph approach only, or to create the impression that the approach is without weaknesses, because it does have some definite limitations. One of the most criticized limitations pertains to the method of measuring control. The control graph approach relies for measures of control largely on the averaged judgments by organization members to questionnaire items dealing with the amount of influence or control exercised by various groups in their organization and, of course, organization members differ in their judgments about control. Proponents of this approach logically explain away this limitation by maintaining that averaged responses are quite stable. And by stating that the fact that individual respondents may be unsure of their answers and that they may be in error does not in itself vitiate the method, provided that respondents give better than chance answers, that the errors are random, and that a sufficient number of respondents are available.

Another limitation pertains to the fact that there are aspects of control in organizations that appear to have broad implications, but are not fully reflected in the control graphs as they are presently drawn. While the graphs are designed to describe the amount of control that individuals at various hierarchical levels exercise, they do not describe the means through which this control is exercised.

Finally there is the limitation that these curves may be better diagrammed in terms of specific areas of control rather than in terms of general control in the organization. Critics of the approach maintain that if specific areas are used, a satisfactory way of integrating these to provide an overall picture must be developed.

Despite these limitations the control curves have been used successfully to test relationships between aspects of control and other organizational factors. Many questions and hypotheses relating control to other functions in organizations have been proposed in the literature. For example, how does control relate to conformity behavior, to participation, to leadership characteristics, to the ideology or philosophy of an organization? What effects do such variables have on the control structure of an organization, and in what ways are they affected by that structure? These and other implications and questions relating to the use of these curves are summarized below.

Applications

Prototypes

The control curves characterize in terms of two continuous variables a number of organizational types that have heretofore been treated as important but discrete. Such concepts as democracy, autocracy, and laissez-faire as distinct types or classes of control structure are brought into a single schema. Thus, this approach provides a unitary way of looking at these types, and at the same time working with the many variations between these extremes. Several articles have been written on this subject, but one of the more informative ones is the article written by Tannenbaum in which he discusses the various types of organizational control, based on a study of four local unions.¹³ Other supporting studies include the ones accomplished by Tannenbaum and Kahn,¹ Likert,¹⁴ Mann and Hoffman,¹⁵ Williams, Hoffman and Mann,¹⁶ and McMahon and Perritt.¹⁷

Distribution of Control

The control curve presents a picture of the control distribution in an organization. Organizational control, however, is a more fluid and dynamic process than is suggested by the control curves, which reflect the situation at a given point in time. The question of alignments and coalitions is one that should be considered.¹⁸ For example, one group may be lower than another in the amount of control

it can institute in the organization, but it might add to its effective control by joining forces with a third group. Groups might do this on a temporary basis relative to a specific issue, or they might form a more permanent faction or clique.

The distribution of control in formal organizations has been the subject of investigation by Tannenbaum and Georgopoulos.¹⁹ In summarizing the results of their study the authors make the following statements:

We have presented an analytical framework for the study of the distribution of control in formal organizations, illustrated with data from recent research, and have indicated some of the issues involved as well as some of the directions which further research may follow. Beginning with the "control graph," we have elaborated on four major concepts pertaining to the distribution of control: (1) active control, (2) passive control, (3) orientations of control, and (4) sources of control. In each case, we have proposed some hypotheses which could be fruitfully investigated within a distribution of control approach to the study of formal organization.²⁰

The distribution of control in foreign industrial organizations has also been the subject of investigation. with the idea in mind that organizations in all societies share common characteristics.²¹ The universality and centrality of control in organizations suggest it as an important area for study and particularly as an area within which comparative research may profitably be conducted.

Total Amount of Control

The issue of total amount of control in a system has been of concern to social scientists more implicitly than

explicitly.²² Most analyses of control have been concerned with the relative control exercised by groups within organizations rather than with total amount. The literature, therefore, provides little guidance concerning the conditions under which the amount of control in a system may expand.

As was pointed out in Chapter II, traditional analyses of social power assumed that the total amount of power in a social system was a fixed quantity and that leaders and followers were engaged in a "zero sum game," where increasing the power of one party must be accompanied by a corresponding decrease in the power of the other.

Today there are several social scientists who are inclined to question this assumption of a fixed quantity of total amount of power. Among this group one finds such names as Deutsch, Lammers, Likert, Parsons, Tannenbaum and Kahn. In their opinion the total amount of power in a social system can grow, and leaders and followers can therefore enhance their power jointly. Conversely, the total power may, in their opinions, also decline, with all the groups in the system suffering corresponding decreases. The control graph is of important theoretical interest concerning this subject since it generates two organizational or system measures; the total amount of control represented by the height of the control curve and the distribution of control represented by the slope. These measures have been used to describe an organization's control structure and in

hypothesis testing by operationalizing prescriptions of different organizational theories.²³

In his book, Control in Organizations, Tannenbaum³ presents a collection of programmatic studies in which the control graph is used to identify relationship between the amount and distribution of control and measures of organizational effectiveness defined largely in terms of members' satisfaction and some production indicators. Specifically, it is demonstrated that organizational effectiveness is directly related to the amount of total control (the mean height of the control graph)²⁴ It is in this work that Tannenbaum uses the control graph approach to attack the controversy concerning the quantity of power in a social system.

Our use of the control graph has led us to question the "fixed-pie" assumption underlying this controversy and has raised the question of why increased control exercised by both leaders and members does not create conditions for more effective organizational performance.²⁵

He demonstrates how, by using the control curves, an increase in the total amount of control can be measured. Curve X, in Figure 7, illustrates this concept. He says "by comparison with curve A, curve X is both more 'democratic,' in the sense of greater control by lower echelons, and more 'oligarchic,' in the sense of greater control by upper echelons - which in traditional terms, is a contradiction."²⁶ For a more definitive explanation of how this, in his opinion, can occur and for a discussion of some of the

approaches he sees as being possible to enhancing the total amount of control the reader is directed to pages 14 through 23 of his previously referenced book.³

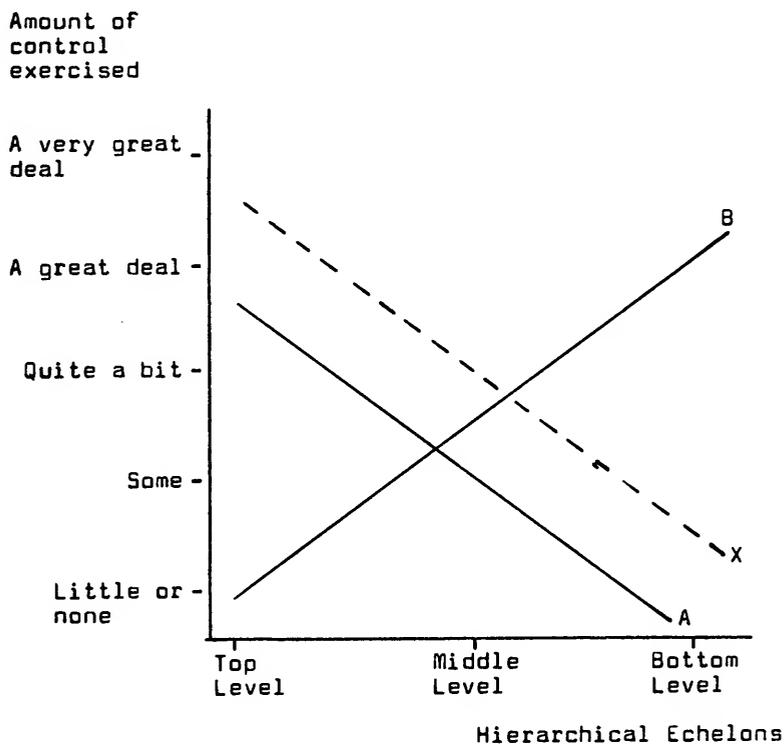


Figure 7. Increase in Total Amount of Control

Perceived and Desired Control

Control curves have been drawn on the basis of responses to questions asked of members regarding the amount of control which various echelons or levels exercise. In

addition to providing a description of the situation as members see it, the graph has also been used to characterize the pattern of control which members desire. These concepts have often been referred to in the literature as "actual" and "ideal" control respectively. Comparisons have then been made of perceived and desired control based on the judgments of members of the organizations. Smith and Tannenbaum used this approach to accomplish a comparative analysis of several aspects of organizational control for a number of organizations.²⁷ Tannenbaum used this approach in a study of control and effectiveness in the "The League of Woman Voters."²⁸

French, Israel and As, have presented experimental data to show that discrepancies between the influence which members perceive to exist in an organization and that which they feel should exist are related to aspects of worker - management relations and to member satisfaction.²⁹

Finally, March and Simon have argued that disagreements between members and leaders regarding organizational facts and ideals, including facts and ideals about control, are among the conditions contributing to intergroup conflict within organizations, and that one might also expect these discrepancies to have some bearing on member satisfaction and productivity.³⁰

From these and other studies^{23,31} it can be seen that the control graph approach can be used to study relationships between control, organizational effectiveness, and member attitudes.

Control and Uniformity

The relationship between control and member uniformity has been traditionally subsumed under the concept of social norm. This concept can be defined simply as the continuous uniformity in expectations, attitudes, or behavior within a group regarding an activity developed and maintained by processes of control. Central to this definition of norms is the premise that they are a function of control. The control graph approach has been used to study the relationships of varying patterns of organizational control to member uniformity. For example Smith and Ari used it in the study of a nationwide service organization which had operations in several metropolitan areas of the United States.³² The findings of their research suggest that the pattern of control which tends to be associated with member consensus is that predicted by a high amount of control exercised by members at all echelons, leaders as well as rank-and-file members. High total control tends to be conducive to consensus both within the work group and between the rank-and-file and the supervisory levels. The findings further suggest that high total control was efficacious in promoting member consensus in the organizations under study because it was associated with significant influence by the rank-and-file members upon the operation of the organization. This says the authors, "is substantiated, in part, by the significant relationship between total control and the morale of the members ($r=.72$) and by the significant relationships between

the influence of the rank and file upon the operation of the station and the measures of work group and hierarchical consensus.³³ The high-producing station was found to be characterized by high total control, high member consensus and high member morale. The multiple correlation of total control and general station consensus with member morale was .72.

Recent research in several organizations has indicated that the manner in which control is structured is related to organizational effectiveness. These studies suggest the importance in some organizations of high rank-and-file control relative to leadership control and, more generally, the importance of a high amount of control exercised by members at all echelons in the organization.³⁴ The interpretations offered of these findings suggest that these patterns of control may be conducive to high organizational effectiveness, in part, through the uniformity with respect to organizational standards and policies which they promote. These interpretations seem to suggest one particularly significant process explaining the efficacy of these patterns of control in promoting high organizational performance, namely, the coordination and regulation of member behavior with respect to organizational norms. The resulting uniformity derives its significance from the fact that it is basic to the concerted member effort underlying effective organizational performance. The importance for organizational functioning of such variables as member consensus and reciprocal role

expectations has been suggested in a number of studies. Basil Georgopoulos, e.g., found aspects of the "normative system of the organization" such as "normative complementarity" and "group consensus" to be significantly related to organizational productivity.³⁵

One thing is evident from these references and that is that the control graph approach to the study of control can be used to consider the relationships of patterns of control to member uniformity and then to evaluate their implications for organizational effectiveness.

Organizational Type Comparisons

The need for comparative approaches, to the study of organizational control, is great but comparative studies are beset with serious conceptual as well as methodological problems. The control graph method has been offered as one approach to the comparative study of organizations. It has been claimed to have the advantages of being a general, quantitative technique with conceptual as well as operational potentialities.³⁶

Blau,³⁷ Blau and Scott,³⁸ Etzioni,³⁹ Gouldner,⁴⁰ and Likert⁴¹ are among the writers who have recently attempted conceptual categorizations of organizations based partly on differences in control which suggest the fruitfulness of comparative analytic approaches in understanding this phenomenon.

Smith and Tannenbaum recently utilized the control graph

method to accomplish a comparative analysis of organizational control in approximately 200 geographically separate organizational units from a number of larger organizations.⁴²

They presented data which they suggested was illustrative of the potential of the method and suggestive of a number of hypotheses about organizational control which, in their opinion, were amenable to empirical tests.

Therefore it appears as if there is sufficient evidence in the literature to support the claim by Tannenbaum and Kahn, in their 1957 article, that the control graph approach could be effectively utilized in comparative analyses of organizations.

Bases of Control or Power

Control in any organization may be exerted through several different channels. As was pointed out in Chapter II, French and Raven have developed a fivefold typology which suggests a number of different categories of bases of control. They propose that there are five bases of power: reward power; coercive power; legitimate power; referent power; and expert power. To this list Katz and Kahn have added incremental influence.

Student has applied the French and Raven power typology and the incremental concept to a study of supervisory influence and work group performance in a manufacturing firm.⁴³ More specifically, his research is an analysis of some performance correlates of the first-line supervisors, incremental-influence.

Using the French and Raven typology, Bachman, Smith and Slesinger investigated salesmen satisfaction and performance.⁴⁴ Their research was concerned with the relationship between organizational effectiveness and social control in organizations. In particular it was designed to explore two aspects of control: the distribution of control among organizational levels (control graph), and the bases for this control.

Using the same approach that Tannenbaum and Smith had used previously,⁴⁵ Ivancevich analyzed the relationship between control, bases of control, and three categories of satisfaction.⁴⁶ The findings of his research tend to support portions of previous control-satisfaction investigations.

Bachman, Bowers and Marcus using the French and Raven typology recently accomplished a comparative study, based on five different organizational settings, of the bases of supervisory power.⁴⁷ Their research was concerned with two interrelated problems: Why do people comply with the requests of organizational "superiors?" And how are these various reasons related to the total amount of control and to organizational effectiveness? Stated another way it was concerned with the bases of supervisory power and its effects.

In summary then it can be stated that the control curves emphasize the importance of control in organizations, and provide a means of taking a more holistic view of it. Studies of leadership, influence, power and the bases of power can be made with such a framework, as evident by the above stated projects.

Summary

The control graph is an analytical tool for the analysis of control in organizations. This graph shows a line which represents the amount of control (vertical axis) exercised by each of the hierarchical levels within an organization (horizontal axis) as perceived by a sample taken from all levels. Specific points are located by plotting mean responses to the question, "How much influence does (top management, middle management, lower management, rank-and-file members) exert...?"

This tool has been used to test relationships between various aspects of control and other organizational factors such as satisfaction, effectiveness, conflict and productivity. In view of this comprehensiveness inherent in the "control graph" formulation, it is clear that application of this approach should be made to the study of control in hospitals, a project not previously attempted but which serves as the focal point of this investigation.

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CHAPTER IV

RESEARCH DESIGN, METHOD, AND PROCEDURE

Overview

The main purpose of this chapter is to describe the significant aspects of the research design, method, and procedure.

Following this brief overview will be a discussion of the procedure and rationale used to select the particular hospitals for study. Then the how, and why, certain groups of hospital personnel were specified to represent each participating institution, as well as how individual group members were selected to take part in the study will be reviewed. In the next section there will be a description of the main research instruments used to collect data, the kinds of data collected, and the response rates attained. Next there will be a discussion of the areas of investigation, the hypotheses tested and the methods of measurement. The final section of this chapter will be devoted to a discussion of the main methodological limitations of the study. The division of this chapter into these sections is not intended to insinuate that the different aspects

of the research design can be neatly separated and treated independently of one another. There is a high degree of interrelatedness among the separately treated features of the design just as has been suggested exists in the "scientific method of problem solving."

Selection of Hospitals

Of the approximately 7,125 hospitals in the United States listed in the 1973 Guide Issue of Hospitals,¹ about 6,300 were short-term institutions of different types. And of the latter, at least 5,900 were nonfederal general hospitals, i.e., institutions engaged in the care and treatment of acute diseases and illnesses. Of all these nonfederal, short-term general hospitals in the nation, nearly 2,575 were either state and local governmental institutions or proprietary hospitals. This left about 3,325 hospitals that were nongovernmental, not-for-profit institutions. These hospitals represented close to 47 percent of all hospitals in the nation and they had a combined total of almost 630,000 beds and were accomplishing approximately 22,500,000 admissions annually. This is the type of hospital with which the ordinary person is most likely to be familiar or have had contact as a patient or visitor.

These hospitals were all alike in some ways. For example they: (1) were all of the same general type; (2) shared a number of needs and experienced certain important organizational problems in common; and (3) were all concerned with

the same general objective - that of providing adequate patient care effectively. Because of the extensive coverage in academic, professional, and trade journals of the subject of hospital objectives it becomes necessary at this point to digress from the main subject under discussion and cover in general terms some of the material published in these journals concerning hospital objectives.

A review of the literature reveals that hospital objectives have been discussed from a number of different perspectives. From the "community needs" standpoint one finds such quotes as the following.

The hospital is the professional monitor of the quality and quantity of care rendered not only on its own premises but throughout its community.²

The objective of the hospital is to provide the best in patient care at a cost the patient and the community can stand.³

Generally, individual hospitals wish to allocate the limited monies they have available in a manner which will result in the maximum obtainable benefits (for the community) from any given level of expenditures - benefits referring to both (1) those which can be readily measured in dollar terms, and (2) those which result in a higher level of health care for the community (in terms of lower mortality, lower morbidity, improved health for target populations, etc.) These at least are the publicly stated goals.⁴

Health care institutions that have as an objective the provision of adequate community health facilities must choose from among alternative uses of resources in their efforts to meet this goal.⁵

The goals of the hospital should be to meet the needs of the community served by the hospital, whatever those may be. The hospital must have as its goal the satisfaction of the needs of the community that it serves even though these may not accurately represent its demands.⁶

The notion that the voluntary hospital was established by the community to serve its health care needs is undeniably a true statement.⁷

The hospital must provide a value to the community which is superior to that obtainable in any other manner.⁸

The basic objective of the management of the Society can be stated as follows: utilizing appropriate, effective and efficient management techniques to assist each hospital (Society) and its community in the creation of a comprehensive medical care center which will fulfill community needs in the most effective way in a voluntary setting.⁹

In addition to the community needs standpoint there is a volume of material which addresses hospital objectives in general terms. The following statements are typical of what is found in some of the literature.

The medical care industry has as its prime goal the development and maintenance of optimum health levels.¹⁰

The primary or basic objective of any health care institution is that of providing quality services at optimum cost.¹¹

Most of the hospital administrators and assistant administrators interviewed indicated that hospital organizations have two basic objectives: quality patient care and financial soundness (efficiency).¹²

Their objective is delivering to each patient the services required to treat effectively his illness or injury and then discharging him.¹³

The Samaritan Health Service went carefully through a project study period and came up with five basic objectives: (1) the containment of costs accomplished through numerous efficiencies brought about by centralized programs, (2) the accessibility of health care made available to people regardless of income or geographic remoteness, (3) the systematic phasing out of duplication and fragmentation of both services and facilities, (4) the escalation and broadening of the quality of patient care, and (5) the innovative break with tradition - keeping people out of hospitals and treating them while still on their feet rather than flat on their backs after they have become catastrophic statistics.¹⁴

There is also evidence that in the minds of some of the writers there is a vagueness about the objectives of hospitals.

Objectives for the hospital are generally vague and express broad general intentions to render public service.¹⁵

The absence of definable and generally acceptable hospital organization objectives makes a normative approach to hospital performance infeasible.¹⁶

The absence of a clear-cut primary objective for non-governmental, not-for-profit hospitals to fill the role played by profit or wealth maximization in most economic studies, has long been a source of discouragement for economists interested in studying the health sector.¹⁷

Some of the writers even venture to speak of the future objectives of hospitals.

The health care market is made up of many kinds of illness for which various kinds of institutions and various kinds of services are needed. The social thrust of the future will be for total and comprehensive health care services under single management. In the future, hospital authorities will no longer operate individual, autonomous hospitals devoted to one aspect of the total need. They will operate hospital systems in which the organizational structure will be different, and the skills needed will be different, but all will be related to the total needs of the community.¹⁸

The hospital will become both the primary operational center for community health services and the primary center for comprehensive health planning at the community level.¹⁹

Finally there is in the literature a discussion of hospital objectives from an economic models perspective. One of the leading articles in this area is the one written by Richard W. Foster.²⁰ In this article the author discusses the six most popular economic models of hospital behavior. He begins by stating that "the practicing administrator will find none of these models realistic. He is likely to feel that the forces identified by the models are real, but that

many other forces have been neglected."²¹

Considering all of the literature which discusses hospital objectives from these five perspectives: (1) community needs, (2) general terms, (3) vagueness, (4) future, and (5) economic models, the general objective for the nongovernmental, not-for-profit hospitals previously stated by the author appears to be quite in character.

Continuing with the discussion of the nongovernmental not-for-profit hospitals which was discontinued on page 69 it is pointed out that even though these hospitals were similar in a number of ways, they still, constituted a very heterogeneous group of organizations. For one thing, some of the hospitals were extremely small having 25 or so beds, while a few others were extremely large, having more than 750 beds each. The majority, of course, fell between these two extremes, but even a range of 25 to 750 beds is very wide. A 50-bed hospital, for example, is likely to be very different from a 450-bed hospital, and the same may be said for a 100-bed hospital in comparison to a 400-bed hospital, although the differences may be smaller in the latter case.

The differences that may be associated with the size of the hospitals virtually defy enumeration. There are differences in the size and kind of staff and personnel required by a small as compared to a large institution. There are differences in the environment within which larger and smaller institutions operate; for example, a

small rural community would be unlikely to be supporting a 500-bed hospital. In general, with increased organizational size, there is more departmentalization, more specialization, more heterogeneity, and more complexity in organization and operations.²²

The hospitals in question differed not only in size and size-related characteristics, but also on a number of other dimensions. Included among these were: (1) professional accreditation by the Joint Commission on Accreditation of Hospitals - while most of the hospitals were accredited, some were not; and (2) regional-geographic location, and the type of community within which the hospitals operated - some hospitals were located in New England, some in the south, and others in the east, west or midwest, and similarly, some served huge metropolitan areas, while others served small cities or towns. Of course, there were other dimensions on which these hospitals varied. But for the present purpose the differences cited here are sufficient to illustrate the point that a great many significant differences - a good deal of heterogeneity or variance - characterizes this population of general hospitals.²³

From the standpoint of research design, the crucial problem that differences of this kind pose may be stated as follows:

Unless the researcher takes cognizance of the heterogeneity of the population with which he is dealing, either by controlling many of the differences involved through his initial study design or by making

sure to study the effects these differences may have upon the phenomena he proposes to investigate, he will end up with many spurious results or "impure" findings, which he will be unable to explain. And ideally, of course, the researcher wants to be able to understand and explain the phenomena he is studying....24

The problem of how to guard against spurious results due to great heterogeneity in the population of hospitals may be handled in either of two main ways. First, the researcher may restrict his initial population to a sub-population, thus reducing much of the unwanted heterogeneity. He may impose specific restrictions and qualifications that the hospitals in the study should meet (based on differences in the population he considers important enough to avoid, control for, or keep constant without actually measuring them), and instead of dealing with all of the population, deal with a much smaller sub-class of hospitals which meet certain criteria. Alternately, rather than restrict the population, he may have a large enough number of hospitals participate in the study, so as to capture much of the heterogeneity prevailing in the whole population.... He may increase the size of his sample to a number which permits him to represent reasonably well the entire population of hospitals by his sample....25

Restricting the population has the advantage of obtaining relatively pure rather than spurious results with relatively few hospitals participating in the study, and the limitation of not being able to generalize the results as much as might be desired. Increasing the size of the sample has the advantage of permitting greater generalization of the findings, and the disadvantage of requiring greater costs, time, efforts, and energies. Assuming limited funds, the researcher is almost inevitably forced toward restricting the population and away from a relatively large sample.26

In this case-study only two hospitals were used, this, of course, has the disadvantage of not being able to "generalize" the results beyond the hospitals involved, which is one of the major limiting factors of the study.

Needless to say, the difficulties posed by the heterogeneity of the population, and by considerations of economy and feasibility, were not the only factors used to determine

the selection of the particular hospitals which were asked to participate in this study. Included among the other determining factors were the nature of the study itself, i.e., the particular aims of the study and the questions that were to be answered, also the very character of the phenomena in which the researcher was interested.

The very nature of the study was an important determinant in the selection of the hospitals. Georgopoulos and Mann state that:

If the research is of an exploratory kind, aiming to yield some unavailable information, stimulate insights, or aid the formulation of hypotheses in anticipation of more systematic studies then it is not crucial for the researcher to study a large or a "representative sample" of organizations. The same also applies if the research is of the "case-study" type, not aiming at generalization of results or rigorous hypothesis testing, or if the research happens to be too circumscribed in its objectives as is the case with many small experimental studies. If, on the other hand, the research is of the explanatory kind aiming to test rigorously hypotheses of wide generality, or to yield results by studying a sample of the total population and then generalize these results to the whole population then the organizations actually studied must constitute a probability sample that is "representative" of the whole population.²⁷

This study belongs to the "case-study" category of research and therefore according to the above reference, it was not crucial for the researcher to study a large or a representative sample of hospitals.

Georgopoulos and Mann further state that:

If the research is in part exploratory and descriptive and in part explanatory and analytical, designed both to develop hypotheses for further study and to test hypotheses based on already available

research and theory, then a design that restricts the population to which the results may potentially apply, but includes an adequate number of organizations in the research to permit the use of sound analytical procedures, may yield the best possible solution. Such a design provides a reasonably good alternative in place of the ideal "representative sample" design, or in place of a large sample design, which is not feasible because of considerations of costs and economy and/or because of lack of sufficient prior knowledge about the phenomena with which the research is concerned.²⁸

This case-study was designed to be in part both exploratory and explanatory. In terms of this design, generalization of the findings beyond the hospitals studied can not be attempted on statistical grounds, but logical inferences can be made based on theoretical principles.

Up to this point reference has only been made to how the problems of spuriousness and economy, and the nature of the research affected the decision concerning the kind and number of hospitals that were to be included in the study. This decision is further clarified by a listing of the specific criteria which were employed to select the hospitals. They were as follows:

1. Type of service rendered: short-stay general hospitals.
2. Size: approximately 400 beds.
3. Ownership, and institutional control and affiliation: nonprofit, nongovernmental institutions (Categories 21 and 23 in the Guide Issue). One from category 21 (church affiliated and operated) and one from category 23 (other).
4. Administration: administrated by a chief executive

officer (administrator, executive director, director, executive vice president, etc.), under a policy-making body at the local level known as the governing body (board of directors, board of trustees, council, etc.)

5. Status: fully accredited by the Joint Commission on Accreditation of Hospitals.

6. Region and geographic location: located in the same geographic region.

7. Workload: of comparable size and complexity.

8. Staffs: of comparable size and kind.

9. Missions or purposes: similar in nature.

10. Facilities: comparable facilities available in each institution.

A detailed listing of the specific criteria as they apply to the final two hospitals which were chosen to participate in the study, is found in Appendix A. The purpose of these specific criteria was to have the hospitals as homogeneous as possible, except for item number three (3) where one was to be affiliated with a church organization and the other was to be nonchurch affiliated. The reason behind this was to determine what, if any, significant differences existed in the patterns of control by hierarchical level between the two hospitals.

Selection of the Individual Groups and Respondents

This study was designed to explore several facets of

influence among various hierarchical levels in two hospitals. The hierarchical levels considered were those of the formal hospital organization as depicted in Dr. Charles U. Letourneau's book The Hospital Administrator.²⁹

They are as follows:

1. Governing Body (board of directors, board of trustees, council, etc.).
2. Chief Executive Officer (hospital administrator, executive director, director, etc.).
3. Directors of Various Services (director of professional services, director of personnel, director of materials management, director of finance, etc.).
4. Department Heads (department of medicine, department of surgery, department of nursing, department of radiology, laboratory, department of physical medicine, hospital pharmacy, dietary department, etc.).
5. Unit Managers and other first line supervisory personnel (A unit manager is a coordinator of activities within the department, a controller of materials and costs and supervisor of administrative personnel. The unit manager serves in a staff capacity to the department head. He may be referred to by such titles as service manager, administrative coordinator, administrative assistant, etc.).
6. Nonsupervisory employees.

From this enumeration of the hierarchical levels it should be apparent that this study is primarily concerned with the overall institutional authority line which originates with the governing body, however, recognition is also

given to the professional authority line and the mixed lay-professional authority line. It is worthy to note at this point that in a recent announcement of a unique four-day seminar on "Governing the Hospital" the American College of Hospital Administrators made the following statement:

The program, limited to key representatives from each of three vital hospital management fractions - administration, the governing board, and the medical staff - will examine external and internal pressures which are forcing a change in the hospital's governance and will prove that separateness of these three administrative areas no longer suits the realities of present-day pressures on the hospital.³⁰

The sample size taken from each hospital consists of approximately 50 managerial personnel, 50 supervisory personnel, 50 nonsupervisory personnel and 50 members of the medical staff. (The exact numbers in each group are found in Table 2, on page 96.) The participants in each group were randomly selected from the total number of personnel in each category, excluding, where applicable, part-time employees and employees with less than one year's employment in the hospital. Excluded also were those members of the medical staff who had not been on the active medical staff for at least one year. The random sample table in Mendenhall, Ott and Scheaffer's book³¹ was utilized to select the participants. Total sample size is 378 participants.

Research Instruments and Data Collection

The majority of the data required from the respondents

specified in the above section was obtained by the use of influence questionnaires and supplemented by personal interviews where warranted. These data were then augmented by certain on the spot observations. It should be obvious at this point that the primary instrument utilized in the data collection was the questionnaire. The questionnaire was developed by taking the research questions from a number of prior studies which had utilized the same approach as that used in this study. In particular the work described by Arnold S. Tannenbaum in his book Control in Organizations,³² was used extensively. In an attempt to be consistent, it was decided that since the approach was to be the same as that previously used, the research questions should also be the same, only adapted for use in the hospitals. The questions concerned with "perceived" and "desired" control were taken from such studies as those conducted by Tannenbaum,^{33,34} Tannenbaum and Kahn,³⁵ Smith and Tannenbaum,³⁶ Smith and Ari,³⁷ and McMahon and Perritt.³⁸ The research conducted by Tannenbaum and Georgopoulos³⁹ served as the basis for the questions which pertain to "active" and "passive" control. While the works of Ivancevich,⁴⁰ Bachman, Smith and Slesinger,⁴¹ and Bachman, Bowers and Marcus⁴² served as the source documents for the questions on "basis of control" and "satisfaction with the way supervisors were doing their jobs."

With these questions available from previous research, it became a matter of adapting them to the present project

and then to try the instrument out under as similar conditions as possible to those that would prevail during the actual research project. According to Fox:

At this point it is possible to estimate the appropriateness of the instrument and its objectivity, and in some instances the sensitivity as well. This is also the point at which the researcher obtains a first estimate of the reliability, typically through the odd-even procedure. Unless success has been remarkable, this first trial is followed by revisions and refinement, and the revised instrument is tried out again. This is the point at which the researcher hopefully obtains his final reliability and validity data. Any of the reliability techniques can be used at this point, as can construct, congruent, or concurrent validity.⁴³

Two pilot studies were conducted to: (1) test out the instrument to see if it was in need of revision; (2) provide trial runs of the data-collection approach; and (3) see if the subjects of the research could handle the data-collection instruments. In each pilot study the questionnaires (to be described later in this chapter) were administered to groups of respondents similar to those described in the preceding section of this chapter. These participants were from four hospitals (two for each study) which had agreed to cooperate with the researcher in his project and which were similar in characteristics to the two hospitals which were ultimately chosen to participate in the final study. At the time of survey each of the hospitals met essentially all of the 10 specific criteria listed on pages 76 and 77. In addition all of the hospitals were: (1) located in the same state, within the same type of environment (urban); (2) staffed by a medical staff of

approximately the same size and specialty composition; and (3) concerned primarily with patient care as opposed to research and/or teaching functions. Two hundred questionnaires were distributed in each of the hospitals. A total of 751 were completely filled out and returned which represents an overall participation rate of 93.9 percent. Of the 751 responses received, 185 were from managerial personnel, 190 from supervisory personnel, 196 from non-supervisory personnel and 180 were from medical staff members.

The results of the initial trial run were reviewed with a professional practitioner and the instrument was judged to be appropriate in that all of the respondent groups were able to meet the demands imposed by the instrument. The appropriateness of the instrument in relation to the medical staff is deserving of additional comment at this point since there are possibly those who might question the applicability of the questionnaire to a group of individuals who are often not salaried by the hospital. To those individuals it is pointed out that all hospitals have "active physicans" who deliver the proponderance of medical service within the hospital, and perform all significant organizational and administrative duties pertaining to the medical division. Members of the active medical staff category, according to the Standards of the Joint Commission on Accreditation of Hospitals, should be eligible for appointment as a clinical chief or chief of staff. Only active

medical staff members were asked to participate in the study and there are essentially three major empirical assessments of medical staff organization which attest to the ability of the active medical staff to respond to such questions and issues as those posed in the instrument used in this research. These are Georgopoulos and Mann's study of 41 community general hospitals published in 1962.⁴⁴ Roemer and Friedman's study of the relationship between medical staff organization and hospital performance published in 1971,⁴⁵ and a monograph by Duncan Neuhauser dealing with the relationship between administrative activities and hospital performance also published in 1971.⁴⁶

In addition to being judged appropriate the objectivity of the instrument appeared to be highly acceptable in that all of the questions had been responded to in a manner which indicated that the respondents had understood the directions which were provided. There was also sufficient reasons to believe that at least at a gross level the instrument would measure what it had been designed to measure. This according to Fox is a form of validity commonly referred to in the literature as "construct validity."⁴⁷ On the subject of validity Tannenbaum has stated, in reference to some of the work that has previously been accomplished using this approach and essentially the same research questions, that:

Direct tests of validity for measures of control are difficult, because precise criteria have not been established. Our first application of the method in four union locals was encouraging because the data corresponded in general to our own observations,

although this impressionistic analysis was post hoc. Subsequent applications of the measures in a variety of organizations also revealed differences that seemed realistic to us. For example, measures in union locals, voluntary associations, business and industrial organizations, including some in Yugoslavia, yielded differences, as well as certain general constancies that seemed reasonable, although again, this evidence is only a rough indication of validity.

Perhaps the strongest support for the measure comes from what we believe are meaningful relationships between patterns of control as measured and other aspects of organizational structure and functioning independently measured. Ultimately our case for the validity of the measures hinges on the extent to which the meaning that we claim for them fits meaningfully the predictions that we have made and the substantiation for these predictions that we find. Some of the articles in this text report research concerning such predictions. Although the correlations in these studies are not usually high, they yield a reasonably consistent picture and one that we take to represent a form of construct validity.⁴⁸

Finally, it was possible to estimate the reliability of the instrument through the "odd-even" procedure followed by the Spearman-Brown Prophecy Formula as described by Fox on pages 357 and 358 of his book.⁴⁹ Commenting on the reliability of the approach in general Tannenbaum, in a letter to the researcher, stated:

The reliability of the method was tested pragmatically by correlating the measure of control with independently measured criteria. For example in Chapter 4 (of his book) we report a correlation of .29 between total amount of control and measure of organizational effectiveness. Technically, the reliability of the measure is likely to be something greater than .29 since a correlation between one measure and another will not be greater than the reliability of the least reliable of the two measures. For example, if the reliability of one measure were zero, this would be equivalent to having a set of entirely random scores and such a set could not correlate more than zero with any other set - except by chance. But we tested for statistical significance and feel reasonably confident on the basis of such tests that our results are not attributable to chance. Hence we have some pragmatic indication of at least some modest degree of reliability.⁵⁰

In summary then it can be stated that the results of the first trial run along with the results of prior research indicated that at least the research instrument was reasonably appropriate, objective, valid and reliable. Additionally the first trial run pointed out two small problem areas. First, it was noted that there was some difficulty encountered by some of the respondents in reference to what a unit manager was or was not. Therefore it was decided that a definition of what a unit manager was would be provided in the instructions which were to be given to the respondents. This definition was included in the additional instructions and was used in the second trial run and in the final study (Page 189 Appendix B). Second, it was determined that the scope of the project could and should be reduced by some small degree.

The first trial run was followed by some revisions and refinements and then the revised instrument was tried out again under as similar conditions as possible to those that would prevail during the actual study. Two different hospitals were used in the second test. The results of the second test reemphasized the results of the first test in reference to the characteristics of the research instrument. Once again the reliability of the instrument was estimated by using the odd-even procedure and the Spearman-Brown Prophecy Formula. The correlated scores of the two halves of the test resulted in a correlation of .84. Applying the prophecy formula resulted in a quotient of .91 which was considered sufficiently reliable for the nature of the

Because of differences in the background characteristics of the different groups of respondents involved, because of differences in the positions of the different respondents, because of differences in the familiarity of respondents with the different areas of concern, because some respondents could not possibly answer all of the questions, and because of convenience, three different questionnaire forms were designed for the study. They were administered, in the participating hospital as follows:

Questionnaire Form C: to the medical staffs.

Questionnaire Form B: to the executive committee of the board of governors.

Questionnaire Form A: to all other groups.

In each hospital, the members of each particular respondent group were required to complete identical research instruments to ensure comparability of the data across hospitals. The different questionnaire forms were of the paper-and-pencil type, consisting mainly of checklist questions with fixed response alternatives following each question. The main purpose of using questions of this type was for standardization; every individual belonging to a particular group of respondents was exposed to the same stimulus. Standardization should be an important consideration in any quantitative research.

The research questions on each of the three forms were the same, except as follows. Form C, which was administered

to the medical staffs, did not contain the questions which pertain to "basis of supervisory control" or "satisfaction with the way supervisors were doing their jobs," since they were not applicable to the medical staffs. The same is true for Form B, which was administered to the governing bodies. Additionally form B had two open-end type questions which were designed to allow the respondents the opportunity to comment on the similarities and differences between hospitals and other large organizations. Questionnaire Form A, which was the most extensively used of the three forms is included as a part of Appendix B. It is pointed out that this is a typed sample which has been prepared to meet the specifications established for dissertations, but that the ones used in the data collection were printed questionnaires of a much more attractive design and shape.

Data Collection

When does a research project begin? This is a difficult question to answer because it is extremely difficult to pinpoint the day or month when an idea or concept actually begins to formalize. Needless to say much in the way of literature review precedes the first outline of a research project. This project began to materialize in December 1971 after a rather extensive review of Dr. Arnold S. Tannenbaum's book Control in Organizations. The months of January, February and March of 1972 were spent in what Fox has referred to as part of one of the "Research Process,"⁵¹

that of designing the research plan. The first pilot study was conducted in April 1972 with the months of May and June spent in analyzing the data collected from this first trial run. Revisions and refinements were made and then the second trial run was conducted during the month of July 1972. Following this second test run all of the data collected were analyzed extensively and the various approaches which were to be used were finalized. With the pilot studies concluded, Fox states, "we have completed the planning and decision-making stages of the research. We are now faced with the implementation stages..."⁵²

Two preliminary activities were performed before the actual data collection began and before contact was made with the participating hospitals. First, the State Hospital Association was contacted. The purpose of this contact was not to seek formal approval from the association but to fully inform the association about the research in an attempt to prevent any possible misunderstandings. The second preliminary activity involved all the ramifications connected with the selection of the two hospitals to participate in the final study. Once these selections were made then the stage was set for the actual beginning of the research project.

Initial contact with the hospitals was made on a personal basis rather than by impersonal written communication. A visit was made to each hospital and an appointment was made to see the administrator. In this initial

meeting with the administrator the nature of the project was explained to him as well as the kind of assistance and cooperation which would be needed. Each hospital contacted expressed a willingness to cooperate in the study. During this first visit it was also determined as to where the central point of operation would be in each hospital and who would be the person to contact in case questions arose during the absence of the researcher. Once these preliminary matters were settled then the more important details were developed.

During this initial visit information was obtained as to the identity of the persons filling the various positions in the hierarchical structure of the organization. Also a personnel listing was obtained so that a random selection of personnel in each category to be studied could be made. The selection of respondents was made as has been previously described elsewhere in this chapter. Finally a letter from the hospital administrator to all concerned was obtained so that reproduction could be accomplished prior to the return visit to the hospital. A copy of one of these letters is included in Appendix B. Letters of this nature, printed on appropriate letterhead stationary from each of the respective hospitals were used as cover letters to the questionnaires that were used to gather the majority of the data for the project.

Prior to the first return visit to each hospital, selection of the respondents was made. Once the selections

were made then individual packets were assembled which consisted of the questionnaire, the additional instructions for filling out the questionnaire, the cover letter from the hospital administrator, and a preaddressed envelope which would return the questionnaire to a predetermined office in the hospital. These items were then placed inside an envelope which was addressed to the respondent at his work station in the hospital, or to his business address if he worked outside the hospital.

Between the time of the initial visit and the first return visit to each hospital, the administrators were requested to publicize the fact that their hospital had been selected to participate in the study and to request those contacted to cooperate if at all possible.

Upon the first return visit to each hospital distribution of the questionnaires, to be completed by respondents within the hospital, was accomplished through the in-house mail distribution system. Prior to distribution a list was prepared of the respondents so that follow-up could be accomplished on those who had not returned their questionnaires within the specified time period. This list was merely used to indicate receipt of the questionnaires and was available to no one except the researcher. Once it was determined that all the questionnaires had been returned that could reasonably be expected to be returned the list was destroyed assuring the confidentiality which had been promised the respondents.

Upon distribution, the packets were sealed and the individuals were requested to return their questionnaires within a specified time to a predesignated location, sealed in the envelope which was provided. Additionally each respondent was asked to complete the questionnaire at his convenience but on his own time and without any discussion with anyone else.

When the questionnaires were returned they were placed in a box and kept for the researcher until his return. Each questionnaire was in a sealed envelope and with no identification marks except those known only to the researcher and which were destroyed once the questionnaires were received. Destruction of these marks was accomplished before the questionnaires themselves were opened, assuring that no one knew the specific answer to any question provided by any respondent.

Follow-up visits to each hospital were necessary to collect the questionnaires and to follow-up on those which had not been returned. On each visit interviews were scheduled with those individuals who were to be interviewed and personal observations were made of specific activities to assure that they were functioning as had been indicated.

By utilizing the approach described above it was possible to be collecting data from both hospitals during the same time period. Initial distribution of the questionnaires in both hospitals was accomplished on April 23, 1973 with return visits being made on a weekly basis until the close out of the data collection phase on May 19, 1973. No questionnaires were accepted after the close out date. It is pointed

out however, that the completion of a project of this magnitude in the time period allotted would have been impossible without considerable preparatory work by both the researcher and the participating hospitals, and without the efforts and excellent cooperation of the many respondents.

Throughout the processes of distributing and collecting the questionnaires and interviewing the personnel, careful attention was devoted to preserving the anonymity of the respondents and the confidentiality of their answers as had been promised both verbally and in the instructions contained in the cover page of the questionnaire.

In general, the data-collection operation was carried out as successfully as one might possibly hope, without any serious problems with the individual respondents and without disrupting the normal functioning of the hospitals involved. The success of this part of the project can be contributed to the interest and cooperation of the many respondents and to the preparatory work and cooperation between the hospitals and the researcher.

Response Rates

Of the 400 individuals initially selected to participate in the study as respondents, 5 individuals had left their respective hospitals permanently by the time of data collection. Excluding these people, the actual number of possible respondents from the two participating hospitals was 395. Out of this total, 7 individuals were unreachable. By this it is meant that they were indefinitely absent

because of illness or leave or they were on extended vacation or travel and would not be back in time to participate in the project. Thus, the total number of available respondents from the two hospitals combined turned out to be 388. All of these individuals were given the opportunity to complete a questionnaire and of the 388 available respondents, 378 finally completed their questionnaires, making the overall net response rate attained by the study 97.5 percent. (The gross response rate was 95.7 percent. This is computed by dividing 378 by 395, i.e., the number of respondents who finally provided data by the total number of possible respondents regardless of their availability.)

Tables 1 and 2, summarize the attained response rates in each participating hospital. Table 1 shows the gross response rate and net response rate for all respondent groups combined, but separately for each hospital. Table 2 shows how these respondents are distributed among the different groups of personnel which were included in the research.

Areas of Investigation, Hypotheses Tested,
and Methods of Measurement

This project was concerned with characterizing and measuring several aspects of control in two hospitals, utilizing the control graph approach with its unique methods of measurement.

TABLE 1

Attained Gross and Net Response Rates for all Respondent Groups Combined, but Separately for Each Participating Hospital*

Participating Hospital	All Respondent Groups Combined			
	Gross Response Rate (percent)	N's Involved	Net Response Rate (percent)	N's Involved
A (Church Affiliated)	94.9	(187/197)	96.4	(187/194)
B (Nonchurch)	96.5	(191/198)	98.5	(191/194)
Both Hospitals Combined:	95.7	(378/395)	97.5	(378/388)

*This table follows the format of the one used by Georgopoulos and Mann on page 68 of their book, The Community General Hospital.

TABLE 2

Final Number of Respondents from Each Hierarchical Level and Each Participating Hospital*

Hierarchical Level	Participating Hospital Group		Total (Both Hospitals)
	A (church)	B (nonchurch)	
Governing Body	3	5	8
Administrator	1	1	2
Directors of Various Services	12	11	23
Department Heads	28	29	57
Unit Managers	10	11	21
Other Supervisory Employees	40	37	77
Nonsupervisory Employees	48	50	98
Medical Staff	45	47	92
Hospital Totals:	187	191	378

*This table follows the format of the one used by Georgopoulos and Mann on page 71 of their book, The Community General Hospital.

Prototypes

Perceived control

The first area of investigation was into the type of control structure which characterized the institutions participating in the study (perceived control). There are numerous possibilities described in the literature, among which can be found at least the following four general types, with many variations thereof:

(1) The democratic model. This is a curve which rises (i.e., control increases) as one goes down the hierarchy. Groups at lower levels in the hierarchy (such as supervisory and nonsupervisory employees) have more power than groups at higher levels (such as the board of directors or the hospital administrator).

(2) The autocratic or oligarchic model. This is a curve which falls (i.e., control decreases) as one goes down the hierarchy.

(3) The laissez-faire or anarchic model. This is a curve which remains low (i.e., control is low) for all hierarchical levels. No one exercises much control.

(4) The polyarchic model. This is a curve which remains high (i.e., control is high) for all hierarchical levels. All hierarchical groups have important influence in this type of organization.⁵³

The hypothesis tested in this area can be stated as follows:

Null Hypothesis. H_0 : The amount of control attributed to each hierarchical level is equal. Alternate Hypothesis. H_1 : The amount of control attributed to each hierarchical level is not equal.

Method of Measurement: Six hierarchical levels represent the possible loci of control within each of the hospitals. The amount of control exercised by each of these levels was ascertained through the use of the following question: "In general, how much say or influence do you feel each of the following groups has on determining policy and deciding on what goes on in your hospital?" The groups referred to, of course, were the six hierarchical levels previously described in this chapter. Every participant was asked this question and their answers were to be checked on a five-point scale from 1, "little or no influence," to 5, "a very great deal of influence."

The "perceived control" curves which are drawn in Chapter V are based on the mean responses to this question. Also an analysis of variance was used to analyze the data collected. This procedure was repeated for each of the hospitals and then the results were compared by using a disproportionate analysis of variance.

Desired control

Employing the same procedure as that described above these same respondents were asked a parallel question concerning control as they desired it to be. For example the

following question was used. "In general, how much say or influence do you think each of the following groups should have on determining policy and deciding on what goes on in your hospital?" Once again answers were to be checked on the same five-point scale as that used for the perceived control question.

The "desired control" curves which are drawn in Chapter V are based on the mean responses to this question. Once again this procedure was repeated for each of the hospitals and the results were analyzed as described under "perceived control."

Distribution of Control

The next area of investigation was concerned with the distribution of control in each of these institutions. In this area particular attention was devoted to active control vs. passive control.

The active control curve tells how much control is exercised by each level. The passive control curve describes the extent to which each level is subjected to control within the organization.

The hypotheses tested in this area can be stated in the following manner. Active control. Null Hypothesis. H_0 : The amount of active control attributed to each hierarchical level is equal. Alternate Hypothesis. H_1 : The amount of active control attributed to each hierarchical level is not equal.

Passive control. Null Hypothesis. H_0 : The amount of passive control attributed to each hierarchical level is not equal. Alternate Hypothesis. H_1 : The amount of passive control attributed to each hierarchical level is equal.

Measurement: The data for this analysis were obtained through a series of questions asked of the same groups of respondents as has previously been described. The questions, a series of six, were tabular in form and were presented in terms of "how much say or influence" each of the six hierarchical levels had with respect to what each level did in the hospital.

For example, one such question was, "In general, how much say or influence does the hospital administrator have on what the following groups do in this hospital?" The following groups referred to in the question were: the board of directors, the hospital administrator, the directors of various services, the department heads, the unit managers and other first line supervisors, and finally the nonsupervisory employees. In each case, the respondents were able to answer in terms of the previously described five-point scale ranging from "little or no influence" to a "very great deal of influence."

The amount of control which any given level exercises in the organization (active control) is inferred from the mean of responses which the respondents judge it to have over all levels. Similarly, the amount of control to which any given hierarchical level is subject (passive control)

is inferred from the mean of the responses which the respondents judge all levels to have over it. The same information (active and passive control) was derived for each of the six hierarchical levels. Once this was accomplished then the descriptive and statistical analyses were undertaken, and the results are reported in the next chapter.

Influence of the Medical Staff

Although not a part of the organizational hierarchical structure per se, due to the fact the doctors are often not employees of the hospital, the medical staff exerts a certain amount of control (influence) upon how the hospital functions - on how it is run and how it operates. Therefore any study of control in hospitals should take this into consideration. Questions similar to the ones previously used were designed to measure the amount of control (influence) which the respondents judged the medical staff to have on how the hospital functioned, as well as the amount of influence they perceived it should have. Additionally their perceptions as to the active and passive control or influence of the medical staff was measured. These perceptions were summarized by groups and then the results for the two hospitals were compared on a descriptive basis.

Bases of Control or Power and Satisfaction

The final area of investigation was concerned with two interrelated problems: Why do people comply with the requests

of organizational "supervisors"? And how are these reasons related to member satisfaction with the way immediate supervisors were doing their jobs? No specific hypotheses were stated for this area of investigation.

Control (influence, power) in any organization may be exerted through several different channels. French and Raven have developed a fivefold typology which suggests a number of different categories of bases of control⁵⁴ They are as follows:

1. Reward Power: This is based on a subordinate's perception that a superior has the ability to mediate rewards for him.
2. Coercive Power: This is based on a subordinate's perception that a superior has the ability to mediate punishments for him.
3. Legitimate Power: This is based on internalized values which dictate that there is a legitimate right to influence and an obligation to accept this influence.
4. Referent Power: This is based on the desire of a subordinate to identify with a superior.
5. Expert Power: This is based on a subordinate's perception that a leader has some special knowledge or expertise in a given area.⁵⁵

This typology was utilized to categorize the more important bases of supervisory control as perceived by members of the organizations. The following question was designed for this purpose:

"Listed below are five reasons generally given by people when they are asked why they do the things their superiors suggest or want them to do. Please read all five carefully. Then number them according to their importance to you as reasons for doing the things your immediate supervisor suggests or wants you to do. Give rank "1" to the most important factor, "2" to the next, etc. "I do the things my immediate supervisor suggests or wants me to do because:

- A. "I admire him for his personal qualities and want to act in a way that merits his respect and admiration;"
- B. "I respect his competence and good judgment about things with which he is more experienced than I;"
- C. "He can give special help and benefits to those who cooperate with him;"
- D. "He can apply pressure or penalize those who do not cooperate;"
- E. "He has a legitimate right, considering his position to expect that his suggestions will be carried out."

The responses were compiled for each hierarchical level and then the results compared to determine the perception of the members of the organization as to the bases of supervisory control.

Then following the lead of Bachman, Smith and Slesinger⁵⁶ the perceptions as to satisfaction with the way immediate supervisors were doing their jobs were measured. The question used in this area was the one used by the above

mentioned researchers, namely: "All things considered, how satisfied are you with the way your immediate supervisor is doing his/her job?"

The perceptions as to the bases of supervisory control and satisfaction with the way immediate supervisors were doing their jobs, were then correlated and the results from each institution were compared.

Methodological Limitations

The deliberate restriction of the population of hospitals studied is perhaps the most serious limitation of this research. It should be recalled that, early in the research, the decision was made to confine the study to a case-study to two particular hospitals. The primary purpose for doing this was to avoid a great many methodological and theoretical difficulties that would have been introduced as a result of the great variance which exists in the broader population of hospitals. Several other reasons were given for restricting the population of hospitals to be covered. These are described in the section dealing with the selection of the hospitals to participate in the study.

A second, and less serious, limitation stems from the control graph approach to the study of organizational control. This approach relies on the judgments of organization members for the measures of control and of course organization members differ in their judgments about control.

A final general limitation is closely related to the stage of present-day theory concerning organizations, and to the current state of social-psychological knowledge about the phenomena with which the study is concerned. The better the theoretical knowledge available, the more powerful, more sensitive, and more refined the measures and tools of analysis at the disposal of the scientist.⁵⁷ Therefore, the methodology used in this study is better in relation to some of the areas and topics investigated than others, depending upon the theoretical foundations of each area.

Besides several rather specific methodological difficulties that were encountered in different parts of the study, the above general limitations are the most serious limitations of the methodology used in this study. These limitations are pointed out in an effort to prevent possible misunderstanding or misuse of the findings on the part of some well-meaning but, conceivably, methodologically naive readers.

Summary

It has been the purpose of this chapter to provide a thorough understanding of the research design, and of the methods and procedures used in carrying out the design.

Two hospitals were selected to participate in the final study. Additionally four other hospitals were selected as test sites for a considerable amount of exploratory work,

which preceded the research proper. The two hospitals which participated in the main research, comprised the "sample" of the study. In selecting the hospitals an attempt was made, insofar as possible, to "control" through the research design a variety of important factors which could have had a direct bearing, or influence, upon the phenomena under investigation, but which, being of no special interest to the research, were not themselves measured in the study. Each of the participating hospitals was required to meet a list of specific criteria in order to be selected.

Paper-and-pencil questionnaires were the main research instruments used to collect the data necessary for the measurement of the dependent and independent variables that were relevant to the objectives of the research.

The questionnaires were administered in each hospital to various individuals, who were selected to represent their respective hospitals and to furnish the required data. These individuals were selected from six hierarchical levels within each organization. The participants in each group were randomly selected with every member of each group given an equal chance of being selected into the sample.

The principal methodological limitation of the study stems from a deliberate decision to restrict the population of hospitals covered to two particular hospitals. This decision was necessary due to the fact that too little was known, theoretically or empirically, about the objectives with which the research was concerned to argue in favor of

a broader coverage of hospitals. Therefore the design of this research is neither completely explanatory or completely exploratory in nature, but rather is a compromise design which is partly exploratory and partly explanatory.

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CHAPTER V

THE RESEARCH FINDINGS

Introduction

The results of the research outlined in Chapter IV are presented in this chapter. The collected data are analyzed in essentially the same manner as that utilized by Tannenbaum and the other researchers which have been referred to in the preceding chapters of this paper. This includes treating the data as if measurement has been achieved in the sense of an interval scale. According to Siegel data measured by an interval scale may be analyzed by parametric methods. Appropriate statistics for this type of data include means and standard deviations. Appropriate statistical tests include both nonparametric and parametric tests.¹ The control curves drawn in this chapter are based upon means and an analysis of variance and a disproportionate analysis of variance are used on the data. Additionally correlation coefficients are used to record the degree of association between "bases of control" and "satisfaction with the way supervisors do their jobs."

The majority of the data were obtained from questionnaires which were distributed at the two hospitals. Table 3

shows the sample sizes for the four response groups at each hospital as they are used in these analyses.

TABLE 3

Number of Participants in Each Response Group at Each Hospital

Response Group	Organization	
	A Church Affiliated Hospital	B Nonchurch Affil- iated Hospital
Managerial	44	46
Supervisory	50	48
Nonsupervisory	48	50
Medical Staff	45	47
Total	187	191

SOURCE: Respondents from the church and nonchurch affiliated hospitals.

Although three different questionnaire forms were used, the research questions were the same on each form, except as noted in Chapter IV. The research question titles are listed in Table 4, and the data collected by the use of these questions are found in tabular form in Appendix C.

For those who believe that data gathered by questions of this nature can only be measured on a nominal or ordinal scale and consequentially should be analyzed by the non-parametric methods, a supplemental analysis is provided in

TABLE 4

Research Question Titles

Title	Questionnaire Form A Question Number
Influence you feel each of the hierarchical groups have	5
Influence you feel each of the hierarchical groups should have	6
Influence the governing body has on each of the hierarchical groups	7
Influence the hospital administrator has on each of the hierarchical groups	8
Influence the directors of various services have on each of the hierarchical groups	9
Influence the department heads have on each of the hierarchical groups	10
Influence the first line supervisors have on each of the hierarchical groups	11
Influence the nonsupervisory employees have on each of the hierarchical groups	12
Influence you feel the medical staff has	13
Influence you feel the medical staff should have	14
Influence the medical staff has on each of the hierarchical groups	15
Influence each of the hierarchical groups have on the medical staff	16
How satisfied are you with the way your immediate supervisor is doing his/her job	19

TABLE 4 continued

Title	Questionnaire Form A Question Number
Rank the five reasons (stated in the question) generally given by people when they are asked why they do the things their supervisors suggest or want them to do	20 A-E

SOURCE: Questionnaire Form A found in Appendix B.

Appendix D. It is interesting to note however, that the results obtained by use of the nonparametric methods described in Appendix D are essentially the same as those achieved by the methods described in this chapter.

Prototypes

Perceived Control

What type of perceived control structure do the control graphs present for the two hospitals studied? The answer to this question is the same for both hospitals, that is both are characterized by the "autocratic" or "oligarchic" model. This is the model where the curve falls (i.e., control decreases) as one goes down the hierarchy. Figures 8 and 9 present the control curves for the church affiliated hospital. Figure 8 depicts the control curves as reported by the various groups participating in the study. The managerial "control curve" represents the mean of the responses from the group of participants composed of the governing body, the hospital administrator, the directors of various services and the department heads. The supervisory "control curve" is based on the mean of the responses from the unit managers and other first line supervisory personnel. The other two curves represent the means of the responses from the remaining two groups, the composition of which are self-explanatory. Figure 9 depicts the control curve for the hospital based on the mean of the combined responses. This control curve is representative of

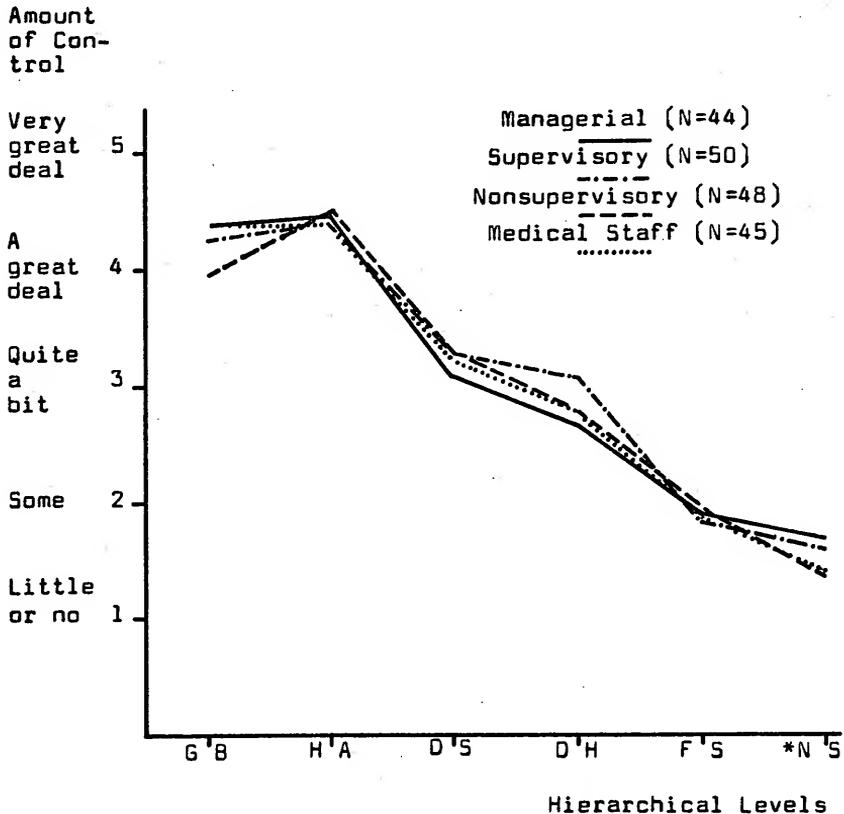


Figure 8. Perceived Control Curves for the Church Affiliated Hospital as Reported by the Different Response Groups.

*Abbreviations used here stand for governing body, hospital administrator, directors of various services, department heads, first line supervisory personnel and nonsupervisory employees, respectively. For brevity sake they are used under all the Figures in this chapter.

Amount
of Control

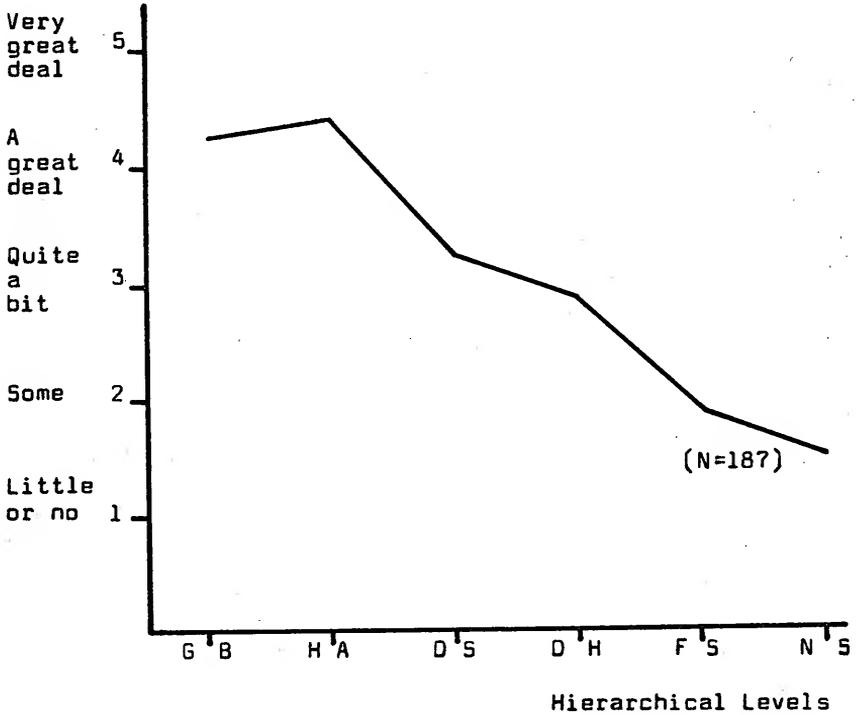


Figure 9. Perceived Control Curve for the Church Affiliated Hospital Based Upon the Combined Responses of all the Participants From That Organization.

the hospital's overall control structure and it does not vary a great deal from any of the curves as perceived by the individual response groups, a condition which is contrary to the finding of McMahon and Perritt in their study of two plants of a large manufacturing corporation.²

Figures 10 and 11 present the same information for the nonchurch affiliated hospital.

The data necessary for the drawing of these control curves were gathered by the research question which is identified as question number 5 on Questionnaire Form A, which is found in Appendix B. Responses to this question are found in tabular form on Tables 21 and 22 in Appendix C.

Desired Control

What type of control structure should exist for the two hospitals? The combined responses in both hospitals indicate that there should be a more equalitarian distribution of control than the respondents perceived existed in each organization. This they felt should be accomplished by reducing the control exercised by the governing body and by increasing the control exercised by each of the other levels, with the exception of the hospital administrator. His/Her control was perceived as being about what it should be.

Figure 12 depicts the responses by different groups for the church affiliated hospital, while figure 13 presents the "desired control curve" as reported by all of the participants from that organization and is based upon the mean of their combined responses.

Amount
of Con-
trol

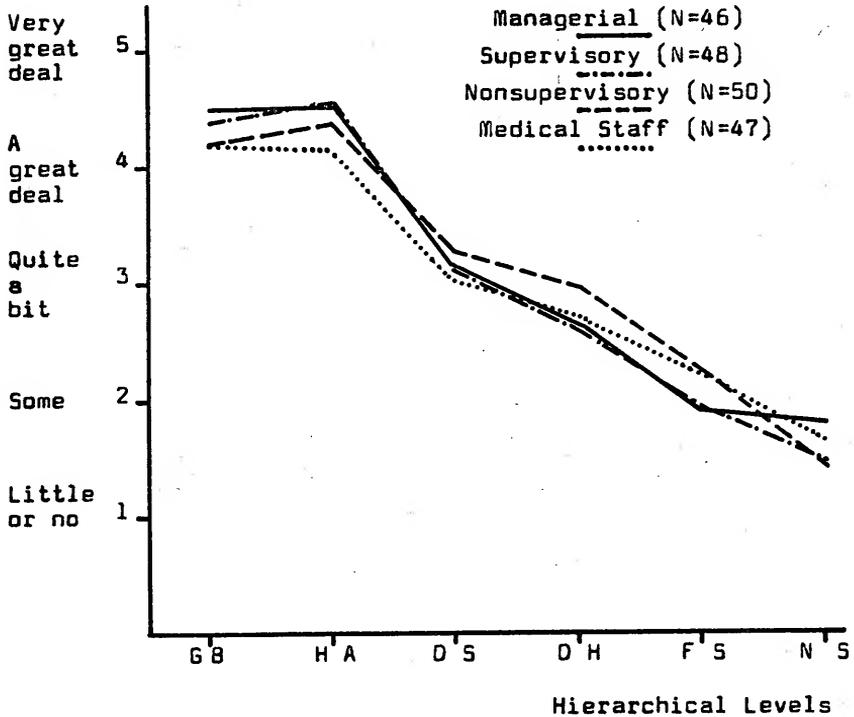


Figure 10. Perceived Control Curves for the Nonchurch Affiliated Hospital as Reported by the Different Response Groups.

Amount
of Con-
trol

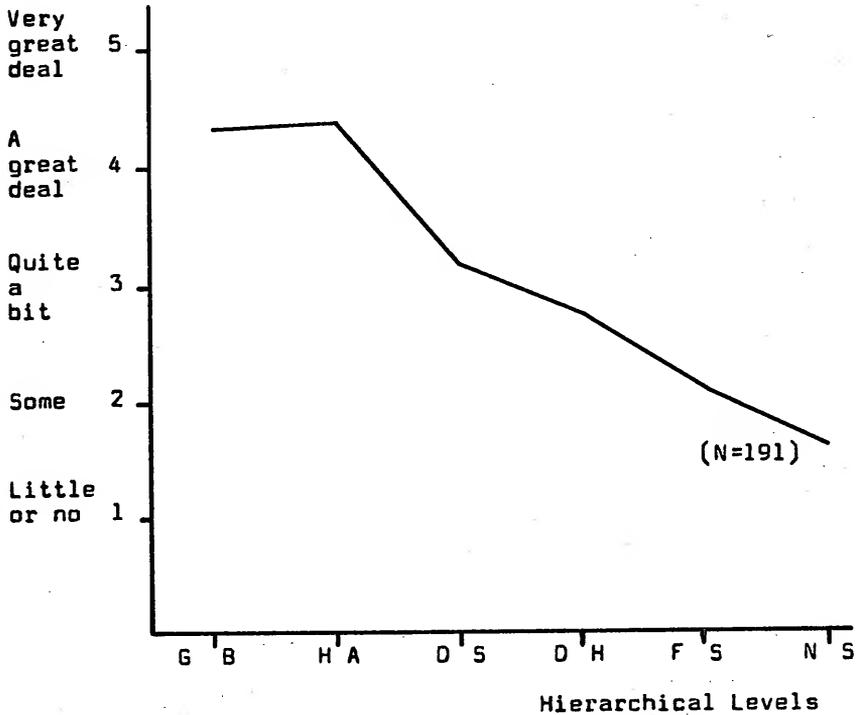


Figure 11. Perceived Control Curve for the Nonchurch Affiliated Hospital Based Upon the Combined Responses of all the Participants From That Organization.

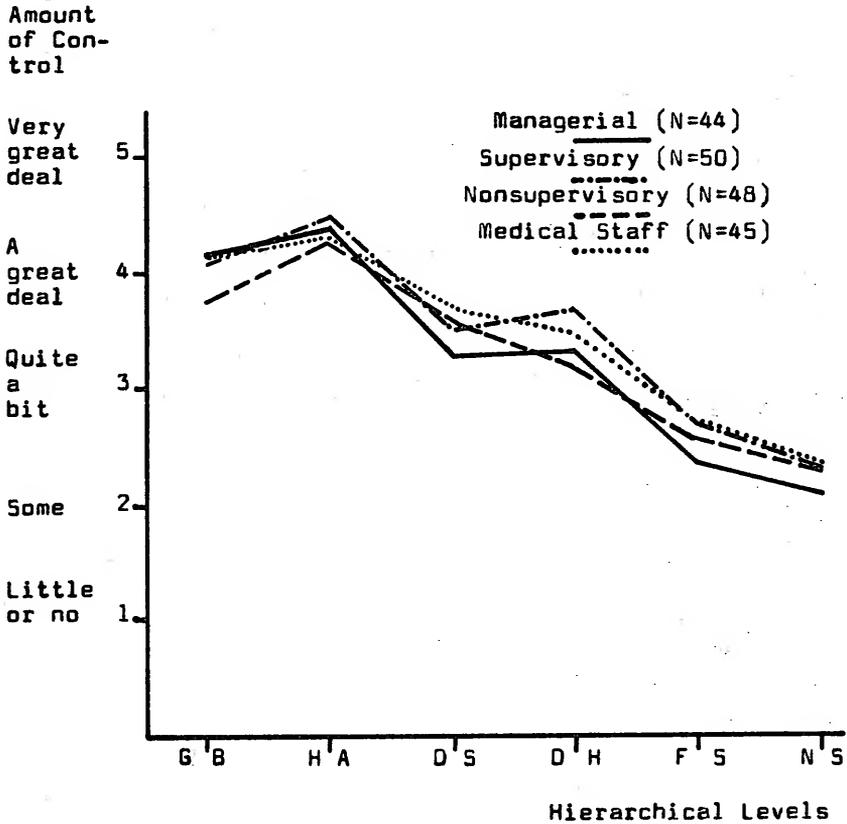


Figure 12. Desired Control Curves for the Church Affiliated Hospital as Reported by the Different Response Groups.

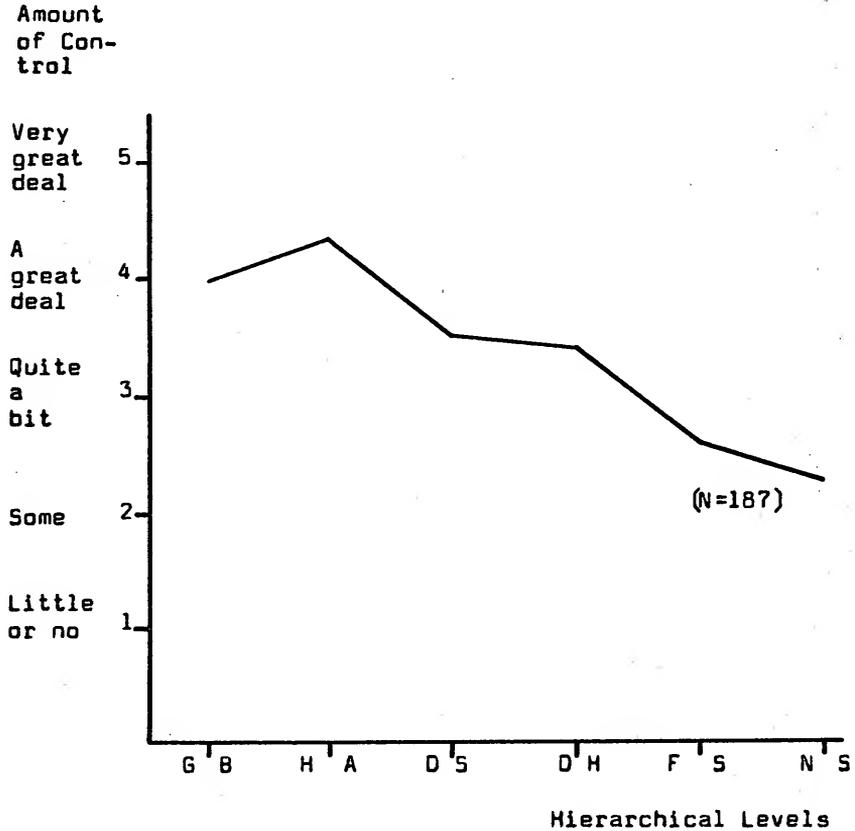


Figure 13. Desired Control Curve for the Church Affiliated Hospital Based Upon the Combined Responses of all the Participants From That Organization.

Figure 14 depicts the same picture for the nonchurch affiliated hospital as Figure 12 does for the church affiliated hospital, while Figure 15 presents the desired control curve for the nonchurch affiliated hospital based on the mean of the responses from all the participants from that hospital. As can be seen in these Figures the "desired control curves" for both hospitals depict a more equalitarian distribution of control than what the respondents perceived as being the "perceived control curves" for their respective hospitals.

Data necessary for the development of these Figures were gathered by the use of the question which is identified as question number 6 on Questionnaire Form A, included in Appendix B. Responses to this question are found in tabular form on Tables 23 and 24 in Appendix C.

Perceived vs. Desired Control

What is the prevailing pattern of control in each hospital and how should it be changed? The superimposition of the "perceived" and "desired" control curves make it possible to answer this question for each hospital. Figure 16 presents these control curves for the church affiliated hospital. The differences between the "perceived" and "desired" curves suggest that the respondents made an important distinction in their responses to the questions of how, in their opinion, the patterns of control should be and how they actually are. The "desired" control curve indicates

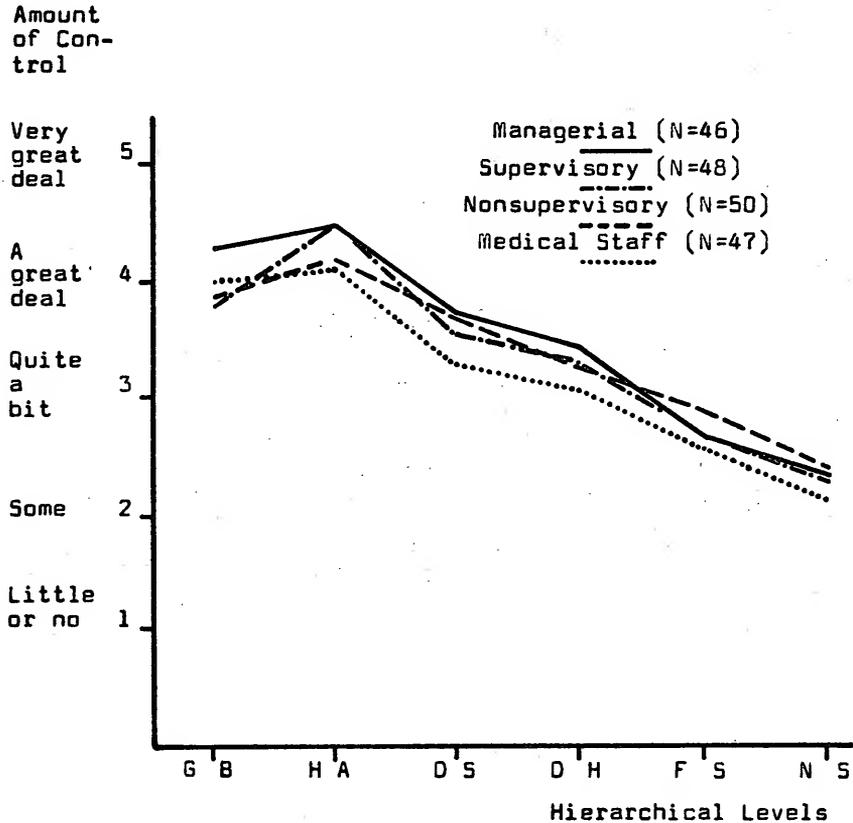


Figure 14. Desired Control Curves for the Nonchurch Affiliated Hospital as Reported by the Different Response Groups.

Amount
of Con-
trol

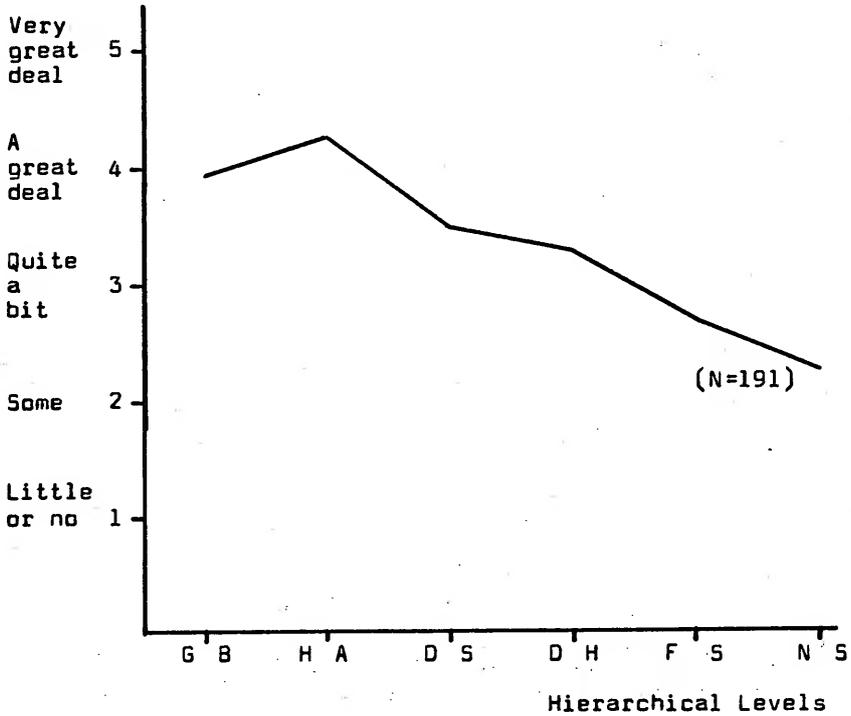


Figure 15. Desired Control Curve for the Nonchurch Affiliated Hospital Based Upon the Combined Responses of all the Participants From That Organization.

Amount
of Con-
trol

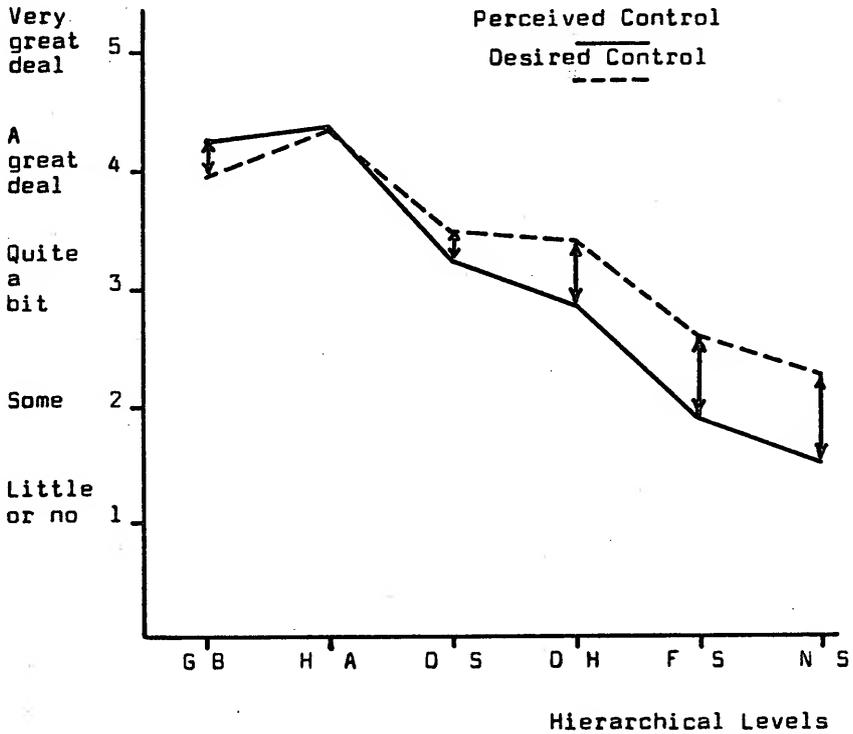


Figure 16. Perceived vs. Desired Control Curves for the Church Affiliated Hospital. Combined Responses From all the Participants From That Organization.

that the respondents felt as though there should be a more equalitarian distribution of control within the organization, to be accomplished by reducing the amount of control exercised by the governing body and by increasing the amount of control exercised by each of the other hierarchical levels, with the exception of the hospital administrator. His/Her control was perceived as being about what it should be. Figure 17 depicts the same information for the non-church operated hospital.

Previous research has demonstrated that such significant imbalances between prevailing and desired patterns of influence, as illustrated in these hospitals, frequently results in power conflicts, intraorganizational strains, and dissatisfactions among members of the organization which ultimately affects the performance of the organization adversely.

Statistical Analyses

An analysis of variance was used to analyze the data for perceived (question 5) and desired (question 6) control for each hospital separately. The question numbers included in parentheses here and throughout this section refer to the corresponding question found on Questionnaire Form A, which is included in Appendix B. The response groups means for each hierarchical level within each hospital have been plotted in Figures 8, 10, 12 and 14. The results of the analysis will now be discussed for each hospital separately.

Amount
of Con-
trol

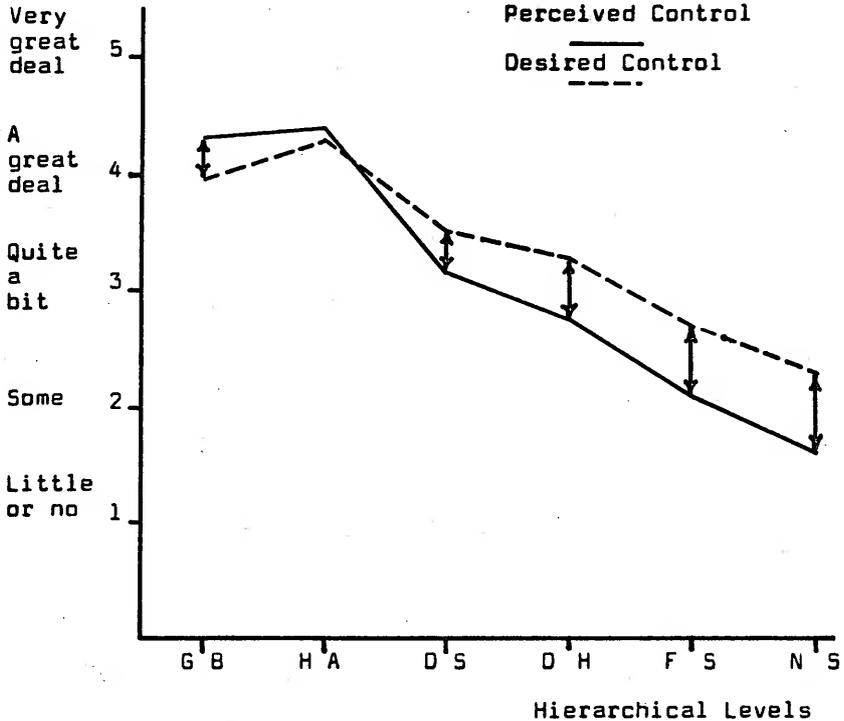


Figure 17. Perceived vs. Desired Control Curves for the Nonchurch Affiliated Hospital. Combined Responses From all the Participants From That Organization.

Church affiliated hospital (Hospital A)

None of the sources of variation associated with response groups are statistically significant. See Table 5 for the repeated measurements used in the analysis of variance.

The interaction between the perceived control (question 5) and the desired control (question 6) questions and the hierarchical levels are statistically significant at the .001 level. This says that the pattern of means for the hierarchical levels is not the same for the two questions. At every hierarchical level the perceived control mean differs significantly from the desired control mean except for the hospital administrator. See Table 6 for means and associated probability levels. The data also show that the further one moves down the hierarchical levels the greater the difference between the influence the hierarchical level "has" and the influence it "should have."

Further testing shows that the means for the hierarchical levels differs statistically ($P < .001$) within each of the perceived and desired control questions. On each question the mean for the hospital administrator is higher than the mean for the governing body, otherwise, the means decrease as one moves down the hierarchical levels on each question. Therefore the hypothesis of equal control among the hierarchical levels is rejected for the church affiliated hospital.

TABLE 5
Repeated Measurements for Analysis of Variance (ANOVA) Church Affiliated Hospital

Source	Degrees of Freedom (DF)	Sum of Squares (S.SQ.)	Mean Square (M.SQ.)	F Statistic	Probability P
Response Group	3	8.1226454+000	2.70755+000	0.95	N.S.
Error A	183	5.2402795+002	2.86354+000		
Question (Number 5, vs. Number 6)	1	6.1007130+001	6.10071+001	111.06	< .001
Interaction of Response Group and Question	3	3.3048916+000	1.10163+000	2.01	N.S.
Error B	183	1.0052130+002	5.49297-001		
Hierarchical Level	5	1.8546310+003	3.70926+002	436.70	< .001
Interaction of Response Group and Hierarchical Level	15	1.9023133+001	1.26821+000	1.49	N.S.
Error C	915	7.7717919+002	8.49376-001		

TABLE 5 continued

Source	Degrees of Freedom (Df)	Sum of Squares (S.SQ.)	Mean Square (M.SQ.)	F Statistic	Probability P
Interaction of Question and Hierarchical Level	5	7.9372550+001	1.58745+001	53.62	<.001
Interaction of Response Group and Question and Hierarchical Level	15	5.9113483+000	3.94090-001	1.33	N.S.
Error D	915	2.7088278+002	2.96047-001		
TOTAL	2243	3.7039840+003			

Backup data are found in Tables 25 through 29 in Appendix C.

TABLE 6

Mean for Each Hierarchical Level and Question for
the Church Affiliated Hospital

Hierarchical Level	Question		
	Perceived Control (Question 5)	Desired Control (Question 6)	Probability
Governing Body	4.24	3.99	<.001
Hospital Administrator	4.40	4.34	>.10(NS)
Directors of Services	3.22	3.51	<.001
Department Heads	2.84	3.41	<.001
First Line Supervisors	1.89	2.57	<.001
Nonsupervisory	1.49	2.24	<.001

Standard deviation of difference between question means for a given hierarchical level = .0601 with 1019 degrees of freedom. This standard deviation of difference between question means for a given hierarchical level is an estimate of error obtained from the analysis of variance procedure the repeated measurements of which are found on Table 5. This particular error term was computed as follows.

$$\sqrt{\frac{2(M.S.Q. Er B + (H-1) M.S.Q. Er D)}{S(H)}}$$

Where H = Number of hierarchical levels (6)
And S = Number of participants / hospital

The associated degrees of freedom (DF) are obtained by using Satterthwaite's approximation:

$$D.F. = \frac{(M.S.Q. Er B + (H-1) M.S.Q. Er D)^2}{\frac{(M.S.Q. Er B)^2}{DF \text{ for Er B}} + \frac{(H-1)2 (M.S.Q. Er D)^2}{DF \text{ for Er D}}}$$

Other pooled estimates of standard deviations would require different linear combinations of the sources of variation from the analysis of variance procedure.³

Nonchurch affiliated hospital (Hospital B)

As for the church affiliated hospital, the interaction between the perceived control (question 5) and the desired control (question 6) questions and the hierarchical levels are significant at the .001 level. See Table 7 for the repeated measurements and Table 8 for the means and associated probability levels. At every hierarchical level the perceived control mean differs significantly from the desired control mean except for the hospital administrator. Also the further one moves down the hierarchical levels the greater the difference between the influence that the level "has" and the influence it "should have."

The means for the hierarchical levels differ statistically ($P < .001$) for each question separately. On each question the mean for the hospital administrator is higher than the mean for the governing body. Otherwise, the means decrease as one moves down the hierarchical levels on each question. Therefore the hypothesis of equal control among the hierarchical levels is also rejected for the nonchurch affiliated hospital.

Comparison between hospitals/questions (perceived and desired)

A disproportionate analysis of variance on the data for each question separately shows, with minor exceptions, that none of the effects associated with differences between the hospitals are statistically significant (See Table 9 for the sources of variation on these analyses).

TABLE 7

Repeated Measurements for Analysis of Variance (ANOVA) Nonchurch Affiliated Hospital

Source	Degrees of Freedom (Df)	Sum of Squares (S.SQ.)	Mean Square (M.SQ.)	F Statistic	Probability P
Response Group	3	1.1270644+001	3.75688+000	1.08	N.S.
Error A	187	6.5200419+002	3.48665+000		
Question (Number 5 vs. Number 6)	1	4.7225567+001	4.72256+001	61.51	<.001
Interaction of Response Group and Question	3	2.9575081+000	9.85836-001	1.28	N.S.
Error B	187	1.4356691+002	7.67737-001		
Hierarchical Level	5	1.7454839+003	3.49097+002	442.01	<.001
Interaction of Response Group and Hierarchical Level	15	1.9141797+001	1.27612+000	1.62	<.1
Error C	935	7.3845769+002	7.89794-001		

TABLE 7 continued

Source	Degrees of Freedom (DF)	Sum of Squares (S.SQ.)	Mean Square (M.SQ.)	F Statistic	Probability P
Interaction of Question and Hierarchical Level	5	8.1860821+001	1.63722+001	52.46	<.001
Interaction of Response Group and Question and Hierarchical Level	15	1.2073022+001	8.04868-001	2.58	<.001
Error 0	935	2.9181616+002	3.12103-001		
TOTAL	2291	3.7458582+003			

Backup data are found in Tables 30 through 34 in Appendix C.

TABLE 8

Mean for Each Hierarchical Level and Question for
the Nonchurch Affiliated Hospital

Hierarchical Level	QUESTION		
	Perceived Control (Question 5)	Desired Control (Question 6)	Prob- ability
Governing Body	4.31	3.97	<.001
Hospital Admin- istrator	4.39	4.29	>.10(NS)
Directors of Services	3.15	3.50	<.001
Department Heads	2.72	3.25	<.001
First Line Supervisors	2.08	2.68	<.001
Nonsuper- visory	1.58	2.26	<.001

Standard deviation of difference between question means for a given hierarchical level = .0637 with 942 degrees of freedom. See comments under Table 6.

TABLE 9

Sources of Variation for Disproportionate Analysis of Variance on Data for Both Hospitals/Question

Source	Degrees of Freedom DF
Hospital	1
Response Group	3
Interaction of Hospital and Response Group	3
Subject/Cell	370
Hierarchical Levels	5
Interaction of Hospital and Hierarchical Levels	5
Interaction of Response Group and Hierarchical Level	15
Interaction of Hospital and Response Group and Hierarchical Level	15
Subject/Cell by Hierarchical Level	1850

The response group by question by hierarchical level means are given in Tables 10 and 11 for each hospital separately.

Distribution of Control

The control curves discussed in the preceding sections describe control in the active sense, that is, the extent to which hierarchically defined groups "exercise" control in the hospitals. Passive control curves can also be drawn according to the same principles which were used to draw the active control curves. The vertical axis in the case of the passive control curve represents the degree to which each of the hierarchical levels is controlled. While the active control curves tell how much control is exercised by each level, the passive control curves describe the extent to which each level is subjected to control within each of the hospitals. The superimposition of the active and passive control curves provides an important comparison: the extent to which each level exercises control compared with the extent to which it is being controlled. Figures 18 and 19 present such a comparison for the hospitals under study.

These figures help to illustrate some of the analyses which are possible through the use of the control graph technique. For example in Figure 18 it is evident that the active control curve conforms to the oligarchic model, i.e., control decreases as one goes down the hierarchy.

TABLE 10

Response Group by Question by Hierarchical Level Means - Both Hospitals

Question	Response Group	Hospital	N	Hierarchical Levels						NS
				GB	HA	OS	DH	FS	NS	
Perceived Control (5)	Managerial	A	44	4.39	4.45	3.09	2.68	1.91	1.66	
		B	46	4.48	4.50	3.17	2.63	1.91	1.78	
Supervisory		A	50	4.24	4.40	3.28	3.08	1.82	1.56	
		B	48	4.38	4.52	3.15	2.58	1.94	1.48	
Non-supervisory		A	48	3.98	4.38	3.29	2.79	1.94	1.35	
		B	50	4.20	4.38	3.26	2.98	2.24	1.42	
Medical Staff		A	45	4.38	4.38	3.22	2.78	1.89	1.40	
		B	47	4.19	4.17	3.02	2.66	2.21	1.64	

SOURCE: Respondents from both the church affiliated (A) and nonchurch affiliated hospitals (B). These respondents replied to the research question which is identified as question 5 on Questionnaire Form A, which is included in Appendix B. Standard deviation of difference between hospital means for a given response group - hierarchical level combination

$$= \sqrt{.7314 \left\{ \frac{1}{N_1} + \frac{1}{N_2} \right\}} \text{ with } DF=1585$$

where N_1 and N_2 are the associated sample sizes for the given response groups.

TABLE 11
Response Group by Question by Hierarchical Level Means - Both Hospitals

Question	Response Group	Hospital	N	Hierarchical Levels						NS
				GB	HA	OS	DH	FS	NS	
Desired Control (6)	Managerial	A	44	4.14	4.36	3.27	3.30	2.34	2.09	
		B	46	4.28	4.46	3.72	3.41	2.65	2.30	
	Supervisory	A	50	4.04	4.46	3.50	3.66	2.68	2.28	
		B	48	3.77	4.46	3.52	3.27	2.65	2.25	
	Non-supervisory	A	48	3.71	4.23	3.56	3.19	2.54	2.27	
		B	50	3.86	4.16	3.48	3.26	2.86	2.38	
Medical Staff		A	45	4.11	4.29	3.69	3.49	2.71	2.31	
		B	47	4.00	4.09	3.30	3.04	2.55	2.09	

SOURCE: Respondents from both the church affiliated (A) and nonchurch affiliated hospitals (B). These respondents replied to the research question which is identified as question 6 on Questionnaire Form A, which is included in Appendix B. Standard deviation of difference between hospital means for a given response group - hierarchical level combination

$$= \sqrt{.8445 \left\{ \frac{1}{N_1} + \frac{1}{N_2} \right\}} \text{ with } DF=1561$$

Where N_1 and N_2 are the associated sample sizes for the given response groups.

Amount
of Control

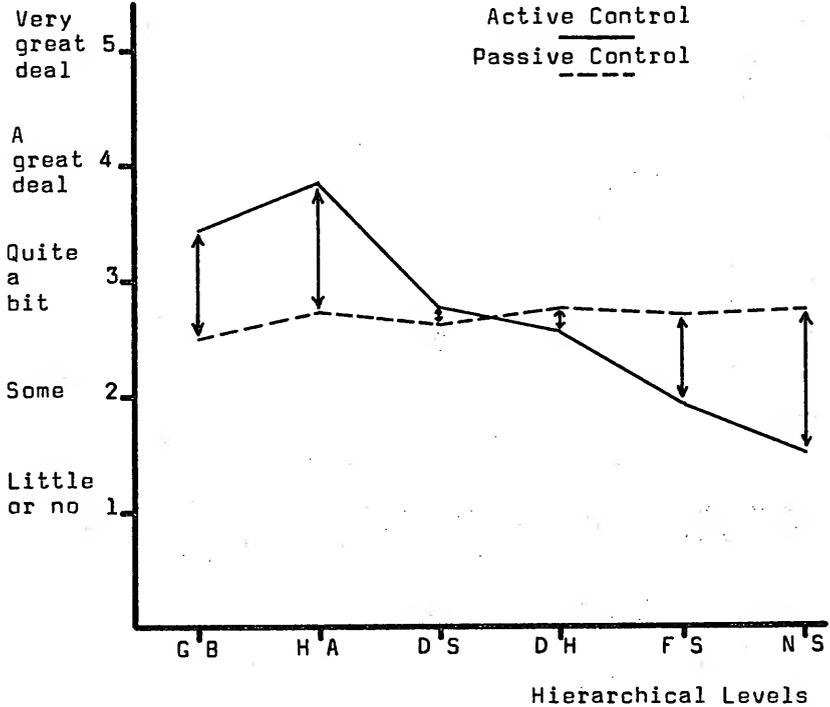


Figure 18. Active vs. Passive Control, Church Affiliated Hospital.

Amount
of Control

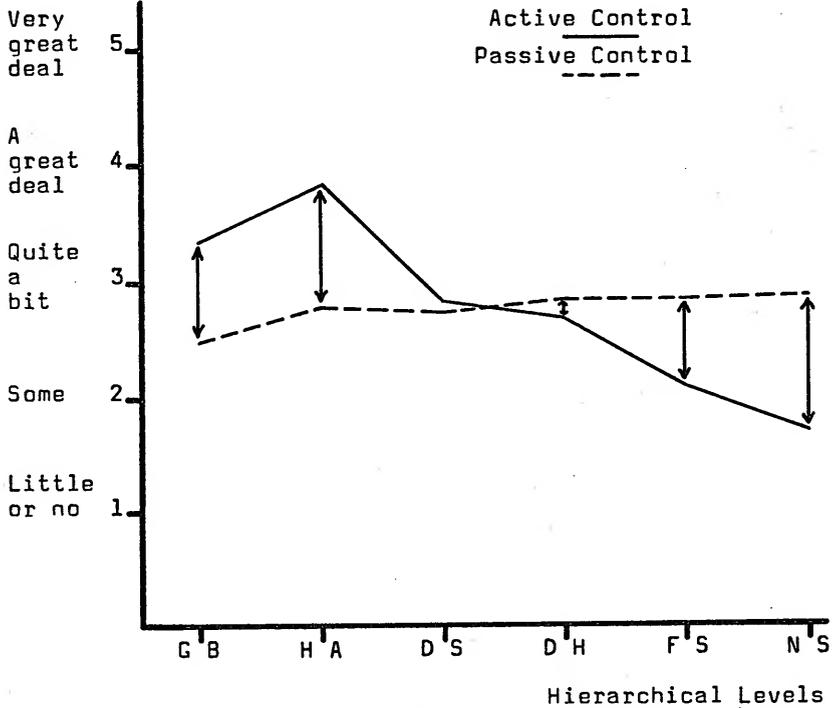


Figure 19. Active vs. Passive Control. Nonchurch Affiliated Hospital.

This is true except for the hospital administrator who is perceived as having more influence than the governing body. It is also evident from Figure 18 that the passive control curve is relatively flat, illustrating that each level is being controlled about equally. However, the governing body, the hospital administrator and the directors of various services exercise more control than they are subject to, while the department heads the first line supervisors and the nonsupervisory employees are subject to more control than they exercise. Consequently the roles of the governing body, the hospital administrator and the directors of various services within this hospital are perceived as being primarily ones of active control; that of the others as being on the receiving end of the control process. The results presented here offer a contrasting picture to that found by Tannenbaum in a large voluntary organization.⁴ In that study it was found that both active and passive control curves increased with hierarchical ascent. Upper levels in the voluntary group were judged to exercise more control than the rank and file, but they were also found to be subject to a greater amount of control within the organization. This suggests one possible difference in the patterns of control between such voluntary types of organizations as the League of Women Voters of the United States and the type hospitals discussed in this paper.

Comparing the results obtained from the two hospitals

one finds that the respondents from the nonchurch affiliated hospital perceived the control curves for their hospital to have essentially the same patterns as that perceived by the other respondents. See Figure 19. This comparison also permits the observation of a number of basic similarities that exists in the patterns of control in the two hospitals. First, the active control curves for both hospitals generally conform to the oligarchic pattern of control. Secondly, the hospital administrator is perceived of as having the greatest amount of active control in both hospitals. Finally, in both cases the passive control curves are relatively flatter than the active control curves, a characteristic which has been hypothesized to be general to most organizations.

Based on the results obtained from the questions on active and passive control, both of the Null Hypotheses for this area of the investigation are rejected. In this sense, the receipt of control in these two organizations is perceived as being a more general principle than the exercise of control. Everyone, from the governing body to the lowest employee is perceived as being subject to some minimum of control. This generalization cannot be extended to the distribution of active control. In this case, certain levels are considered to exercise a great deal of control while others are relatively powerless. As a result, on the dimension of passive control, the "executive" and the "rank and file" are more nearly equal than on the

dimension of active control, a condition which Tannenbaum and Georgopoulos found to be true in their study of formal organizations in general.⁵

Statistical Analyses

The same analysis of variance procedure is used on the data for the distribution of control, as was used on the data for the perceived and desired control analyses. The questions (7-12 on Questionnaire Form A) should be thought of as the amount of influence or active control the particular hierarchical level has. The results are discussed below for each hospital separately. Responses to the questions on distribution of control are found in tabular form on Tables 35 through 48 in Appendix C.

Church affiliated hospital (Hospital A)

Generally there is no indication that the "response" groups altered the pattern of response among the hierarchical levels and questions. The overall "response" group means differ statistically at the .01 level. It appears that this significance is caused by the low mean for the nonsupervisory group. No explainable pattern exists among the means.

The question by hierarchical level interaction is highly significant ($P < .001$). This says that the pattern of influence (or active control) for the various hierarchical levels is not the same for the different questions.

No hierarchical group has equal influence on all hierarchical levels ($P < .001$ for each hierarchical level). Therefore the hypotheses of equal "active" control among the hierarchical levels is rejected. See Table 12 for the repeated measurements and Table 13 for the associated means.

Nonchurch affiliated hospital (Hospital B)

There is statistical evidence that the pattern of response over the different questions and hierarchical levels is not the same among the four response groups. However, practically the data for the response groups are quite similar. If one chooses to ignore the "response" group effect, the same strong question by hierarchical interaction becomes evident, as for the church affiliated hospital. No hierarchical group has equal influence on all hierarchical levels, therefore the hypothesis of equal "active" control among the hierarchical levels is also rejected for this hospital. See Table 14 for the repeated measurements and Table 15 for the associated means.

Comparison between hospitals/question (7-12)

Statistically the pattern of influence among the hierarchical levels differs between the hospitals on each question except on the questions pertaining to the amount of influence the directors of services and the department heads have on what the other groups do (questions 9 and 10 on Questionnaire Form A). See Figures 20 and 21. However,

TABLE 12

Repeated Measurements for Analysis of Variance (ANOVA) Church Affiliated Hospital

Source	Degrees of Freedom (DF)	Sum of Squares (S.S.)	Mean Square (M.SQ.)	F Statistic	Probability P
Response Group	3	9.8733826+001	3.29113+001	4.33	.0056
Error A	183	1.3913229+003	7.60286+000		
Questions (Numbers 7-12)	5	4.3494000+003	8.69880+002	398.04	<.0001
Interaction of Response Group and Questions	15	5.8287493+001	3.88583+000	1.78	.0333
Error B	915	1.9996735+003	2.18544+000		
Hierarchical Level	5	4.9275249+001	9.85505+000	11.28	<.0001
Interaction of Response Group and Hierarchical Level	15	1.0838930+001	7.22595-001	0.83	.6480
Error C	915	7.9958019+002	8.73858-001		

TABLE 12 continued

Source	Degrees of Freedom (DF)	Sum of Squares (S.SQ.)	Mean Square (M.SQ.)	F Statistic	Probability P
Interaction of Question and Hierarchical Level	25	9.4726930+002	3.78908+001	88.25	<.0001
Interaction of Response Group and Question and Hierarchical Level	75	3.8323568+001	5.10981-001	1.19	.1271
Error D	4575	1.9642128+003	4.29336-001		
TOTAL	6731	1.1706918+004			

Backup data are found in Tables 49 through 53 in Appendix C.

TABLE 13
Question by Hierarchical Level Means for the Church Affiliated Hospital

Question Number (From Questionnaire Form A)	Hierarchical Levels							Overall (Active Control)
	GB	HA	DS	DH	FS	NS		
7	4.25	4.29	3.44	3.28	2.72	2.49	3.41	
8	3.75	4.01	3.92	3.97	3.72	3.64	3.84	
9	2.41	2.69	2.96	2.93	2.81	2.78	2.76	
10	1.88	2.25	2.27	2.67	2.97	3.07	2.52	
11	1.42	1.65	1.67	1.91	2.25	2.58	1.91	
12	1.21	1.40	1.39	1.61	1.63	1.76	1.50	
Overall (Passive Control)	2.49	2.71	2.61	2.73	2.68	2.72		

SOURCE: Respondents from the church affiliated hospital. Standard deviation of difference between any two question means for a given hierarchical level = .0878 with $df = 3014$.

TABLE 14

Repeated Measurements for Analysis of Variance (ANOVA) Nonchurch Affiliated Hospital

Source	Degrees of Freedom (DF)	Sum of Squares (S.S.)	Mean Square (M.S.Q.)	F Statistic	Probability P
Response Group	3	5.9560688+001	1.98536+001	2.36	.0731
Error A	187	1.5743767+003	8.41913+000		
Questions (Numbers 7-12)	5	3.4767516+003	6.95350+002	307.89	<.0001
Interaction of Response Group and Question	15	8.2428692+001	5.49525+000	2.43	.0017
Error B	935	2.1116530+003	2.25845+000		
Hierarchical Level	5	1.1067830+002	2.21357+001	19.74	<.0001
Interaction of Response Group and Hierarchical Level	15	1.6780029+001	1.11867+000	1.00	.4554
Error C	935	1.0487083+003	1.12161+000		

TABLE 14 continued

Source	Degrees of Freedom (DF)	Sum of Squares (S.SQ.)	Mean Square (M.SQ.)	F Statistic	Probability P
Interaction of Question and Hierarchical Level	25	1.4865730+003	5.94629+001	104.38	<.0001
Interaction of Response Group and Question and Hierarchical Level	75	9.4682348+001	1.26243+000	2.22	<.0001
Error D	4675	2.6632448+003	5.69678-001		
TOTAL	6875	1.2725437+004			

Backup data are found in Tables 54 through 58 in Appendix C.

TABLE 15
Question by Hierarchical Level Means for the Nonchurch Affiliated Hospital

Question Number (From Questionnaire Form A)	Hierarchical Levels							Overall (Actual Control)
	GB	HA	DS	DH	FS	NS		
7	4.44	4.24	3.28	3.03	2.65	2.30	3.32	
8	3.58	4.17	4.06	3.98	3.68	3.49	3.83	
9	2.28	2.68	3.13	3.06	2.94	2.84	2.82	
10	1.85	2.30	2.39	2.95	3.19	3.26	2.66	
11	1.46	1.65	1.83	2.09	2.61	2.88	2.09	
12	1.22	1.47	1.56	1.81	1.88	2.28	1.70	
Overall (Passive Control)	2.47	2.75	2.71	2.82	2.82	2.84		

SOURCE: Respondents from the nonchurch affiliated hospital. Standard deviation of difference between any two question means for a given hierarchical level = .0944 with DF = 3627.

Amount
of Con-
trol

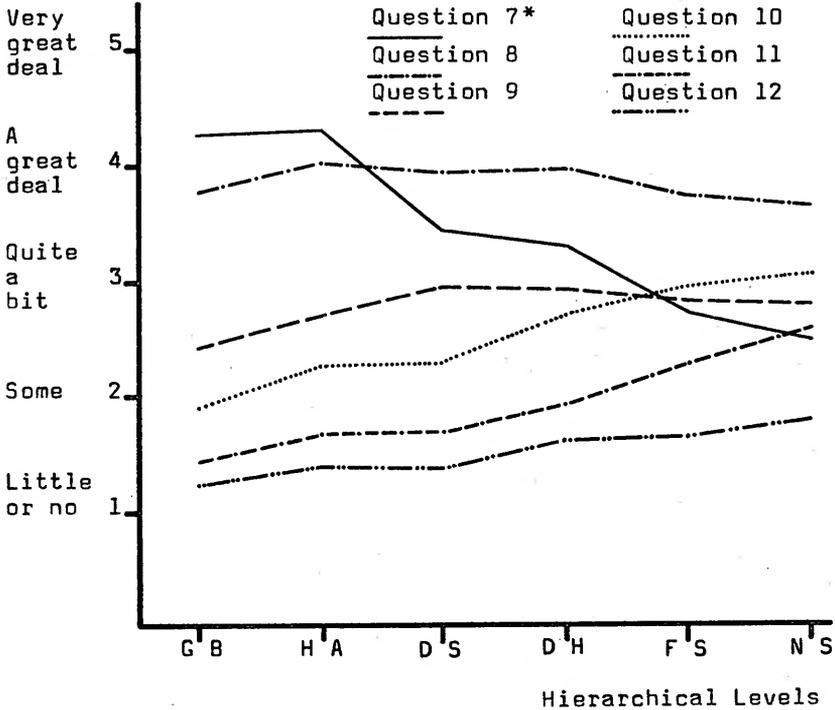


Figure 20. Question by Hierarchical Level Means for the Church Affiliated Hospital.

*These question numbers correspond to the questions found on Questionnaire Form A.

Amount
of Con-
trol

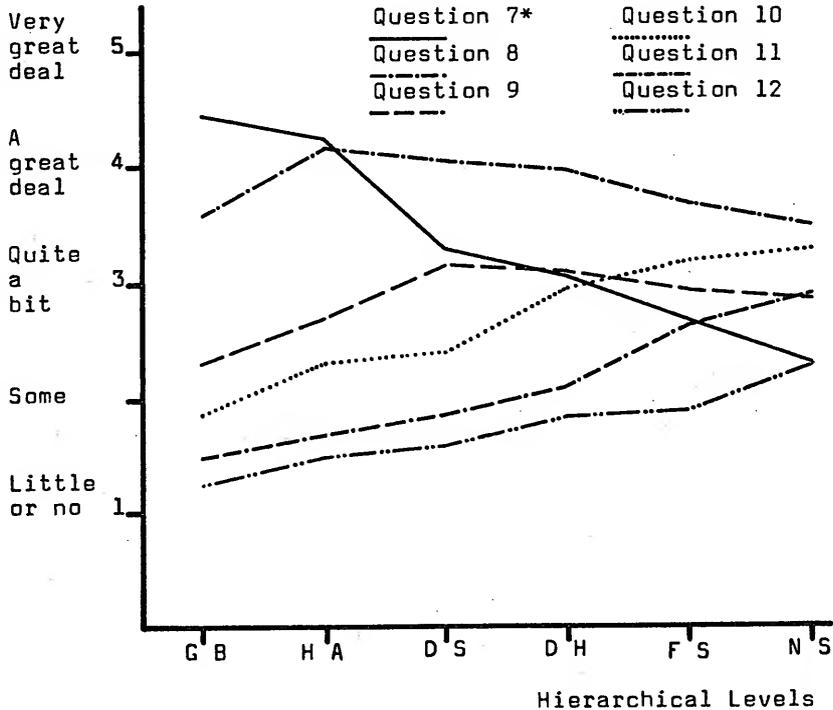


Figure 21. Question by Hierarchical Level Means for the Nonchurch Affiliated Hospital.

*These question numbers correspond to the questions found on Questionnaire Form A.

when looking at the complete picture (all questions) one sees practically the same influence patterns between hospitals. See Tables 59 through 66 in Appendix C for statistical tests.

Active vs. passive control

The active control curve tells how much control is exercised by each level and the passive control curve describes the extent to which each level is subjected to control by the other levels.

Tannenbaum in his research has used data in his reports which correspond to the overall mean for each question as the active control data and the overall mean for each hierarchical level as the passive control data. Using this approach one finds for the church affiliated hospital that the active control for the governing body is 3.41 while its passive control mean is 2.49. When all of these means are compared for the church affiliated hospital one finds that the active control mean is statistically larger than the passive control mean for the governing body, the hospital administrator and the directors of various services at the .001, .001 and .01 probability levels, respectively. Also the passive control mean is significantly ($P < .001$) larger than the active control mean at each of the three lower hierarchical levels (See Table 13). The pattern of differences between the active and passive control means is the same for the nonchurch affiliated hospital as for

the church affiliated hospital. However, all differences at the nonchurch affiliated hospital are statistically significant at the .001 level with exceptions for the directors of various services and the department heads, where the significant levels are .05 and .01 respectively (See Table 15).

Using Tannenbaum's approach as has been used throughout the analysis one finds that there is essentially no significant differences in the overall passive control patterns among the hierarchical levels for both hospitals (See Tables 13 and 15). Therefore the hypothesis of unequal passive control attributed to each hierarchical level is rejected for both hospitals.

Note on active vs. passive control

Apparently Tannenbaum and others who have followed his approach have chosen to ignore the fact that a particular hierarchical level may have more active control over some hierarchical levels than others. Likewise, the particular level could be subjected to more control from some hierarchical levels than others. In fact, it seems rather unrealistic to expect parallel responses among the hierarchical levels to the various questions. For example, this would assume that the governing body exercises as much control on itself (question 7 on Questionnaire Form A) as the nonsupervisory employees exercise on the governing body (question 12 on Questionnaire Form A). Similar

statements can be made for other hierarchical levels.

It appears then that an alternate approach to this comparison would be to simply compare the active and passive means between each pair of hierarchical levels. For example, the active control mean for the governing body on the hospital administrator at the church affiliated hospital (4.29) is compared with the passive control mean for the governing body by the hospital administrator (3.75). Tables 16 and 17 compare all the data means with the differences, at each hospital. Although the difference generally increases with subsequent lower hierarchical levels, statistically the active control mean is larger than the passive control mean for every comparison at each hospital ($P < .001$). Possibly this is an area in need of additional research but for the purposes of this paper the results obtained by following the method used by Tannenbaum and others are utilized and reported.

Bases of Control and Satisfaction

Bases of control

Why do people comply with the requests of organizational "superiors?" Likert⁶ and Tannenbaum⁷ have suggested that the processes underlying a system of high control and its effects derive essentially from the satisfaction of the ego motives of the individuals, such as the desire for status, achievements, and acceptance. If their interpretation

TABLE 16

Active vs. Passive Control Means, Plus Associated Differences, at the Church Affiliated Hospital

Active	Passive	Active Mean	Passive Mean	Difference
GB*	HA	4.29	3.75	0.54
	DS	3.44	2.41	1.03
	DH	3.28	1.88	1.40
	FS	2.72	1.42	1.30
	NS	2.49	1.21	1.28
HA	DS	3.92	2.69	1.23
	DH	3.97	2.25	1.72
	FS	3.72	1.65	2.07
	NS	3.64	1.40	2.24
DS	DH	2.93	2.27	0.66
	FS	2.81	1.67	1.14
	NS	2.78	1.39	1.39
DH	FS	2.97	1.91	1.06
	NS	3.07	1.61	1.46
FS	NS	2.58	1.63	0.95

SOURCE: Respondents from the church affiliated hospital.

*Abbreviations are the same as those which have been used throughout this chapter.

NOTE: Standard deviation of the difference between any two different means from the table of question by hierarchical means (Table 13) = .0926 with DF = 3438. This error term was obtained as a linear combination from the sources of variation in the analysis of variance procedure.

TABLE 17

Active vs. Passive Control Means, Plus Associated Differences, at the Nonchurch Affiliated Hospital.

Active	Passive	Active Mean	Passive Mean	Difference
GB*	HA	4.24	3.58	0.66
	DS	3.28	2.28	1.00
	DH	3.03	1.85	1.18
	FS	2.65	1.46	1.19
	NS	2.30	1.22	1.08
HA	DS	4.06	2.68	1.38
	DH	3.98	2.30	1.68
	FS	3.68	1.65	2.03
	NS	3.49	1.47	2.02
DS	DH	3.06	2.39	0.67
	FS	2.94	1.83	1.11
	NS	2.84	1.56	1.28
DH	FS	3.19	2.09	1.10
	NS	3.26	1.81	1.45
FS	NS	2.88	1.88	1.00

SOURCE: Respondents from the nonchurch affiliated hospital.

*Abbreviations are the same as those which have been used throughout this chapter.

NOTE: Standard deviation of the difference between any two different means from the table of question by hierarchical means (Table 15) = .1002 with DF = 4100. This error term was obtained as a linear combination from the sources of variation in the analysis of variance procedure.

is correct, then one would expect reward, referent, and expert power to be the more important bases underlying total control and its implications. In contrast, if the more traditional Weberian view is indeed correct, then the more important bases of control and its effects would be legitimate authority and the manipulation of rewards and sanctions.

The research question which was designed to address this particular concept is the one identified as question 20 on Questionnaire Form A, which is included in Appendix B. The responses to this question are found in tabular form on Tables 67 and 68 in Appendix C.

Table 18 presents a ranking of the five bases of control for each of the hospitals. This ranking is based on the combined responses of the participants. Excluded from this part of the research were the governing body and the medical staff.

The respondents from both hospitals agree that the most important basis of supervisory control is expert control. There is some disagreement as to which is the second most important basis of supervisory control but then there is complete agreement as to what constitute the fourth and fifth reasons for doing what their immediate supervisors ask or suggest.

There is an advantage to this ranking procedure which was required of the respondents, and that is that it forces the respondent to discriminate among all the bases of

control, rather than giving prominence to only one or two. Moreover, it helps the respondent to avoid confusing the extent of his compliance with the reasons for doing so.

Table 19 depicts the mean ratings for the five bases of control for each hospital and this helps clarify the ranking in Table 18. Based upon this information it becomes evident that the two most important reasons for complying with organizational supervisors in these two hospitals are expert and legitimate control. Of lesser importance are referent and reward control. Finally, the least likely reason for compliance is coercive control.

Satisfaction

Following the lead of Bachman, Smith and Slesinger⁸ question 19 on Questionnaire Form A, found in Appendix B was utilized to ask the respondents to indicate their general level of satisfaction with the way their immediate supervisors were doing their jobs. The responses to that question are found in tabular form on Tables 69 and 70 in Appendix C.

Table 20 presents the correlations between the five bases of control and the measure of satisfaction with the way supervisors were doing their jobs (See Tables 71-75 in Appendix C, which support Table 20). The strongest and most consistently positive correlations exist between expert control and satisfaction with the way supervisors were doing their jobs. This says that the level of

TABLE 18
 Ranking of the Bases of Control (Power)

Bases of Control	Organization	
	A Church Affiliated Hospital	B Nonchurch Affil- iated Hospital
Expert	1	1
Legitimate	3	2
Referent	2	3
Reward	4	4
Coercive	5	5

SOURCE: Respondents from the church and nonchurch affiliated hospitals.

TABLE 19
 Mean Ratings of Bases of Control (Power)*

Bases of Control	Organization	
	A Church Affiliated Hospital	B Nonchurch Affil- iated Hospital
Expert	4.26	4.10
Legitimate	3.82	4.00
Referent	3.19	3.05
Reward	2.01	2.12
Coercive	1.72	1.76

SOURCE: Respondents from the church and nonchurch affiliated hospitals.

*All ratings have been adjusted so that a value of 5.0 represents the highest possible rating, 1.0 represents the lowest possible rating. Respondents in both organizations used a ranking procedure.

TABLE 20
Correlations* with Satisfaction Measures

Bases of Control	Organization	
	A Church Affiliated Hospital (N=138)	B Nonchurch Affiliated Hospital (N=138)
Expert	+ .656	+ .735
Referent	+ .165	+ .324
Legitimate	- .127	- .172
Reward	- .265	- .275
Coercive	- .477	- .650

SOURCE: Tables 71 through 75 in Appendix C.

*The Pearson product - moment correlation was used in this study. The associated correlation coefficient (r) is an index reflecting the degree of linear association between two variables of interest. The index lies between -1 and +1, inclusive. The +1 is associated with the ideal relationship of the points lying on a straight line with one increasing as the other increases. The -1 is associated with one variable decreasing as the other increases in a straight line.

satisfaction tends to be related to the supervisor's level of competence and good judgment. Conversely the most negative correlations exist between coercive control and satisfaction with the way supervisors were doing their jobs. A follow-on research project in this area would seemingly be indicated to study the relationship between satisfaction with the way supervisors do their jobs and the performance of those they supervise.

Influence of the Medical Staff

While this case-study was designed primarily to focus on the overall institutional authority (control, influence) line which originates with the governing body, certain data were also gathered in an effort to explore several facets of the influence of the medical staff in each organization. Previous research has demonstrated that the medical staff derives its influence primarily from professional expertness and the high prestige, status, and power which the physicians enjoy among patients and in the larger community outside the hospital.⁹

Perceived Control

When the participants from the church affiliated hospital were asked how much influence the medical staff had on how their hospital functioned - on how it was run and how it operated, 64 percent indicated that the medical staff had a "very great deal" or a "great deal" of

influence on the functioning of their hospital. The corresponding percentage from the participants of the nonchurch affiliated hospital is 60 percent (See Tables 76 and 78 in Appendix C.) When comparing these responses to those previously obtained in reference to the influence of the various hierarchical levels in each organization one finds that only the governing body and the administrator were perceived as being more influential than the medical staff. For example in the church affiliated hospital 91 percent of the respondents indicated that the administrator had a "very great deal" or a "great deal" of influence on determining policy or deciding on what went on in their hospital, while 81 percent felt the governing body had that much influence. The corresponding percentages for the nonchurch affiliated hospital are 89 percent and 85 percent respectively. Thus, the hospital administrator was seen by both groups of respondents as being the most influential followed, in order of decreasing influence, by the governing body and then the medical staff. These findings support those previously submitted by Georgopoulos and Mann.¹⁰

Desired Control

Considering next the data about desired influence, or the amount of influence the medical staff "should have" according to the respondents, one finds that in both hospitals, with the exception of the respondents from the medical staffs,

all of the response groups perceived the medical staff as having more influence than it "should have" (See Tables 77 and 79 in Appendix C). For example in the church affiliated hospital 66 percent of the managerial respondents, 70 percent of the supervisory respondents, 60 percent of the non-supervisory respondents, and 60 percent of the medical staff respondents perceived the medical staff as having a "very great deal" or a "great deal" of influence on the functioning of their hospital, while only 41 percent of the managerial, 56 percent of the supervisory, 54 percent of the nonsupervisory and 64 percent of the medical staff respondents felt as though the medical staff "should have" that much influence. In the nonchurch affiliated hospital the corresponding percentages for the amount of influence which the medical staff has on the functioning of the hospital are 65 percent, 56 percent, 62 percent and 57 percent respectively, and for the amount of influence the medical staff "should have" 30 percent, 42 percent, 42 percent, and 61 percent respectively. This disagreement as to the amount of influence the medical staff has as compared to what it should have, is considered to be a potential source of tension between the medical staff and the governing body, the administrator, and directors of various services, the department heads as well as the first line supervisors and should be the subject of a more detailed investigation to ascertain the precise significance and consequences of such disagreements.

Active vs. Passive Control

Tables 80,81 and 82 found in Appendix C, present the combined responses of the participants in reference to the questions concerning the amount of active and passive control for the medical staff in each organization. Analyses of these data revealed that in both organizations the medical staffs were perceived of as exercising more control than they were subjected to. This, of course, is at least partially attributable to the fact that the physicians were not employees of the hospitals and, consequently, the hospitals did not have direct control over them on the basis of conventional employer-employee considerations.

In the church affiliated hospital 53 percent of the respondents perceived the medical staff as having only "some" or "little or no" influence over the governing body, yet 56 percent of them believed the medical staff to have at least "quite a bit of influence" over the administrator. Also they perceived of this influence increasing over the other hierarchical levels to the point that 74 percent, 79 percent, 90 percent and 88 percent of the respondents believed that the medical staff had at least that amount of influence over the directors of various services, the department heads, the first line supervisors and the non-supervisory employees respectively. These percentages for the nonchurch affiliated hospital are 64 percent, 50 percent, 75 percent, 80 percent, 80 percent and 82 percent respectively.

While the medical staffs in both hospitals were perceived of as having a "great deal" of influence in each organization, at the same time it was felt that they were subject to only "some" or "little or no" control within that organization. In the church affiliated hospital for example 58 percent of the respondents felt as though the medical staff was subject to "some" or "little or no" control while only 26 percent believed that it was subject to a "great deal" or a "very great deal" of control. The corresponding percentages for the nonchurch affiliated hospital are 59 percent and 26 percent respectively. This finding coincides with and supports the earlier findings of Georgopoulos and Mann who state that "in practice, doctors are more responsible to their own staff organization, rules, and standards than they are to the total hospital organization."¹¹

Summary

In summary then it can be stated that in these two hospitals the medical staffs were perceived of as being very influential groups which exercised more control within the organizations than all of the response groups, except for the participants from the medical staffs, thought they "should have." Additionally, while they were perceived of as exercising a "great deal" or a "very great deal" of control they were perceived of as only being subject to "some" or "little or no" control, a condition which is conducive

to the creation of tension between the medical staffs and several levels of the organizational hierarchy within each hospital. These general observations are intended only to indicate that the influence of the medical staff on how hospitals are run and how they are operated should be the subject of a more detailed investigation and on a larger scale.

Data for this part of the analyses were collected through the use of the research questions which are identified as question numbers 13,14,15 and 16 on Questionnaire Form A, which is included in Appendix B.

NOTES

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2. J. Timothy McMahon and G.W. Perritt, "The Control Structure of Organizations: An Empirical Examination," Academy of Management Journal, Volume 14, Number 3 (September, 1971), pp.327-340.
3. R.L. Anderson and T.A. Bancroft, Statistical Theory in Research (New York: McGraw-Hill, Inc., 1952), pp.345-351.
4. Arnold S. Tannenbaum, "Control and Effectiveness in a Voluntary Organization," American Journal of Sociology, Volume 67, Number 1 (July, 1961), pp.33-46.
5. Arnold S. Tannenbaum and Basil S. Georgopoulos, "The Distribution of Control in Formal Organizations," Social Forces, Volume 36, Number 1 (October, 1957), pp.44-50.
6. Rensis Likert, New Patterns of Management (New York: McGraw-Hill, Inc., 1961).
7. Arnold S. Tannenbaum, "Control in Organizations: Individual Adjustment and Organizational Performance," Administrative Science Quarterly, Volume 7, Number 2 (June, 1962), pp.236-257.
8. Jerald G. Bachman, Clagett G. Smith and Jonathan A. Slesinger, "Control, Performance, and Satisfaction: An Analysis of Structural and Individual Effects," Journal of Personality and Social Psychology, Volume 4, Number 2 (August, 1966), pp.127-136.
9. Basil S. Georgopoulos and Floyd C. Mann, The Community General Hospital (New York: The Macmillan Company, 1962), p.568.
10. Ibid., p.571.
11. Ibid., p.568.

CHAPTER VI

SUMMARY, CONCLUSIONS, AND IMPLICATIONS FOR FURTHER RESEARCH

Summary

The process by which members determine or influence how things get done in an organization has been the subject of extensive research in such organizations as unions, voluntary associations, colleges, business and industrial organizations. Yet despite its importance in today's society, studies similar to the ones which have been accomplished in these other organizations, are practically nonexistent for the hospital. Therefore this case-study, using the successful methodology of the previously mentioned studies, was designed to accomplish, on a limited basis, such a task. In particular its purpose was twofold. First, was to compare the patterns of control by hierarchical level in two nongovernmental, not-for-profit hospitals (one church operated, the other nonchurch operated) to determine what, if any, significant differences existed between the two. This was done by utilizing the control graph approach to assess: (a) perceived vs. desired control and (b) active vs. passive control. Second, was to determine

the relationship between the perceptions of the individuals at various hierarchical levels (using the French and Raven fivefold typology) as to the bases of supervisory power (influence, control) in each institution and then to correlate these with their perceptions as to satisfaction with the way immediate supervisors were doing their jobs.

Selection of the two hospitals, which were asked to participate in the case-study, was accomplished by utilizing an extensive list of criteria which each was required to meet in order to be considered. The primary difference between the two chosen was that one was a church affiliated and operated hospital while the other was not.

The hierarchical levels in each hospital from which the participants were selected were as follows:

1. Governing Body
2. Chief Executive Officer
3. Directors of Various Services
4. Department Heads
5. Unit Managers and Other First Line Supervisory Personnel.
6. Nonsupervisory Employees.

The sample size was such that it consisted of approximately 50 managerial personnel, 50 supervisory personnel, 50 nonsupervisory personnel and 50 members of the medical staff.

Of the 400 individuals initially selected to participate in the study as respondents, 5 had left their

respective hospitals permanently by the time the data were collected. Excluding these, the actual number of possible respondents from the two participating hospitals was 395. Out of this total, 7 individuals were unreachable. By this it is meant that they were indefinitely absent because of illness or leave or they were on extended vacation or travel and did not return in time to participate in the project. Thus, the total number of available respondents from the two hospitals combined turned out to be 388. All of these individuals were given the opportunity to complete a questionnaire and of the 388 available respondents, 378 finally completed their questionnaires, making the overall net response rate attained by the study a very respectable 97.5 percent.

Three rather general methodological limitations had their impact upon the study. First and perhaps the most serious limitation of the research is found in the deliberate restriction of the population of hospitals studied. This study was confined to a case-study of two particular hospitals. The primary purpose for doing this was to avoid a great many methodological and theoretical difficulties that would have been introduced as a result of the great variance which exists in the broader population of hospitals. Other reasons were also taken into consideration before the decision was made to restrict the population of hospitals to be covered. A second, and less serious, limitation originates from the control graph approach to

the study of organizational control. This approach relies on the judgments of organization members for the measures of control and organization members, it has been stated by opponents of the approach, differ in their judgments about control. However, in adopting this approach to the measurement of control the assumption was made that organization members as a group were able to provide reasonably valid and reliable data. While it can be argued that these individuals differs in their judgment about control, it is important to bear in mind that the reliability of the measures is a function of the number of respondents chosen from each of the organizations studied. Thus although the reliability of scores based on an individual's responses may be low, median or averaged responses may be quite stable. In most case, reliability can be improved by increasing the number of informants. The fact that individual respondents may be unsure of their answers and that they may be in error does not in itself vitiate the method, provided that respondents give better than chance answers, that the errors are random, and that a sufficient number of respondents are available. Experience with this method suggests that in most cases a minimum of twenty-five to fifty respondents per organizational unit are necessary. In this study approximately fifty individuals were in each of the four response groups from each hospital or stated another way almost 200 respondents per hospital. The third and final limitation is closely related to the stage of

present-day theory concerning organizations, and to the current state of social-psychological knowledge about the phenomena with which this study was concerned. The better the theoretical knowledge available, the more powerful, more sensitive, and more refined the measures and tools of analysis at the disposal of the scientist. Therefore, the methodology used in this study was better in relation to some of the areas and topics investigated than to others, depending upon the theoretical foundations of each area. Even with these limitations the approach used throughout this project was considered to be more suitable than the available alternatives for the measurement of the particular concepts with which this research was concerned.

Conclusions

On Patterns of Control

Based upon the research findings in Chapter V concerning the various aspects of the patterns of control which are addressed in this case-study, it is concluded that there were no significant differences in the overall control patterns in the two hospitals which participated in the study. This conclusion is supported by the findings in each of the areas of investigation which pertained to this concept. These findings are summarized as follows:

(1) Prototypes. Both hospitals were perceived as being characterized by an "autocratic" or "oligarchic"

control structure. This is the model where the curve falls (i.e., control decreases) as one goes down the hierarchy.

(2) Desired Control. Both hospitals were visualized as being in need of a more equalitarian distribution of control than that which existed in them.

(3) Perceived vs. Desired. There was a rather marked imbalance between prevailing and desired patterns of influence in both institutions.

(4) Distribution of Control. The receipt of control in both organizations was perceived of as being a more general principle than the exercise of control, as evident by the fact that the active control curves in both hospitals generally conformed to the oligarchic pattern of control while the passive control curves for both were relatively flat.

There, of course, were some differences found in these various areas of investigation but the overriding principle in each area was considered to be that which has been summarized in these rather broad statements. For a more detailed discussion of the finding in each area the reader should refer back to the particular area of investigation as reported in Chapter V.

Finally it is interesting to note that all three Null Hypotheses concerning the various patterns of control were rejected in both hospitals.

On the Bases of Supervisory Control and Satisfaction

With regard to the question of why people comply with the requests of organizational superiors it is concluded that in these two institutions, out of the five bases of supervisory control measured, the single most important reason was because subordinates respected the competence and good judgment of their superiors (expert control). The least likely reason for compliance was because the supervisors could apply pressure or penalize those who did not cooperate (coercive control).

Additionally it is concluded that the strongest and most consistently positive correlations existed between expert control (influence, power) and satisfaction with the way immediate supervisors were doing their jobs. Conversely the most negative correlations existed between coercive control (influence, power) and satisfaction with the way immediate supervisors were doing their jobs.

On the Influence of the Medical Staff

The medical staffs in both hospitals were perceived of as being very influential groups which exercised more control within each organization than was generally believed they should. Additionally while they were perceived of as exercising "a great deal" of control, it was the opinion of the majority of the participants that they were subject to only "some" control within the organization, a condition which is considered to be a potential source of tension between the medical staffs and various levels of the organizational hierarchies.

Implications for Further Research

Patterns of Control

This and other studies have demonstrated the versatility of the control graph approach to the study of organizational control. It is suggested that:

1. It provides a convenient device for characterizing and thinking about control in social systems.

2. It provides a method of description which is both quantitative and conceptually meaningful.

3. It illustrates the importance of several aspects of control in organizations.

4. It is one approach to the comparative study of organizations with the advantages of being a general, quantitative technique with conceptual as well as operational potentialities.

5. It opens up to the process of scientific testing a number of hypotheses that have been discussed primarily in speculative terms.

While this case-study was of necessity restricted in scope to the study of two nongovernmental, not-for-profit hospitals it is believed much could be gained from research on a broader scale into the patterns of control found in the various categories of hospitals, i.e., governmental, nongovernmental, for-profit, not-for-profit, general, special, long-term, short-term, etc.,. Item 4 above suggests that the control graph approach can be used for the

comparative study of organizations. Why not a comparative study of the patterns of control in the various types of hospitals? Why not a study of sufficient scope as to permit broad generalizations about the patterns of control in hospitals in general? These are interesting and yet very challenging questions which can and should be answered so that administrators and other health care officials might become better informed on the nature of the organizations they are called upon to manage, as effectively and efficiently as possible.

Bases of Control

Recent research has indicated that there is a direct relationship between the amounts of control exercised by members at all organizational echelons, higher performance and increased satisfaction. Are there ways in which satisfaction and the amount of control exercised by members at various organizational echelons (especially the lower levels) can be increased in hospitals? If so, then what is needed to implement them and how are they related to the perceived bases of supervisory control? Certainly these are areas worthy of additional research.

Influence of the Medical Staff

The influence of the medical staff on how hospitals are run and how they are operated offers a lot of opportunities for worthwhile research projects. For example, is

there general disagreement as to the amount of influence medical staffs have as compared to what members from the various hierarchical levels think they should have? If so, what is the precise significance and consequences of this disagreement? Does it interfere with efficiency, and is it a source of tension between medical staffs and various levels of organizational hierarchies?

SUMMARY

With the demonstrated versatility of the control graph approach to the study of organizational control many areas that were previously discussed primarily in speculative terms can now be subjected to empirical examination. This statement is also true for the study of "control" in hospitals, as attested to by this project and the areas which it has identified as in need of additional research. While this list of areas in need of additional research was not intended to be an all inclusive list it certainly is suggestive of a number of problems which should be amenable to empirical tests.

APPENDICES

APPENDIX A

HOSPITAL CHARACTERISTICS

<u>Church Affiliated</u>		<u>Nonchurch Affiliated</u>
* 21 - 10 - 5	Control, Service and Stay	* 23 - 10 - 5
410	Beds	415
15,750	Admissions	16,100
340	Census	349
83.0	Occupancy	84.0
44	Bassinets	40
1,535	Births	1,560
\$9,725,000	Expense (Total)	\$9,425,000
\$4,825,000	Payroll	\$5,080,000
1,000	Personnel	960
* A-1-9-10	Approvals	* A-1-9-10
* F-1-2-3-5-	Facilities	* F-1-2-3-5-7-8-
7-8-9-10-11-		9-10-11-12-15-16-
12-15-16-17-23-		17-23-27-34-41.
34-35-41.		

*The codes used in this comparison are the same as the ones used in the "Key to List of Hospitals" found in the 1973 Guide Issue of Hospitals. Both hospitals were: (1) fully accredited by the Joint Commission on the Accreditation of Hospitals; (2) administrated by a chief executive officer under a policy-making body at the local level known as the governing body; and (3) located in the same state, with the same type of environment (urban). Additionally the medical staffs of both hospitals consisted of approximately 150 physicians, about 50 of whom were full-time. Essentially the same specialty services were available in each hospital with both being primarily concerned with patient care as opposed to research and/or teaching functions.

APPENDIX B

Comment

This appendix contains a sample of the cover letter, the additional instructions, and the questionnaire that were distributed to each of the respondents. Distribution and collection were made as discussed in Chapter IV.

SAMPLE COVER LETTER

TO: All Concerned

RE: Attached Questionnaire and Instructions

The research project being completed by Major B.H. Corum, as a part of the requirements to complete his doctorate work in Management at the University of Florida, is one that could be of considerable assistance to hospital managers in meeting some of the problems we face today.

Because of this, and because of my desire to cooperate with Major Corum, I would like for you to take the time necessary to fill out the attached questionnaire and return it for transmittal to Major Corum. It is not necessary that you be identified. In fact, Major Corum is insistent that no individual or hospital be identified in any of this data.

Thank you in advance for your assistance.

ADDITIONAL INSTRUCTIONS

To Each Respondent

This research project has been coordinated with your Hospital Administrator. I have assured him/her that complete anonymity will be maintained throughout the study and that any information which you provide will be kept in strictest confidence.

Definition: In this project a Unit Manager is considered to be a coordinator of activities within the department, a controller of materials and costs and supervisor of administrative personnel. A Unit Manager is referred to in some hospitals as a service manager, administrative coordinator or administrative assistant. Regardless of the title used the important thing to remember is that a Unit Manager serves in a staff capacity to the Department Head.

Return the completed questionnaire to _____ as soon as possible but in no case should it be later than _____.

Thank you for your cooperation and assistance.

B.H. Corum

Doctoral Candidate

University of Florida

SAMPLE QUESTIONNAIRE

Instructions

In this decade of the twentieth century, the hospital system is rapidly undergoing a change in philosophy; hospital organization and management are changing with each advance in medical science. Dr. Reginald W. Revans suggests "that those in charge of hospitals are the persons best fitted to pursue research into the operational problems of hospital management." "To do this they may need the help of social scientists. If hospital administrators are to use what the external research worker has to say to them, they should both intellectually and emotionally understand his approach, his methods, his criteria, his austerity. This they will do best when they themselves are closely joined in research into their own problems."

This research project is designed to help me, a professional hospital administrator, accomplish the above stated objectives. Your cooperation in this project is gratefully appreciated. The information which you provide will be kept in strictest confidence and will be available to no one except me, the researcher. The questionnaire is so designed as to maintain complete anonymity. In addition, it is also designed to require only a minimum of

your precious time. Questions numbers 1 through 19 and number 21 require only that you check the appropriate blanks. Question number 20 has its own instructions. Please complete each question on your own time and without any discussion with anyone else.

B.H. Corum

Doctoral Candidate

University of Florida

Questionnaire Form A

1. How long have you been connected with this hospital?
(Check one)
 - (1) Less than one year ___
 - (2) Between one and three years ___
 - (3) Between three and five years ___
 - (4) Between five and ten years ___
 - (5) More than ten years ___

2. How long have you been in your present position?
(Check one)
 - (1) Less than one year ___
 - (2) Between one and three years ___
 - (3) Between three and five years ___
 - (4) Between five and ten years ___
 - (5) More than ten years ___

3. What is your educational background? (Check the highest completed)
 - (1) Some high school ___
 - (2) High school graduate ___
 - (3) Some college ___
 - (4) College graduate ___
 - (5) Advanced degree (M.S., Ph.D., M.D., DD., etc.) ___

4. Which of the following groups best categorizes your present position with the hospital? (Check one)
 - (1) Hospital Administrator (Executive Director, etc.) ___
 - (2) Director of a Service ___
 - (3) Department Head ___
 - (4) Unit Manager ___
 - (5) Other Supervisory Position ___
 - (6) Nonsupervisory Position ___

5. In general, how much say or influence do you feel each of the following groups have on determining policy and deciding on what goes on in your hospital? (Check one for each group)

Questionnaire Form A, Page 2

	Little or no influ- ence	Some influ- ence	Quite a bit of influ- ence	A great deal of influ- ence	A very great deal of influ- ence
	1	2	3	4	5
Governing Body (Board of Direc- tors, Trustees)	_____	_____	_____	_____	_____
Your Hospital Administrator (Executive Di- rector, etc.)	_____	_____	_____	_____	_____
The Directors of Various Ser- vices	_____	_____	_____	_____	_____
The Depart- ment Heads	_____	_____	_____	_____	_____
Unit Managers and Other Super- visory Personnel	_____	_____	_____	_____	_____
Nonsupervisory Employees	_____	_____	_____	_____	_____

6. In general, how much say or influence do you think each of the following groups should have on determining policy and deciding on what goes on in your hospital? (Check one for each group)

	Little or no influ- ence	Some influ- ence	Quite a bit of influ- ence	A great deal of influ- ence	A very great deal of influ- ence
	1	2	3	4	5
Governing Body (Board of Direc- tors, Trustees)	_____	_____	_____	_____	_____
Your Hospital Administrator (Executive Di- rector, etc.)	_____	_____	_____	_____	_____

Questionnaire Form A, Page 3
Question 6 continued

	Little or no influ- ence	Some influ- ence	Quite a bit of influ- ence	A great deal of influ- ence	A very great deal of influ- ence 5
	1	2	3	4	5
The Directors of Various Ser- vices	_____	_____	_____	_____	_____
The Depart- ment Heads	_____	_____	_____	_____	_____
Unit Managers and Other Super- visory Personnel	_____	_____	_____	_____	_____
Nonsupervisory Employees	_____	_____	_____	_____	_____

7. In general, how much say or influence does the Governing Body (Board of Directors, Trustees) have on what the following groups do in your hospital? (Check one for each group)

	Little or no influ- ence	Some influ- ence	Quite a bit of influ- ence	A great deal of influ- ence	A very great deal of influ- ence 5
	1	2	3	4	5
Governing Body (Board of Direc- tors, Trustees)	_____	_____	_____	_____	_____
Your Hospital Administrator (Executive Di- rector, etc.)	_____	_____	_____	_____	_____
The Directors of Various Ser- vices	_____	_____	_____	_____	_____
The Depart- ment Heads	_____	_____	_____	_____	_____
Unit Managers and Other Super- visory Personnel	_____	_____	_____	_____	_____

Questionnaire Form A, Page 4
Question 7 continued

	Little or no influ- ence	Some influ- ence	Quite a bit of influ- ence	A great deal of influ- ence	A very great deal of influ- ence
	1	2	3	4	5
Nonsupervisory Employees	_____	_____	_____	_____	_____

8. In general, how much say or influence does your Hospital Administrator have on what the following groups do in your hospital? (Check one for each group)

	Little or no influ- ence	Some influ- ence	Quite a bit of influ- ence	A great deal of influ- ence	A very great deal of influ- ence
	1	2	3	4	5
Governing Body (Board of Direc- tors, Trustees)	_____	_____	_____	_____	_____
Your Hospital Administrator (Executive Di- rector, etc.)	_____	_____	_____	_____	_____
The Directors of Various Ser- vices	_____	_____	_____	_____	_____
The Depart- ment Heads	_____	_____	_____	_____	_____
Unit Managers and Other Super- visory Personnel	_____	_____	_____	_____	_____
Nonsupervisory Employees	_____	_____	_____	_____	_____

Questionnaire Form A, Page 5

9. In general, how much say or influence do the Directors of Various Services have on what the following groups do in your hospital? (Check one for each group)

	Little or no influ- ence	Some influ- ence	Quite a bit of influ- ence	A great deal of influ- ence	A very great deal of influ- ence
	1	2	3	4	5
Governing Body (Board of Direc- tors, Trustees)	_____	_____	_____	_____	_____
Your Hospital Administrator (Executive Di- rector, etc.)	_____	_____	_____	_____	_____
The Directors of Various Ser- vices	_____	_____	_____	_____	_____
The Depart- ment Heads	_____	_____	_____	_____	_____
Unit Managers and Other Super- visory Personnel	_____	_____	_____	_____	_____
Nonsupervisory Employees	_____	_____	_____	_____	_____

10. In general, how much say or influence do the Department Heads have on what the following groups do in your hospital? (Check one for each group)

	Little or no influ- ence	Some influ- ence	Quite a bit of influ- ence	A great deal of influ- ence	A very great deal of influ- ence
	1	2	3	4	5
Governing Body (Board of Direc- tors, Trustees)	_____	_____	_____	_____	_____

Questionnaire Form A, Page 6
Question 10 continued

	Little or no influ- ence	Some influ- ence	Quite a bit of influ- ence	A great deal of influ- ence	A very great deal of influ- ence
	1	2	3	4	5
Your Hospital Administrator (Executive Di- rector, etc.)	_____	_____	_____	_____	_____
The Directors of Various Ser- vices	_____	_____	_____	_____	_____
The Depart- ment Heads	_____	_____	_____	_____	_____
Unit Managers and Other Super- visory Personnel	_____	_____	_____	_____	_____
Nonsupervisory Employees	_____	_____	_____	_____	_____

11. In general, how much say or influence do the Unit Managers and Other Supervisory Personnel have on what the following groups do in your hospital? (Check one for each group)

	Little or no influ- ence	Some influ- ence	Quite a bit of influ- ence	A great deal of influ- ence	A very great deal of influ- ence
	1	2	3	4	5
Governing Body (Board of Direc- tors, Trustees)	_____	_____	_____	_____	_____
Your Hospital Administrator (Executive Di- rector, etc.)	_____	_____	_____	_____	_____
The Directors of Various Ser- vices	_____	_____	_____	_____	_____

Questionnaire Form A, Page 7
Question 11 continued

	Little or no influ- ence	Some influ- ence	Quite a bit of influ- ence	A great deal of influ- ence	A very great deal of influ- ence 5
	1	2	3	4	5
The Depart- ment Heads	_____	_____	_____	_____	_____
Unit Managers and Other Super- visory Personnel	_____	_____	_____	_____	_____
Nonsupervisory Employees	_____	_____	_____	_____	_____

12. In general, how much say or influence do the Nonsuper-
visory Employees have on what the following groups do
in your hospital? (Check one for each group)

	Little or no influ- ence	Some influ- ence	Quite a bit of influ- ence	A great deal of influ- ence	A very great deal of influ- ence 5
	1	2	3	4	5
Governing Body (Board of Direc- tors, Trustees)	_____	_____	_____	_____	_____
Your Hospital Administrator (Executive Di- rector, etc.)	_____	_____	_____	_____	_____
The Directors of Various Ser- vices	_____	_____	_____	_____	_____
The Depart- ment Heads	_____	_____	_____	_____	_____
Unit Managers and Other Super- visory Personnel	_____	_____	_____	_____	_____
Nonsupervisory Employees	_____	_____	_____	_____	_____

Questionnaire Form A, Page 8

13. In general, how much influence do you think the Medical Staff has on how your hospital functions - on how it is run and how it operates? (Check one)

- (1) Little or no influence ___
 (2) Some influence ___
 (3) Quite a bit of influence ___
 (4) A great deal of influence ___
 (5) A very great deal of influence ___

14. In general, how much influence do you think the Medical Staff should have on how your hospital functions - on how it is run and how it operates? (Check one)

- (1) Little or no influence ___
 (2) Some influence ___
 (3) Quite a bit of influence ___
 (4) A great deal of influence ___
 (5) A very great deal of influence ___

15. In general how much say or influence does the Medical Staff have on what the following groups do in your hospital? (Check one for each group)

	Little or no influ- ence	Some influ- ence	Quite a bit of influ- ence	A great deal of influ- ence	A very great deal of influ- ence
	1	2	3	4	5
Governing Body (Board of Direc- tors, Trustees)	_____	_____	_____	_____	_____
Your Hospital Administrator (Executive Di- rector, etc.)	_____	_____	_____	_____	_____
The Directors of Various Ser- vices	_____	_____	_____	_____	_____
The Depart- ment Heads	_____	_____	_____	_____	_____
Unit Managers and Other Super- visory Personnel	_____	_____	_____	_____	_____

Questionnaire Form A, Page 9
Question 15 continued

	Little or no influ- ence	Some influ- ence	Quite a bit of influ- ence	A great deal of influ- ence	A very great deal of influ- ence
	1	2	3	4	5
Nonsupervisory Employees	_____	_____	_____	_____	_____

16. In general, how much say or influence do the following groups have on what the Medical Staff does in your hospital? (Check one for each group)

	Little or no influ- ence	Some influ- ence	Quite a bit of influ- ence	A great deal of influ- ence	A very great deal of influ- ence
	1	2	3	4	5
Governing Body (Board of Direc- tors, Trustees)	_____	_____	_____	_____	_____
Your Hospital Administrator (Executive Di- rector, etc.)	_____	_____	_____	_____	_____
The Directors of Various Ser- vices	_____	_____	_____	_____	_____
The Depart- ment Heads	_____	_____	_____	_____	_____
Unit Managers and Other Super- visory Personnel	_____	_____	_____	_____	_____
Nonsupervisory Employees	_____	_____	_____	_____	_____

17. How good is your immediate supervisor in planning, organizing and scheduling work ahead of time? (Check one)

- (1) He/She is excellent _____
(2) He/She is quite good _____

Questionnaire Form A, Page 10
Question 17 continued

- (3) He/She is good ____
- (4) He/She is poor ____
- (5) He/She is very poor ____
- (6) I don't know ____

18. To what extent do you have confidence and trust in the supervisors in your hospital? (Check one)

- (1) To a very great extent ____
- (2) To a great extent ____
- (3) To an average extent ____
- (4) Very little ____
- (5) I don't trust them at all ____
- (6) Undecided ____

19. All things considered, how satisfied are you with the way your immediate supervisor is doing his/her job? (Check one)

- (1) Very dissatisfied ____
- (2) Somewhat dissatisfied ____
- (3) A Little satisfied ____
- (4) Fairly satisfied ____
- (5) Very satisfied ____
- (6) Undecided ____

20. Listed below are five reasons generally given by people when they are asked why they do the things their superiors suggest or want them to do. Please read all five carefully. Then number them according to their importance to you as reasons for doing the things your immediate supervisor suggests or wants you to do. Give rank "1" to the most important factor, "2" to the next, etc. "I do the things my immediate supervisor suggests or wants me to do because:

- ___ A. "I admire him for his personal qualities and want to act in a way that merits his respect and admiration;"
- ___ B. "I respect his competence and good judgment about things with which he is more experienced than I;"
- ___ C. "He can give special help and benefits to those who cooperate;"
- ___ D. "He can apply pressure or penalize those who do not cooperate;"
- ___ E. "He has a legitimate right, considering his position, to expect that his suggestions will be carried out."

Questionnaire Form A, Page 11

21. My immediate supervisor is: (Check one)

- (1) The Hospital Administrator ____
- (2) A Director of a Service ____
- (3) A Department Head ____
- (4) A Unit Manager ____
- (5) Among the other supervisory category ____

Thank you for your time and your kind cooperation in this research project.

B.H. Corum
Doctoral Candidate
University of Florida

APPENDIX C

TABLE 21

Responses as to Amount of Perceived Control By Hierarchical Level - Church Affiliated Hospital

Response Group	Hierarchical Level	Amount of Control				
		Little or no control	Some control	Quite a bit of control	A great deal of control	A very great deal of control
		1	2	3	4	5
MANAGERIAL						
	Governing Body	1	1	6	8	28
	Administrator	-	1	2	17	24
	Directors of Various Services	-	11	20	11	2
	Department Heads	1	20	17	4	2
	First Line Supervisors	12	25	6	1	-
	Nonsupervisory Employees	20	20	3	1	-
SUPERVISORY						
	Governing Body	1	2	6	16	25
	Administrator	1	-	1	24	24
	Directors of Various Services	2	9	18	15	6

TABLE 21 continued

Response Group	Hierarchical Level	Amount of Control				
		Little or no control	Some control	Quite a bit of control	A great deal of control	A very great deal of control
		1	2	3	4	5
	Department Heads	2	14	19	8	7
	First Line Supervisors	22	17	9	2	-
	Nonsupervisory Employees	29	15	5	1	-
NONSUPERVISORY	Governing Body	1	4	7	19	17
	Administrator	-	-	7	16	25
	Directors of Various Services	-	8	21	16	3
	Department Heads	3	14	23	6	2
	First Line Supervisors	15	23	8	2	-
	Nonsupervisory Employees	33	13	2	-	-

TABLE 21 continued

Response Group	Hierarchical Level	Amount of Control				
		Little or no control	Some control	Quite a bit of control	A great deal of control	A very great deal of control
		1	2	3	4	5
MEDICAL STAFF						
	Governing Body	-	2	5	12	26
	Administrator	-	-	5	18	22
	Directors of Various Services	1	8	20	12	4
	Department Heads	3	15	18	7	2
	First Line Supervisors	15	23	4	3	-
	Nonsupervisory Employees	30	13	1	1	-
TOTALS						
	Governing Body	3	9	24	55	96
	Administrator	1	1	15	75	95
	Directors of Various Services	3	36	79	54	15

TABLE 21 continued

Response Group	Hierarchical Level	Amount of Control				
		Little or no control	Some control	Quite a bit of control	A great deal of control	A very great deal of control
		1	2	3	4	5
	Department Heads	9	63	77	25	13
	First Line Supervisors	64	88	27	8	-
	Nonsupervisory Employees	112	61	11	3	-

SOURCE: Respondents from the church affiliated hospital. The research question to which these respondents replied is identified as question number 5 on Questionnaire Form A, which is included in Appendix B.

TABLE 22.

Responses as to Amount of Perceived Control By Hierarchical Level - Nonchurch Affiliated Hospital

Response Group	Amount of Control				
	Little or no control	Some control	Quite a bit of control	A great deal of control	A very great deal of control
	1	2	3	4	5
MANAGERIAL					
Governing Body	-	-	6	12	28
Administrator	-	-	5	13	28
Directors of Various Services	-	10	22	10	4
Department Heads	4	18	17	5	2
First Line Supervisors	15	23	6	1	1
Nonsupervisory Employees	18	23	3	1	1
SUPERVISORY					
Governing Body	-	-	7	16	25
Administrator	-	-	3	17	26
Directors of Various Services	-	10	25	9	4

TABLE 22 continued

Response Group	Hierarchical Level	Amount of Control				
		Little or no control	Some control	Quite a bit of control	A great deal of control	A very great deal of control
		1	2	3	4	5
	Department Heads	-	26	18	2	2
	First Line Supervisors	13	27	6	2	-
	Nonsupervisory Employees	30	13	5	-	-
	Governing Body	3	-	3	22	22
	Administrator	-	-	6	19	25
	Directors of Various Services	1	10	17	19	3
	Department Heads	1	16	21	7	5
	First Line Supervisors	10	28	4	6	2
	Nonsupervisory Employees	32	15	3	-	-

NONSUPERVISORY

TABLE 22 continued

Response Group	Hierarchical Level	Amount of Control				
		Little or no control	Some control	Quite a bit of control	A great deal of control	A very great deal of control
		1	2	3	4	5
MEDICAL STAFF						
	Governing Body	-	4	7	12	24
	Administrator	1	1	6	20	19
	Directors of Various Services	4	8	21	11	3
	Department Heads	4	20	14	6	3
	First Line Supervisors	11	23	8	2	3
	Nonsupervisory Employees	25	18	2	-	2
TOTALS						
	Governing Body	3	4	23	62	99
	Administrator	1	1	20	69	100
	Directors of Various Services	5	38	85	49	14

TABLE 22 continued

Response Group	Hierarchical Level	Amount of Control				
		Little or no control	Some control	Quite a bit of control	A great deal of control	A very great deal of control
		1	2	3	4	5
	Department Heads	9	80	70	20	12
	First Line Supervisors	49	101	24	11	6
	Nonsupervisory Employees	105	69	13	1	3

SOURCE: Respondents from the nonchurch affiliated hospital. The research question to which these respondents replied is identified as question number 5 on Questionnaire Form A, which is included in Appendix B.

TABLE 23

Responses as to Amount of Desired Control By Hierarchical Level - Church Affiliated Hospital

Response Group	Hierarchical Level	Amount of Control				
		Little or no control	Some control	Quite a bit of control	A great deal of control	A very great deal of control
		1	2	3	4	5
MANAGERIAL						
	Governing Body	1	3	8	9	23
	Administrator	-	1	6	13	24
	Directors of Various Services	1	9	15	15	4
	Department Heads	-	7	22	10	5
	First Line Supervisors	6	21	14	2	1
	Nonsupervisory Employees	8	26	8	2	-
SUPERVISORY						
	Governing Body	-	5	5	23	17
	Administrator	-	-	2	23	25
	Directors of Various Services	2	7	15	16	10

TABLE 23 continued

Response Group	Hierarchical Level	Amount of Control				
		Little or no control	Some control	Quite a bit of control	A great deal of control	A very great deal of control
		1	2	3	4	5
	Department Heads	-	5	18	16	11
	First Line Supervisors	2	22	18	6	2
	Nonsupervisory Employees	4	31	12	3	-
	Governing Body	2	6	9	18	13
	Administrator	-	2	8	15	23
	Directors of Various Services	-	4	20	17	7
	Department Heads	-	9	25	10	4
	First Line Supervisors	4	18	22	4	-
	Nonsupervisory Employees	8	26	8	5	1

NONSUPERVISORY

TABLE 23 continued

Response Group	Hierarchical Level	Amount of Control				
		Little or no control	Some control	Quite a bit of control	A great deal of control	A very great deal of control
		1	2	3	4	5
MEDICAL STAFF						
	Governing Body	-	4	8	12	21
	Administrator	-	-	7	18	20
	Directors of Various Services	2	2	13	19	9
	Department Heads	1	5	17	15	7
	First Line Supervisors	2	19	16	6	2
	Nonsupervisory Employees	4	30	6	3	2
TOTALS						
	Governing Body	3	18	30	62	74
	Administrator	-	3	23	69	92
	Directors of Various Services	5	22	63	67	30

TABLE 23 continued

Response Group	Hierarchical Level	Amount of Control				
		Little or no control	Some control	Quite a bit of control	A great deal of control	A very great deal of control
		1	2	3	4	5
	Department Heads	1	26	82	51	27
	First Line Supervisors	14	80	70	18	5
	Nonsupervisory Employees	24	113	34	13	3

SOURCE: Respondents from the church affiliated hospital. The research question to which these respondents replied is identified as question number 6 on Questionnaire Form A, which is included in Appendix B.

TABLE 24

Responses as to Amount of Desired Control By Hierarchical Level - Nonchurch Affiliated Hospital

Response Hierarchical Level	Amount of Control				
	Little or no control	Some control	Quite a bit of control	A great deal of control	A very great deal of control
	1	2	3	4	5
MANAGERIAL					
Governing Body	1	2	5	13	25
Administrator	-	-	2	21	23
Directors of Various Services	-	2	18	17	9
Department Heads	1	6	20	11	8
First Line Supervisors	3	21	14	5	3
Nonsupervisory Employees	8	25	7	3	3
SUPERVISORY					
Governing Body	1	7	10	14	16
Administrator	-	-	4	18	26
Directors of Various Services	-	5	20	16	7

TABLE 24 continued

Response Group	Hierarchical Level	Amount of Control				
		Little or no control	Some control	Quite a bit of control	A great deal of control	A very great deal of control
		1	2	3	4	5
	Department Heads	-	5	29	10	4
	First Line Supervisors	1	21	21	4	1
	Nonsupervisory Employees	6	29	9	3	1
NONSUPERVISORY						
	Governing Body	3	3	11	14	19
	Administrator	-	1	10	19	20
	Directors of Various Services	-	8	17	18	7
	Department Heads	-	9	23	14	4
	First Line Supervisors	2	23	11	8	6
	Nonsupervisory Employees	5	31	8	2	4

TABLE 24 continued

Response Group	Hierarchical Level	Amount of Control				
		Little or no control	Some control	Quite a bit of control	A great deal of control	A very great deal of control
		1	2	3	4	5
MEDICAL STAFF						
	Governing Body	1	7	5	12	22
	Administrator	-	6	5	15	21
	Directors of Various Services	1	10	18	10	8
	Department Heads	-	12	22	12	1
	First Line Supervisors	2	25	13	6	1
	Nonsupervisory Employees	10	27	7	2	1
TOTALS						
	Governing Body	6	19	31	53	82
	Administrator	-	7	21	73	90
	Directors of Various Services	1	25	73	61	31

TABLE 24 continued

Response Group	Hierarchical Level	Amount of Control				
		Little or no control	Some control	Quite a bit of control	A great deal of control	A very great deal of control
		1	2	3	4	5
	Department Heads	1	32	94	47	17
	First Line Supervisors	8	90	59	23	11
	Nonsupervisory Employees	29	112	31	10	9

SOURCE: Respondents from the nonchurch affiliated hospital. The research question to which these respondents replied is identified as question number 6 on Questionnaire Form A, which is included in Appendix B.

TABLE 25

Response Group Means - Church Affiliated Hospital

Response Group	Subjects	N	Mean
Managerial (1)	44	528	3.1402
Supervisory (2)	50	600	3.2500
Nonsupervisory (3)	48	576	3.1024
Medical Staff (4)	45	540	3.2204

SOURCE: Original data.

TABLE 26

Mean For Each Question By Response Group - Church Affiliated Hospital

Response Group	N	Question 5	Question 6
Managerial (1)	264	3.0303	3.2500
Supervisory (2)	300	3.0633	3.4367
Nonsupervisory (3)	288	2.9549	3.2500
Medical Staff (4)	270	3.0074	3.4333
Mean	1122	3.0143	3.3440

Variance at a given level of Question = 1.83304+000.
Degrees of freedom = 261.0.

TABLE 27
Response Group and Hierarchical Level Means - Church Affiliated Hospital

Response Group	N	Hierarchical Levels					
		GB	HA	DS	DH	FS	NS
Managerial (1)	88	4.2614	4.4091	3.1818	2.9886	2.1250	1.8750
Supervisory (2)	100	4.1400	4.4300	3.3900	3.3700	2.2500	1.9200
Nonsupervisory (3)	96	3.8437	4.3021	3.4271	2.9896	2.2396	1.8125
Medical Staff (4)	90	4.2444	4.3333	3.4556	3.1333	2.3000	1.8556
Mean	374	4.1176	4.3690	3.3663	3.1257	2.2299	1.8663

Variance at a given level of hierarchical level = 1.27729×1000 . Degrees of freedom = 801.4.

TABLE 28

Question and Hierarchical Level Means -Church Affiliated Hospital

Question	Hierarchical Levels					
	GB	HA	DS	DH	FS	NS
Number 5	4.2406	4.4011	3.2246	2.8396	1.8877	1.4920
Number 6	3.9947	4.3369	3.5080	3.4118	2.5722	2.2406

Standard deviation of difference between question means for a given hierarchical level = 6.01473-002. Degrees of freedom = 1018.7.

Standard deviation of difference between hierarchical level means for a given question = 7.82640-002. Degrees of freedom = 1483.7.

TABLE 29

Response Group and Question and Hierarchical Level Means - Church Affiliated Hospital

Response Group	N	Question	Hierarchical Levels					
			GB	HA	DS	DH	FS	NS
Managerial (1)	44	5	4.3864	4.4545	3.0909	2.6818	1.9091	1.6591
Supervisory (2)	50	5	4.2400	4.4000	3.2800	3.0800	1.8200	1.5600
Nonsupervisory (3)	48	5	3.9792	4.3750	3.2917	2.7917	1.9375	1.3542
Medical Staff (4)	45	5	4.3778	4.3778	3.2222	2.7778	1.8889	1.4000
(1)	44	6	4.1364	4.3636	3.2727	3.2955	2.3409	2.0909
(2)	50	6	4.0400	4.4600	3.5000	3.6600	2.6800	2.2800
(3)	48	6	3.7083	4.2292	3.5625	3.1875	2.5417	2.2708
(4)	45	6	4.1111	4.2889	3.6889	3.4889	2.7111	2.3111

Variance at a given question - hierarchical level cell = 8.28878-001.
 Degrees of freedom = 1226.7.

TABLE 30

Response Group Means - Nonchurch Affiliated Hospital

Response Group	Subjects	N	Mean
Managerial (1)	46	552	3.2754
Supervisory (2)	48	576	3.1632
Nonsupervisory (3)	50	600	3.2067
Medical Staff (4)	47	564	3.0798

SOURCE: Original data.

TABLE 31

Mean For Each Question By Response Group - Nonchurch
Affiliated Hospital

Response Group	N	Question 5	Question 6
Managerial (1)	276	3.0797	3.4710
Supervisory (2)	288	3.0069	3.3194
Nonsupervisory (3)	300	3.0800	3.3333
Medical Staff (4)	282	2.9823	3.1773
Mean	1146	3.0375	3.3246

Variance at a given level of question = 2.35501+000.
Degrees of freedom = 285.4.

TABLE 32

Response Group and Hierarchical Level Means - Nonchurch Affiliated Hospital

Response Group	N	GB	HA	Hierarchical Levels				NS
				DS	DH	FS	NS	
Managerial (1)	92	4.3804	4.4783	3.4457	3.0217	2.2826	2.0435	
Supervisory (2)	96	4.0729	4.4896	3.3333	2.9271	2.2917	1.8646	
Nonsupervisory (3)	100	4.0300	4.2700	3.3700	3.1200	2.5500	1.9000	
Medical Staff (4)	94	4.0957	4.1277	3.1596	2.8511	2.3830	1.8617	
Mean	382	4.1414	4.3403	3.3272	2.9817	2.3796	1.9162	

Variance at a given level of hierarchical level = 1.31889+000, Degrees of freedom = 702.6.

TABLE 33
 Question and Hierarchical Level Means - Nonchurch Affiliated Hospital

Question	Hierarchical Levels					
	GB	HA	DS	DH	FS	NS
Number 5	4.3089	4.3927	3.1518	2.7173	2.0785	1.5759
Number 6	3.9738	4.2880	3.5026	3.2461	2.6806	2.2565

Standard deviation of difference between question means for a given hierarchical level = 6.37438-002, Degrees of freedom = 941.7.

Standard deviation of difference between hierarchical level means for a given question = 7.59546-002, Degrees of freedom = 1574.2.

TABLE 34

Response Group and Question and Hierarchical Level Means - Nonchurch Affiliated Hospital

Response Group	N	Question	GB	HA	DS	Hierarchical Levels			NS
						DH	FS	NS	
Managerial (1)	46	5	4.4783	4.5000	3.1739	2.6304	1.9130	1.7826	
Supervisory (2)	48	5	4.3750	4.5208	3.1458	2.5833	1.9375	1.4792	
Nonsupervisory (3)	50	5	4.2000	4.3800	3.2600	2.9800	2.2400	1.4200	
Medical Staff (4)	47	5	4.1915	4.1702	3.0213	2.6596	2.2128	1.6383	
(1)	46	6	4.2826	4.4565	3.7174	3.4130	2.6522	2.3043	
(2)	48	6	3.7708	4.4583	3.5208	3.2708	2.6458	2.2500	
(3)	50	6	3.8600	4.1600	3.4800	3.2600	2.8600	2.3800	
(4)	47	6	4.0000	4.0851	3.2979	3.0426	2.5532	2.0851	

Variance at a given question - hierarchical level cell = 8.91434-001.
 Degrees of freedom = 1115.6.

TABLE 35

Combined Responses as to the Amount of Active Control
By Hierarchical Level - Church Affiliated Hospital

Control Exercised by the Governing Body over:	Amount of Control				
	Little or no control	Some control	Quite a bit of control	A great deal of control	A very great deal of control
	1	2	3	4	5
Governing Body	2	9	24	58	94
Administrator	-	6	21	73	87
Directors of Various Services	1	35	58	66	27
Department Heads	5	45	55	57	25
First Line Supervisors	29	57	54	32	15
Nonsupervisory Employees	54	45	45	29	14
TOTALS	91	197	257	315	262

SOURCE: Respondents from the church affiliated hospital. The research question to which these respondents replied is identified as question number 7 on Questionnaire Form A, which is included in Appendix B.

TABLE 36

Combined Responses as to the Amount of Active Control
By Hierarchical Level - Church Affiliated Hospital

Control Exercised by the Administrator over:	Amount of Control				
	Little or no control	Some control	Quite a bit of control	A great deal of control	A very great deal of control
	1	2	3	4	5
Governing Body	2	14	56	72	43
Administrator	-	15	42	57	73
Directors of Various Services	1	12	45	72	57
Department Heads	3	10	42	66	66
First Line Supervisors	9	23	33	68	54
Nonsupervisory Employees	14	20	36	66	51
TOTALS	29	94	254	401	344

SOURCE: Respondents from the church affiliated hospital. The research question to which these respondents replied is identified as question number 8 on Questionnaire Form A, which is included in Appendix B.

TABLE 37

Combined Responses as to the Amount of Active Control
By Hierarchical Level - Church Affiliated Hospital

Control Exer- cised by the Directors of Various Ser- vices over:	Amount of Control				
	Little or no control	Some control	Quite a bit of control	A great deal of control	A very great deal of control
	1	2	3	4	5
Governing Body	31	86	41	20	9
Administra- tor	22	72	50	28	15
Directors of Various Ser- vices	7	74	53	26	27
Department Heads	12	53	75	31	16
First Line Supervisors	22	53	66	31	15
Nonsuper- visory Em- ployees	31	51	54	30	21
TOTALS	125	389	339	166	103

SOURCE: Respondents from the church affiliated hospital. The research question to which these respondents replied is identified as question number 9 on Questionnaire Form A, which is included in Appendix B.

TABLE 38

Combined Responses as to the Amount of Active Control
By Hierarchical Level - Church Affiliated Hospital

Control Exer- cised by the Department Heads over:	Amount of Control				
	Little or no control	Some control	Quite a bit of control	A great deal of control	A very great deal of control
	1	2	3	4	5
Governing Body	70	82	25	8	2
Administra- tor	38	91	36	18	4
Directors of Various Ser- vices	31	96	44	11	5
Department Heads	17	89	41	22	18
First Line Supervisors	15	51	66	35	20
Nonsuper- visory Em- ployees	20	40	66	29	32
TOTALS	191	449	278	123	81

SOURCE: Respondents from the church affiliated hospital. The research question to which these respondents replied is identified as question number 10 on Questionnaire Form A, which is included in Appendix B.

TABLE 39

Combined Responses as to the Amount of Active Control
By Hierarchical Level - Church Affiliated Hospital

Control Exer- cised by the First Line Supervisors Over:	Amount of Control				
	Little or no control	Some control	Quite a bit of control	A great deal of control	A very great deal of control
	1	2	3	4	5
Governing Body	124	54	4	3	2
Administra- tor	93	77	10	4	3
Directors of Various Ser- vices	80	92	12	2	1
Department Heads	51	109	22	3	2
First Line Supervisors	36	106	23	7	15
Nonsuper- visory Em- ployees	28	66	65	13	15
TOTALS	412	504	136	32	38

SOURCE: Respondents from the church affiliated hospital. The research question to which these respondents replied is identified as question number 11 on Questionnaire Form A, which is included in Appendix B.

TABLE 40

Combined Responses as to the Amount of Active Control
By Hierarchical Level - Church Affiliated Hospital

Control Exercised by Non-supervisory Employees over:	Amount of Control				
	Little or no control	Some control	Quite a bit of control	A great deal of control	A very great deal of control
	1	2	3	4	5
Governing Body	159	21	4	1	2
Administrator	128	49	5	4	1
Directors of Various Services	126	50	10	1	-
Department Heads	96	72	15	4	-
First Line Supervisors	89	81	14	3	-
Nonsupervisory Employees	83	81	15	1	7
TOTALS	681	354	63	14	10

SOURCE: Respondents from the church affiliated hospital. The research question to which these respondents replied is identified as question number 12 on Questionnaire Form A, which is included in Appendix B.

TABLE 41

Combined Responses as to the Amount of Passive Control By Hierarchical Level - Church Affiliated Hospital

Hierarchical Level	Amount of Control Subjected to*				
	Little or no control	Some control	Quite a bit of control	A great deal of control	A very great deal of control
	1	2	3	4	5
Governing Body	388	266	154	162	152
Administrator	281	310	164	184	183
Directors of Various Services	246	359	222	178	117
Department Heads	184	378	250	183	127
First Line Supervisors	200	371	256	176	119
Nonsupervisory Employees	230	303	281	168	140

SOURCE: Respondents from the church affiliated hospital. Information was consolidated from the responses to the research questions which are identified as questions 7-12 on Questionnaire Form A, which is included in Appendix B.

*Total responses by hierarchical level. These totals represent the extent to which each level is subjected to control within the organization, as perceived by all the respondents from that organization. Linear Total by hierarchical level is 1122 (number of respondents 187 X number of hierarchical levels 6). The mean is based on this number (1122).

TABLE 42

Combined Responses as to the Amount of Active Control
By Hierarchical Level - Nonchurch Affiliated Hospital

Control Exercised by the Governing Body over:	Amount of Control				
	Little or no control	Some control	Quite a bit of control	A great deal of control	A very great deal of control
	1	2	3	4	5
Governing Body	2	4	19	49	117
Administrator	-	5	34	62	90
Directors of Various Services	7	50	49	53	32
Department Heads	9	58	47	49	28
First Line Supervisors	39	65	36	26	25
Nonsupervisory Employees	75	47	26	23	20
TOTALS	132	229	211	262	312

SOURCE: Respondents from the nonchurch affiliated hospital. The research question to which these respondents replied is identified as question number 7 on Questionnaire Form A, which is included in Appendix B.

TABLE 43

Combined Responses as to the Amount of Active Control
By Hierarchical Level - Nonchurch Affiliated Hospital

Control Exercised by the Administrator over:	Amount of Control				
	Little or no control	Some control	Quite a bit of control	A great deal of control	A very great deal of control
	1	2	3	4	5
Governing Body	5	31	43	72	40
Administrator	-	11	40	46	94
Directors of Various Services	-	14	39	59	79
Department Heads	-	17	46	52	76
First Line Supervisors	3	34	42	55	57
Nonsupervisory Employees	20	33	34	42	62
TOTALS	28	140	244	326	408

SOURCE: Respondents from the nonchurch affiliated hospital. The research question to which these respondents replied is identified as question number 8 on Questionnaire Form A, which is included in Appendix B.

TABLE 44

Combined Responses as to the Amount of Active Control
By Hierarchical Level - Nonchurch Affiliated Hospital

Control Exercised by the Directors of Various Services over:	Amount of Control				
	Little or no control	Some control	Quite a bit of control	A great deal of control	A very great deal of control
	1	2	3	4	5
Governing Body	45	84	39	9	14
Administrator	14	88	47	29	13
Directors of Various Services	8	61	58	27	37
Department Heads	8	63	54	42	24
First Line Supervisors	17	66	46	36	26
Nonsupervisory Employees	30	59	40	35	27
TOTALS	122	421	284	178	141

SOURCE: Respondents from the nonchurch affiliated hospital. The research question to which these respondents replied is identified as question number 9 on Questionnaire Form A, which is included in Appendix B.

TABLE 45

Combined Responses as to the Amount of Active Control
By Hierarchical Level - Nonchurch Affiliated Hospital

Control Exercised by the Department Heads over:	Amount of Control				
	Little or no control	Some control	Quite a bit of control	A great deal of control	A very great deal of control
	1	2	3	4	5
Governing Body	90	58	30	7	6
Administra- tor	44	76	47	17	7
Directors of Various Ser- vices	28	83	62	13	5
Department Heads	11	72	57	19	32
First Line Supervisors	11	43	63	46	28
Nonsuper- visory Em- ployees	20	38	50	39	44
TOTALS	204	370	309	141	122

SOURCE: Respondents from the nonchurch affiliated hospital. The research question to which these respondents replied is identified as question number 10 on Questionnaire Form A, which is included in Appendix B.

TABLE 46

Combined Responses as to the Amount of Active Control
By Hierarchical Level - Nonchurch Affiliated Hospital

Control Exer- cised by First Line Super- visors over:	Amount of Control				
	Little or no control	Some control	Quite a bit of control	A great deal of control	A very great deal of control
	1	2	3	4	5
Governing Body	121	60	6	1	3
Administra- tor	89	86	11	3	2
Directors of Various Ser- vices	66	101	17	5	2
Department Heads	39	110	30	9	3
First Line Supervisors	29	95	23	10	34
Nonsuper- visory Em- ployees	30	53	46	33	29
TOTALS	374	505	133	61	73

SOURCE: Respondents from the nonchurch affiliated hospital. The research question to which these respondents replied is identified as question number 11 on Questionnaire Form A, which is included in Appendix B.

TABLE 47

Combined Responses as to the Amount of Active Control
By Hierarchical Level - Nonchurch Affiliated Hospital

Control Exercised by the Nonsuper- visory Em- ployees over:	Amount of Control				
	Little or no control	Some control	Quite a bit of control	A great deal of control	A very great deal of control
	1	2	3	4	5
Governing Body	159	26	4	-	2
Administra- tor	122	57	7	2	3
Directors of Various Ser- vices	100	78	11	1	1
Department Heads	74	86	25	5	1
First Line Supervisors	65	93	27	2	4
Nonsuper- visory Em- ployees	64	69	24	9	25
TOTALS	584	409	98	19	36

SOURCE: Respondents from the nonchurch affiliated hospital. The research question to which these respondents replied is identified as question number 12 on Questionnaire Form A, which is included in Appendix B.

TABLE 48

Combined Responses as to the Amount of Passive Control By Hierarchical Level - Nonchurch Affiliated Hospital

Hierarchical Level	Amount of Control Subjected to*				
	Little or no control	Some control	Quite a bit of control	A great deal of control	A very great deal of control
	1	2	3	4	5
Governing Body	422	263	141	138	182
Administrator	269	323	186	159	209
Directors of Various Services	209	387	236	158	156
Department Heads	141	406	259	176	164
First Line Supervisors	164	396	237	175	174
Nonsupervisory Employees	239	299	220	181	207

SOURCE: Respondents from the nonchurch affiliated hospital. Information was consolidated from the responses to the research questions which are identified as questions 7-12 on Questionnaire Form A, which is included in Appendix B.

*Total responses by hierarchical level. These totals represent the extent to which each level is subjected to control within the organization, as perceived by all the respondents from that organization. Linear total by hierarchical level is 1146 (Number of respondents 191 X number of hierarchical levels 6). The mean is based upon this number (1146).

TABLE 49

Response Group Means - Church Affiliated Hospital

Response Group	Subjects	N	Mean
Managerial (1)	44	1584	2.7355
Supervisory (2)	50	1800	2.7206
Nonsupervisory (3)	48	1728	2.4502
Medical Staff (4)	45	1620	2.7265

SOURCE: Original data.

TABLE 50

Mean For Each Question by Response Group - Church Affiliated Hospital

Response Group	N	Question 7	Question 8	Question 9	Question 10	Question 11	Question 12
Managerial (1)	264	3.4470	4.1477	2.7462	2.5038	1.9129	1.6553
Supervisory (2)	300	3.4633	3.8333	2.7767	2.7200	1.8867	1.6433
Nonsupervisory (3)	288	3.2292	3.5278	2.6875	2.2569	1.7153	1.2847
Medical Staff (4)	270	3.5074	3.8593	2.8407	2.5778	2.1519	1.4222
Mean	1122	3.4100	3.8351	2.7620	2.5160	1.9127	1.5009

Variance at a given level of question = 3.38102+000. Degrees of freedom = 816.8.

TABLE 51
Response Group and Hierarchical Level Means - Church Affiliated Hospital

Response Group	N	Hierarchical Levels					
		GB	HA	DS	DH	FS	NS
Managerial (1)	264	2.5682	2.8598	2.6326	2.7955	2.8030	2.7538
Supervisory (2)	300	2.5800	2.7500	2.6833	2.8267	2.7100	2.7733
Nonsupervisory (3)	288	2.3056	2.5486	2.4306	2.4792	2.4410	2.4965
Medical Staff (4)	270	2.4963	2.7037	2.6926	2.8148	2.7889	2.8630
Mean	1122	2.4866	2.7130	2.6087	2.7273	2.6818	2.7193

Variance at a given level of hierarchical level = 2.06944+000. Degrees of freedom = 445.7.

TABLE 52

Question and Hierarchical Level Means - Church Affiliated Hospital

Question	Hierarchical Levels					
	GB	HA	DS	OH	FS	NS
Number 7	4.2460	4.2888	3.4439	3.2781	2.7166	2.4866
Number 8	3.7487	4.0053	3.9198	3.9733	3.7219	3.6417
Number 9	2.4118	2.6898	2.9572	2.9251	2.8075	2.7807
Number 10	1.8770	2.2460	2.2674	2.6684	2.9679	3.0695
Number 11	1.4225	1.6471	1.6738	1.9091	2.2460	2.5775
Number 12	1.2139	1.4011	1.3904	1.6096	1.6310	1.7594

Standard deviation of difference between question means for a given hierarchical level = 8.78757-002. Degrees of freedom = 3013.8.

Standard deviation of difference between hierarchical level means for a given question = 7.33771-002. Degrees of freedom = 4953.6.

TABLE 53

Response Group and Question and Hierarchical Level Means - Church Affiliated Hospital

Response Group	N	Question	GB	HA	Hierarchical Levels			
					DS	DH	FS	NS
Managerial (1)	44	7	4.2955	4.4773	3.4091	3.1818	2.7727	2.5455
Supervisory (2)	50	7	4.3800	4.3000	3.4400	3.4400	2.7000	2.5200
Nonsupervisory (3)	48	7	4.1042	4.1875	3.2083	2.9375	2.6042	2.3333
Medical Staff (4)	45	7	4.2000	4.2000	3.7333	3.5556	2.8000	2.5556
(1)	44	8	4.0455	4.3182	4.1591	4.2500	4.1591	3.9545
(2)	50	8	3.8000	3.8600	3.9800	3.9800	3.7400	3.6400
(3)	48	8	3.5208	3.9583	3.6250	3.6250	3.2083	3.2292
(4)	45	8	3.6444	3.9111	3.9333	4.0667	3.8222	3.7778
(1)	44	9	2.5000	2.7727	2.7273	2.9545	2.7955	2.7273
(2)	50	9	2.5000	2.8600	3.0400	2.8400	2.7600	2.6600
(3)	48	9	2.2500	2.5208	2.9583	2.8542	2.7292	2.8125
(4)	45	9	2.4000	2.6000	3.0889	3.0667	2.9556	2.9333
(1)	44	10	1.8864	2.3409	2.2500	2.5455	3.0000	3.0000

TABLE 53 continued

Response Group	N	Question	Hierarchical Levels					
			GB	HA	DS	DH	FS	NS
(2)	50	10	1.9800	2.4000	2.5200	3.0000	3.2000	3.2200
(3)	48	10	1.6250	2.0000	2.0208	2.4583	2.6667	2.7708
(4)	45	10	2.0222	2.2444	2.2667	2.6444	3.0000	3.2889
(1)	44	11	1.3864	1.6364	1.7045	2.0000	2.2500	2.5000
(2)	50	11	1.5000	1.6000	1.6400	1.9000	2.0600	2.6200
(3)	48	11	1.2292	1.4375	1.5417	1.6667	2.0208	2.3958
(4)	45	11	1.5778	1.9333	1.8222	2.0889	2.6889	2.8000
(1)	44	12	1.2955	1.6136	1.5455	1.8409	1.8409	1.7955
(2)	50	12	1.3200	1.4800	1.4800	1.8000	1.8000	1.9800
(3)	48	12	1.1042	1.1875	1.2292	1.3333	1.4167	1.4375
(4)	45	12	1.1333	1.3333	1.3111	1.4667	1.4667	1.8222

Variance at a given question - hierarchical level cell = 9.95371-001.
Degrees of freedom = 2313.0.

TABLE 54
Response Group Means - Nonchurch Affiliated Hospital

Response Group	Subjects	N	Mean
Managerial (1)	46	1656	2.8671
Supervisory (2)	48	1728	2.7477
Nonsupervisory (3)	50	1800	2.7317
Medical Staff (4)	47	1692	2.6011

SOURCE: Original data.

TABLE 55

Mean For Each Question by Response Group - Nonchurch Affiliated Hospital.

Response Group	N	Question 7	Question 8	Question 9	Question 10	Question 11	Question 12
Managerial (1)	276	3.0652	4.0326	3.0109	2.8116	2.2500	2.0326
Supervisory (2)	288	3.5035	3.7778	2.8576	2.6701	1.9861	1.6910
Nonsupervisory (3)	300	3.4167	3.8333	2.7900	2.6533	2.1267	1.5700
Medical Staff (4)	282	3.2908	3.6631	2.6312	2.5000	1.9894	1.5319
Mean	1146	3.3229	3.8255	2.8211	2.6579	2.0873	1.7024

Variance at a given level of question = 3.56669+000. Degrees of freedom = 795.8.

TABLE 56

Response Group and Hierarchical Level Means - Nonchutch Affiliated Hospital

Response Group	N	Hierarchical Levels					
		GB	HA	DS	DH	FS	NS
Managerial (1)	276	2.5109	2.8804	2.8297	2.9565	2.9565	3.0688
Supervisory (2)	288	2.4201	2.7778	2.7187	2.8403	2.8646	2.8646
Nonsupervisory (3)	300	2.4933	2.7133	2.7000	2.8000	2.8333	2.8500
Medical Staff (4)	282	2.4645	2.6418	2.5851	2.6879	2.6418	2.5851
Mean	1146	2.4721	2.7522	2.7077	2.8202	2.8237	2.8412

Variance at given level of hierarchical level = 2.42985+000. Degrees of freedom = 497.1.

TABLE 57

Question and Hierarchical Level Means - Nonchurch Affiliated Hospital

Question	Hierarchical Levels					
	GB	HA	DS	DH	FS	NS
Number 7	4.4398	4.2408	3.2775	3.0314	2.6492	2.2984
Number 8	3.5812	4.1675	4.0628	3.9791	3.6754	3.4869
Number 9	2.2827	2.6806	3.1257	3.0576	2.9372	2.8429
Number 10	1.8534	2.3037	2.3927	2.9476	3.1937	3.2565
Number 11	1.4555	1.6545	1.8272	2.0942	2.6073	2.8848
Number 12	1.2199	1.4660	1.5602	1.8115	1.8796	2.2775

Standard deviation of difference between question means for a given hierarchical level = 9.44059-002. Degrees of freedom = 3626.9.

Standard deviation of difference between hierarchical level means for a given question = 8.32373-002. Degrees of freedom = 5115.6.

TABLE 58

Response Group and Question and Hierarchical Level Means - Nonchurch Affiliated Hospital

Response Group	N	Question	Hierarchical Levels					
			GB	HA	DS	DH	FS	NS
Managerial (1)	46	7	4.5870	4.3478	2.9348	2.5435	2.0870	1.8913
Supervisory (2)	48	7	4.5000	4.2917	3.3750	3.2500	2.9167	2.6875
Nonsupervisory (3)	50	7	4.3400	4.1400	3.4600	3.1400	2.8800	2.5400
Medical Staff (4)	47	7	4.3400	4.1915	3.3191	3.1702	2.6809	2.0426
(1)	46	8	3.9130	4.4130	4.2826	4.2391	3.7826	3.5652
(2)	48	8	3.5625	4.1667	4.0417	3.8750	3.5625	3.4583
(3)	50	8	3.5200	4.1800	4.0800	4.0200	3.7000	3.5000
(4)	47	8	3.3404	3.9149	3.8511	3.7872	3.6596	3.4255
(1)	46	9	2.1957	2.6957	3.5000	3.3043	3.1957	3.1739
(2)	48	9	2.3542	2.8542	3.0417	3.0833	3.0000	2.8125
(3)	50	9	2.2400	2.6200	3.0800	3.1000	2.8800	2.8200
(4)	47	9	2.3404	2.5532	2.8936	2.7447	2.6809	2.5745

TABLE 58 continued

Response Group	N	Question	Hierarchical Levels					NS
			GS	HA	OS	OH	FS	
(1)	46	10	1.7391	2.5217	2.5652	3.0870	3.4348	3.5217
(2)	48	10	1.6875	2.3542	2.5417	2.9167	3.2917	3.2292
(3)	50	10	2.0000	2.2000	2.3000	2.9400	3.2000	3.2800
(4)	47	10	1.9787	2.1489	2.1702	2.8511	2.8511	3.0000
(1)	46	11	1.3913	1.6957	1.9348	2.3478	2.8696	3.2609
(2)	48	11	1.3125	1.5625	1.7292	2.0625	2.4583	2.7917
(3)	50	11	1.5800	1.7400	1.8200	2.0200	2.7200	2.8800
(4)	47	11	1.5319	1.6170	1.8298	1.9574	2.3830	2.6178
(1)	46	12	1.2391	1.6087	1.7609	2.2174	2.3696	3.0000
(2)	48	12	1.1042	1.4375	1.5833	1.8542	1.9583	2.2083
(3)	50	12	1.2800	1.4000	1.4600	1.5800	1.6200	2.0800
(4)	47	12	1.2553	1.4255	1.4468	1.6170	1.5957	1.8511

Variance at a given question - hierarchical level cell = 1.16117+000. Degrees of freedom = 2645.2.

TABLE 59

Two-way Disproportionate with Repeated Measurements Analysis of Variance Test of Main Effects Assuming Zero Interactions

Question 5

Source	Degrees of Freedom (Df)	Sum of Squares (S.SQ.)	Mean Square (M.SQ.)	F Statistic	Probability p
A	1	.312161	3.1216-001	.18	N.S.
B	3	1.109311	3.6977-001	.21	N.S.
A * B	3	2.872626	9.5754-001	.54	N.S.
Error A	370	653.676460	1.7667+000		
Time	5	2584.647708	5.1693+002	985.84	<.001
A * T	5	6.033594	1.2067+000	2.30	<.05
B * T	15	20.084040	1.3389+000	2.55	<.005
A * B * T	15	10.549600	7.0331-001	1.34	N.S.
Error B	1850	970.058216	5.2436-001		

Sum of Squares For Mean = 2.0768+004.

TABLE 59 continued

Cell Numbers (6 Times)	Treatment B				Total	Row Wts
	Treatment A	Managerial	Supervisory	Nonsupervisory		
Nonchurch	46	48	50	47	191	.5000
Church	44	50	48	45	187	.5000
Total	90	98	98	92	378	
Col Wts	.2500	.2500	.2500	.2500		

SOURCE: Original data.

TABLE 60

Two-way Disproportionate with Repeated Measurements Analysis of Variance Test of Main Effects Assuming Zero Interactions

Question 6

Source	Degrees of Freedom (DF)	Sum of Squares (S.SQ.)	Mean Square (M.SQ.)	F Statistic	Probability P
A	1	.193495	1.9349-001	.09	N.S.
B	3	3.194904	1.0650+000	.51	N.S.
A * B	3	18.478846	6.1596+000	2.97	<.05
Error A	370	766.443981	2.0715+000		
Time	5	1166.754851	2.3335+002	389.52	<.001
A * T	5	3.712405	7.4248-001	1.24	N.S.
B * T	15	18.889619	1.2593+000	2.10	<.01
A * B * T	15	6.626040	4.4174-001	.74	N.S.
Error B	1850	1108.277577	5.9907-001		

Sum of Squares For Mean = 2.5213+004.

TABLE 60 continued

Cell Numbers (6 Times)	Treatment 8				Total	Row Wts
	Treatment A	Managerial	Supervisory	Nonsupervisory		
Nonchurch	46	48	50	47	191	.5000
Church	44	50	48	45	187	.5000
Total	90	98	98	92	378	
Col Wts	.2500	.2500	.2500	.2500		

SOURCE: Original data.

TABLE 61

Two-way Disproportionate with Repeated Measurements Analysis of Variance Test of Main Effects Assuming Zero Interactions

Question 7

Source	Degrees of Freedom (DF)	Sum of Squares (S.SQ.)	Mean Square (M.SQ.)	F Statistic	Probability p
A	1	4.055578	4.0556+000	1.00	N.S.
B	3	16.355095	5.4517+000	1.34	N.S.
A * B	3	27.484377	9.1615+000	2.25	N.S.
Error A	270	1506.776407	4.0724+000		
Time	5	1219.289242	2.4386+002	426.96	<.001
A * T	5	11.494261	2.2989+000	4.03	<.001
B * T	15	29.901650	1.9934+000	3.49	<.001
A * B * T	15	17.925355	1.1950+000	2.09	<.01
Error B	1850	1056.614428	5.7114-001		

Sum of Squares for Mean = 2.5696+004.

TABLE 61 continued

Cell Numbers (6 Times)	Treatment B				Total	Row Wts
	Treatment A	Managerial	Supervisory	Nonsupervisory		
Nonchurch	46	48	50	47	191	.5000
Church	44	50	48	45	187	.5000
Total	90	98	98	92	378	
Col Wts	.2500	.2500	.2500	.2500		

SOURCE: Original data.

TABLE 62

Two-way Disproportionate with Repeated Measurements Analysis of Variance Test of Main Effects Assuming Zero Interactions

Question 8

Source	Degrees of Freedom (Df)	Sum of Squares (S.SQ.)	Mean Square (M.SQ.)	F Statistic	Probability P
A	1	.060434	6.0434-002	.02	N.S.
B	3	51.903587	1.7301+001	4.69	<.005
A * B	3	21.206478	7.0688+000	1.92	N.S.
Error A	370	1363.982357	3.6864+000		
Time	5	86.838185	1.7368+001	29.64	<.001
A * T	5	9.452984	1.8906+000	3.23	<.01
B * T	15	8.541262	5.6942-001	.97	N.S.
A * B * T	15	7.793476	5.1957-001	.89	N.S.
Error B	1850	1083.837336	5.8586-001		

Sum of Squares For Mean = 3.3273+004

TABLE 62 continued

Cell Numbers (6 Times)	Treatment B					Total	Row Wts
	Treatment A	Managerial	Supervisory	Nonsupervisory	Medical Staff		
Nonchurch	46	48	50	47	191	.5000	
Church	44	50	48	45	187	.5000	
Total	90	98	98	92	378		
Col Wts	.2500	.2500	.2500	.2500			

SOURCE: Original data.

TABLE 63

Two-way Disproportionate with Repeated Measurements Analysis of Variance Test of Main Effects Assuming Zero Interactions

Question 9

Source	Degrees of Freedom (DF)	Sum of Squares (S.SQ.)	Mean Square (M.SQ.)	F Statistic	Probability P
A	1	2.011976	2.0120+000	.54	N.S.
B	3	8.183396	2.7278+000	.73	N.S.
A * B	3	16.002434	5.3341+000	1.42	N.S.
Error A	370	1390.605708	3.7584+000		
Time	5	120.765433	2.4153+001	30.78	<.001
A * T	5	5.777825	1.1556+000	1.47	N.S.
B * T	15	7.460475	4.9736-001	.63	N.S.
A * B * T	15	17.376263	1.1584+000	1.48	N.S.
Error B	1850	1451.502502	7.8460-001		

Sum of Squares For Mean = 1.7678+004.

TABLE 63 continued

Cell Numbers (6 Times)	Treatment 8					Total	Row Wts
	Treatment A	Managerial	Supervisory	Nonsupervisory	Medical Staff		
Nonchurch	46	48	50	47	191	.5000	
Church	44	50	48	45	187	.5000	
Total	90	98	98	92	378		
Col Wts	.2500	.2500	.2500	.2500		.2500	

SOURCE: Original data.

TABLE 64

Two-way Disproportionate with Repeated Measurements Analysis of Variance Test of Main Effects Assuming Zero Interactions

Question 10

Source	Degrees of Freedom (DF)	Sum of Squares (S.SQ.)	Mean Square (M.SQ.)	F Statistic	Probability P
A	1	11.784323	1.1784+001	3.73	N.S.
B	3	21.194960	7.0650+000	2.24	N.S.
A * B	3	25.287259	8.4291+000	2.67	<.05
Error A	370	1169.141751	3.1598+000		
Time	5	495.795856	9.9159+001	137.35	<.001
A * T	5	6.047891	1.2096+000	1.68	N.S.
B * T	15	12.175053	8.1167-001	1.12	N.S.
A * B * T	15	9.047091	6.0314-001	.84	N.S.
Error B	1850	1335.558790	7.2192-001		

Sum of Squares For Mean = 1.5187+004.

TABLE 64 continued

Cell Numbers (6 Times)	Treatment B					Total	Row Wts
	Treatment A	Managerial	Supervisory	Nonsupervisory	Medical Staff		
Nonchurch	46	48	50	47	191	.5000	
Church	44	50	48	45	187	.5000	
Total	90	98	98	92	378		
Col Wts	.2500	.2500	.2500	.2500		.2500	

SOURCE: Original data.

TABLE 65

Two-way Disproportionate with Repeated Measurements Analysis of Variance Test of Main Effects Assuming Zero Interactions

Question 11

Source	Degrees of Freedom (DF)	Sum of Squares (S.SQ.)	Mean Square (M.SQ.)	F Statistic	Probability P
A	1	16.993303	1.6993+001	6.85	<.01
B	3	11.990345	3.9968+000	1.61	N.S.
A * B	3	28.305009	9.4350+000	3.80	<.025
Error A	370	918.418928	2.4822+000		
Time	5	460.786597	9.2157+001	177.36	<.001
A * T	5	9.468542	1.8937+000	3.64	<.005
B * T	15	7.586966	5.0580-001	.97	N.S.
A * B * T	15	10.812072	7.2080-001	1.39	N.S.
Error B	1850	961.267787	5.1960-001		

Sum of Squares For Mean = 9.0800+003.

TABLE 65 continued

Cell Numbers (6 Times)	Treatment B					Total	Row Wts
	Treatment A	Managerial	Supervisory	Nonsupervisory	Medical Staff		
Nonchurch	46	48	50	47	191	.5000	
Church	44	50	48	45	187	.5000	
Total	90	98	98	92	378		
Col Wts	.2500	.2500	.2500	.2500			

SOURCE: Original data.

TABLE 66

Two-way Disproportionate with Repeated Measurements Analysis of Variance Test of Main Effects Assuming Zero Interactions

Question 12

Source	Degrees of Freedom (DF)	Sum of Squares (S.SQ.)	Mean Square (M.SQ.)	F Statistic	Probability P
A	1	23.318713	2.3319+001	11.85	<.001
B	3	61.255878	2.0419+001	10.38	<.001
A * B	3	9.841886	3.2806+000	1.67	N.S.
Error A	370	728.101170	1.9678+000		
Time	5	152.711199	3.0542+001	96.26	<.001
A * T	5	15.241393	3.0483+000	9.61	<.001
B * T	15	16.117388	1.0745+000	3.39	<.001
A * B * T	15	15.887861	1.0592+000	3.34	<.001
Error B	1850	586.965036	3.1728-001		

Sum of Squares For Mean = 5.8259+003.

TABLE 66 continued

Cell Numbers (6 Times)	Treatment B					Total	Row Wts
	Treatment A	Managerial	Supervisory	Nonsupervisory	Medical Staff		
Nonchurch	46	48	50	47	191	.5000	
Church	44	50	48	45	187	.5000	
Total	90	98	98	92	378		
Col Wts	.2500	.2500	.2500	.2500		.2500	

SOURCE: Original data.

TABLE 67

Number of Responses by Priority for Each of the Five Bases of Control - Church Affiliated Hospital

Response Group	Priority	Bases of Control				
		Referent	Expert	Reward	Coercive	Legitimate
		A	B	C	D	E
MANAGERIAL	1	3	24	-	1	12
	2	16	8	1	4	11
	3	13	5	7	2	13
	4	6	3	20	8	3
	5	2	-	12	25	1
SUPERVISORY	1	5	32	-	1	12
	2	23	6	3	3	15
	3	14	8	8	3	17
	4	3	4	25	14	4
	5	5	-	14	29	2
NONSUPERVISORY	1	2	25	-	2	19
	2	11	12	5	2	18
	3	20	6	8	6	8
	4	9	3	21	13	2
	5	6	2	14	25	1

TABLE 67 continued

Response Group	Pri- ority	Bases of Control				
		Referent	Expert	Reward	Coercive	Legit- imate
		A	B	C	D	E
TOTALS	1	10	81	-	4	43
	2	50	26	9	9	44
	3	47	19	23	11	38
	4	18	10	66	35	9
	5	13	2	40	79	4
	N	138	138	138	138	138

SOURCE: Respondents from the church affiliated hospital. The research question to which these respondents replied is identified as question number 20 on Questionnaire Form A, which is included in Appendix B.

TABLE 68

Number of Responses by Priority for Each of the Five Bases of Control - Nonchurch Affiliated Hospital

Response Group	Priority	Bases of Control					Legitimate E
		Referent	Expert	Reward	Coercive		
		A	B	C	D		
MANAGERIAL	1	7	15	-	1	17	
	2	7	10	7	6	10	
	3	15	9	6	2	8	
	4	6	5	16	9	4	
	5	5	1	11	22	1	
SUPERVISORY	1	1	26	-	1	20	
	2	12	15	2	4	15	
	3	24	2	12	-	10	
	4	6	4	20	15	3	
	5	5	1	14	28	-	
NONSUPERVISORY	1	2	27	-	2	19	
	2	15	13	3	5	14	
	3	23	2	10	3	12	
	4	5	7	27	10	1	
	5	5	1	10	30	4	

TABLE 68 continued

Response Group	Priority	Bases of Control				
		Referent	Expert	Reward	Coercive	Legitimate
		A	B	C	D	E
TOTALS	1	10	68	-	4	56
	2	34	38	12	15	39
	3	62	13	28	5	30
	4	17	16	63	34	8
	5	15	3	35	80	5
	N	138	138	138	138	138

SOURCE: Respondents from the nonchurch affiliated hospital. The research question to which these respondents replied is identified as question number 20 on Questionnaire Form A, which is included in Appendix B.

TABLE 69

Number of Responses as to Satisfaction With the Way Immediate Supervisors Were Doing Their Jobs by Response Group - Church Affiliated Hospital

Response Group	Level of Satisfaction				
	Very dissatisfied	Some-what dissatisfied	A little satisfied	Fairly satisfied	Very satisfied
	1	2	3	4	5
MANAGERIAL	-	1	11	13	15
SUPERVISORY	1	-	14	25	10
NONSUPERVISORY	2	1	15	23	7
TOTALS	3	2	40	61	32

(N=138)

SOURCE: Respondents from the church affiliated hospital. The research question to which these respondents replied is identified as question number 19 on Questionnaire Form A, which is included in Appendix B.

TABLE 70

Number of Responses as to Satisfaction With the Way Immediate Supervisors Were Doing Their Jobs by Response Group - Nonchurch Affiliated Hospital

Response Group	Level of Satisfaction				
	Very dissatisfied	Some-what dissatisfied	A little satisfied	Fairly satisfied	Very Satisfied
	1	2	3	4	5
MANAGERIAL	1	1	13	17	8
SUPERVISORY	1	2	7	26	12
NONSUPERVISORY	2	2	12	23	11
TOTALS	4	5	32	66	31

(N=138)

SOURCE: Respondents from the nonchurch affiliated hospital. The research question to which these respondents replied is identified as question number 19 on Questionnaire Form A, which is included in Appendix B.

TABLE 71

Correlation Coefficients

Hos- pital	Level of sat- isfac- tion	Responses to Bases of Control (Referent)					Totals
		1	2	3	4	5	
A Church Affiliated	1	0	15	8	9	0	32
	2	0	25	29	5	2	61
	3	10	10	10	3	7	40
	4	0	0	0	1	1	2
	5	0	0	0	0	3	3
$r = .165$							
B Nonchurch Affiliated	1	0	6	23	2	0	31
	2	2	23	32	8	0	65
	3	8	4	7	5	8	32
	4	0	1	0	1	4	6
	5	0	0	0	1	3	4
$r = .324$							
Both	1	0	21	31	11	0	63
	2	2	48	61	13	2	126
	3	18	14	17	8	15	72
	4	0	1	0	2	5	8
	5	0	0	0	1	6	7
							276

SOURCE: Responses to the research questions which are identified as numbers 19 and 20 on Questionnaire Form A found in Appendix B.

TABLE 72

Correlation Coefficients

Hos- pital	Level of sat- isfac- tion	Responses to Bases of Control (Expert)					Totals
		1	2	3	4	5	
A Church Affiliated	1	29	2	1	0	0	32
	2	49	6	5	1	0	61
	3	3	17	13	5	2	40
	4	0	1	0	1	0	2
	5	0	0	0	3	0	3
$r = .656$							
B Nonchurch Affiliated	1	28	2	1	0	0	31
	2	38	23	2	2	0	65
	3	2	13	9	7	1	32
	4	0	0	1	4	1	6
	5	0	0	0	3	1	4
$r = .735$							
Both	1	57	4	2	0	0	63
	2	87	29	7	3	0	126
	3	5	30	22	12	3	72
	4	0	1	1	5	1	8
	5	0	0	0	6	1	7

276

SOURCE: Responses to the research questions which are identified as numbers 19 and 20 on Questionnaire Form A found in Appendix B.

TABLE 73

Correlation Coefficients

Hos- pital	Level of sat- isfac- tion	Responses to Bases of Control (Reward)					Totals
		1	2	3	4	5	
A Church Affiliated	1	0	1	7	16	8	32
	2	0	1	4	36	20	61
	3	0	4	10	14	12	40
	4	0	0	2	0	0	2
	5	0	3	0	0	0	3
$r = -.265$							
B Nonchurch Affiliated	1	0	1	3	20	7	31
	2	0	7	5	34	19	65
	3	0	4	10	10	8	32
	4	0	0	5	1	0	6
	5	0	0	4	0	0	4
$r = -.275$							
Both	1	0	2	10	36	15	63
	2	0	8	9	70	39	126
	3	0	8	20	24	20	72
	4	0	0	7	1	0	8
	5	0	3	4	0	0	7

SOURCE: Responses to the research questions which are identified as numbers 19 and 20 on Questionnaire Form A found in Appendix B.

TABLE 74

Correlation Coefficients

Hos- pital	Level of sat- isfac- tion	Responses to Bases of Control (Coercive)					Totals
		1	2	3	4	5	
A Church Affiliated	1	0	1	4	3	24	32
	2	0	1	4	17	39	61
	3	0	6	3	15	16	40
	4	1	1	0	0	0	2
	5	3	0	0	0	0	3
$r = -.477$							
B Nonchurch Affiliated	1	0	0	1	6	24	31
	2	0	0	1	21	43	65
	3	0	10	3	6	13	32
	4	0	5	0	0	1	6
	5	4	0	0	0	0	4
$r = -.650$							
Both	1	0	1	5	9	48	63
	2	0	1	5	38	82	126
	3	0	16	6	21	29	72
	4	1	6	0	0	1	8
	5	7	0	0	0	0	7
							276

SOURCE: Responses to the research questions which are identified as numbers 19 and 20 on Questionnaire Form A found in Appendix B.

TABLE 75

Correlation Coefficients

Hos- pital	Level of sat- isfac- tion	Responses to Bases of Control (Legitimate)					Totals
		1	2	3	4	5	
A Church Affiliated	1	3	13	12	4	0	32
	2	12	28	19	2	0	61
	3	27	3	4	3	3	40
	4	1	0	0	0	1	2
	5	0	0	3	0	0	3
$r = -.127$							
B Nonchurch Affiliated	1	3	22	3	3	0	31
	2	25	12	25	0	3	65
	3	22	1	3	4	2	32
	4	6	0	0	0	0	6
	5	0	4	0	0	0	4
$r = -.172$							
Both	1	6	35	15	7	0	63
	2	37	40	44	2	3	126
	3	49	4	7	7	5	72
	4	7	0	0	0	1	8
	5	0	4	3	0	0	7
							276

SOURCE: Responses to the research questions which are identified as numbers 19 and 20 on Questionnaire Form A found in Appendix B.

TABLE 76

Responses as to the Amount of Control the Medical Staff has on How the Hospital Functions - Church Affiliated Hospital

Response Group	Amount of Control				
	Little or no control	Some control	Quite a bit of control	A great deal of control	A very great deal of control
	1	2	3	4	5
MANAGERIAL (N=44)	1	3	11	20	9
SUPERVISORY (N=50)	-	5	10	24	11
NONSUPERVISORY (N=48)	1	7	11	19	10
MEDICAL STAFF (N=45)	1	3	14	14	13
TOTALS (N=187)	3	18	46	77	43

SOURCE: Respondents from the church affiliated hospital. The research question to which these respondents replied is identified as question number 13 on Questionnaire Form A, which is included in Appendix B.

TABLE 77

Responses as to the Amount of Control the Medical Staff Should Have on How the Hospital Functions - Church Affiliated Hospital

Response Group	Amount of Control				
	Little or no control	Some control	Quite a bit of control	A great deal of control	A very great deal of control
	1	2	3	4	5
MANAGERIAL (N=44)	3	9	14	12	6
SUPERVISORY (N=50)	-	7	15	20	8
NONSUPERVISORY (N=48)	-	4	18	16	10
MEDICAL STAFF (N=45)	-	4	12	16	13
TOTALS (N=187)	3	24	59	64	37

SOURCE: Respondents from the church affiliated hospital. The research question to which these respondents replied is identified as question number 14 on Questionnaire Form A, which is included in Appendix B.

TABLE 78

Responses as to the Amount of Control the Medical Staff has on How the Hospital Functions - Nonchurch Affiliated Hospital

Response Group	Amount of Control				
	Little or no control	Some control	Quite a bit of control	A great deal of control	A very great deal of control
	1	2	3	4	5
MANAGERIAL (N=46)	-	1	15	22	8
SUPERVISORY (N=48)	-	2	19	15	12
NONSUPER- VISORY (N=50)	1	8	10	21	10
MEDICAL STAFF (N=47)	-	7	13	16	11
TOTALS (N=191)	1	18	57	74	41

SOURCE: Respondents from the nonchurch affiliated hospital. The research question to which these respondents replied is identified as question number 13 on Questionnaire Form A, which is included in Appendix B.

TABLE 79

Responses as to the Amount of Control the Medical Staff Should Have on How the Hospital Functions - Non-church Affiliated Hospital

Response Group	Amount of Control				
	Little or no control	Some control	Quite a bit of control	A great deal of control	A very great deal of control
	1	2	3	4	5
MANAGERIAL (N=46)	1	12	19	10	4
SUPERVISORY (N=48)	-	11	17	13	7
NONSUPERVISORY (N=50)	-	14	15	16	5
MEDICAL STAFF (N=47)	-	7	11	17	12
TOTALS (N=191)	1	44	62	56	28

SOURCE: Respondents from the nonchurch affiliated hospital. The research question to which these respondents replied is identified as question number 14 on Questionnaire Form A, which is included in Appendix B.

TABLE 80

Combined Responses as to the Amount of Active Control Exercised by the Medical Staff - Church Affiliated Hospital

Control Exercised by the Medical Staff over:	Amount of Control				
	Little or no control	Some control	Quite a bit of control	A great deal of control	A very great deal of control
	1	2	3	4	5
Governing Body	36	63	40	29	19
Administrator	29	54	49	30	25
Directors of Various Services	16	32	61	44	34
Department Heads	11	29	32	63	52
First Line Supervisors	3	16	30	77	61
Nonsupervisory Employees	3	19	33	66	66
TOTALS (N=1122)	98	213	245	309	257

SOURCE: Respondents from the church affiliated hospital. The research question to which these respondents replied is identified as question number 15 on Questionnaire Form A, which is included in Appendix B.

TABLE 81

Combined Responses as to the Amount of Active Control Exercised by the Medical Staff - Nonchurch Affiliated Hospital

Control Exercised by the Medical Staff over:	Amount of Control				
	Little or no control	Some control	Quite a bit of control	A great deal of control	A very great deal of control
	1	2	3	4	5
Governing Body	54	61	41	23	12
Administrator	37	59	50	26	19
Directors of Various Services	11	36	63	44	37
Department Heads	8	29	37	61	56
First Line Supervisors	8	29	35	69	50
Nonsupervisory Employees	10	25	32	67	57
TOTALS (N=1146)	128	239	258	290	231

SOURCE: Respondents from the nonchurch affiliated hospital. The research question to which these respondents replied is identified as question number 15 on Questionnaire Form A, which is included in Appendix B.

TABLE 82

Combined Responses by Organization as to the Amount of Passive Control Exerted upon the Medical Staff

Organi- zation	Amount of Control Subjected to				
	Little or no control	Some control	Quite a bit of control	A great deal of control	A very great deal of control
	1	2	3	4	5
Church Affiliated Hospital (N=1122)	369	285	172	157	139
Nonchurch Affiliated Hospital (N=1146)	382	293	168	133	170

SOURCE: Respondents from the church and the nonchurch affiliated hospitals. The research question to which these respondents replied is identified as question number 16 on Questionnaire Form A, which is included in Appendix B.

APPENDIX D

SUPPLEMENTAL ANALYSIS

Introduction

As was mentioned in Chapter V there are those who believe that data gathered by questions of the nature used in this study can only be measured on a nominal or ordinal scale and consequentially should be analyzed by the use of nonparametric methods. Therefore the purpose of this supplemental analysis is to demonstrate how such an approach can be used and still arrive at the same conclusions as with the parametric methods which were used in Chapter V.

This study was designed to explore several facets of influence among six hierarchical levels in two hospitals. In this supplemental analysis only the responses to the "Amount of perceived control by hierarchical level" was considered. The data were collected by the use of the research question which is identified as number 5 on Questionnaire Form A which is found in Appendix B. Responses to this question were recorded on a five-point scale (1-5). A copy of the results for each of four response groups - for each hospital is found in Appendix C on Tables 21 or 22.

In this supplemental analysis it was of interest to know whether or not the amount of perceived control attributed

to each hierarchical level was equal. In addition it was of interest to see whether or not the four response groups agreed on the level of perceived control each hierarchical exercised.

Statistical Analysis

The data were analyzed as follows. First, for the governing body level separately, the data were tabulated for the four response groups. See Contingency Tables 1 and 2 (Tables 83 and 84). Next, a chi-square procedure was used to test the Null Hypothesis that the relative frequencies among the levels of perceived control were the same for all four response groups. The testing results showed no significant differences among the four response groups as to the amount of control the "governing body" actually has. That is, the four response groups were generally in good agreement as to the amount of control that the "governing body" actually has. The same was true for each of the five remaining hierarchical levels. See Contingency Tables 3-12 (Tables 85-94).

Finally, since all response groups were in agreement as to the amount of control that each hierarchical level has, additional contingency tables were prepared which compared the responses among the six hierarchical groupings using the totals of 187 and 191 responses. See Contingency Tables 13 and 14 (Tables 95-96). In these tables the data were treated as though a different 187 or 191 subjects were

sampled for each hierarchical level. Statistical testing on the data in Contingency Tables 13 and 14 rejected the initial hypothesis of equal control among the hierarchical levels ($P < .001$). The data also indicated that control decreased as one moves down the hierarchical levels. Interestingly, these are the same results that were obtained by the use of the parametric methods described in Chapter V.

TABLE 83

Contingency Table 1 (Church Affiliated Hospital)

Project: Governing Body

Row ID: Number of Levels = 4

Column ID: Number of Levels = 4

Observed Data

Response Groups		Amount of Control				Total
		Little + Some 1	Quite a bit 2	Great deal 3	Very great deal 4	
Managerial	(1)	2	6	8	28	44
Supervisory	(2)	3	6	16	25	50
Nonsuper- visory	(3)	5	7	19	17	48
Medical Staff	(4)	2	5	12	26	45
TOTAL		12	24	55	96	187

(O-E) Residuals

	1	2	3	4
1	-.82	.35	-4.94	5.41
2	-.21	-.42	1.29	-.67
3	1.92	.84	4.88	-7.64
4	-.89	-.78	-1.24	2.90

Chi Square = 9.843

DF = 9

Probability = .3634

TABLE 84

Contingency Table 2 (Nonchurch Affiliated Hospital)

Project: Governing Body

Row ID: Number of Levels = 4

Column ID: Number of Levels = 4

Observed Data

Response Groups		Amount of Control				Total
		Little + Some 1	Quite a bit 2	Great deal 3	Very great deal 4	
Managerial	(1)	0	6	12	28	46
Supervisory	(2)	0	7	16	25	48
Nonsuper- visory	(3)	3	3	22	22	50
Medical Staff	(4)	4	7	12	24	47
TOTAL		7	23	62	99	191

(O-E) Residuals

	1	2	3	4
1	-1.69	.46	-2.93	4.16
2	-1.76	1.22	.42	.12
3	1.17	-3.02	5.77	-3.92
4	2.28	1.34	-3.26	-.36

Chi Square = 13.985

DF = 9

Probability = .1229

TABLE 85

Contingency Table 3 (Church Affiliated Hospital)

Project: Administrator

Row ID: Number of Levels = 4

Column ID: Number of Levels = 3

Observed Data

Response Groups		Amount of Control			Total
		Quite a bit	Great deal	Very great deal	
		1	2	3	
Managerial	(1)	2	17	24	43
Supervisory	(2)	1	24	24	49
Nonsuper- visory	(3)	7	16	25	48
Medical Staff	(4)	5	18	22	45
TOTAL		15	75	95	185

(O-E) Residuals

	1	2	3
1	-1.49	-.43	1.92
2	-2.97	4.14	-1.16
3	3.11	-3.46	.35
4	1.35	-.24	-1.11

Chi Square = 7.609 DF = 6

Probability = .2681

TABLE 86
Contingency Table 4 (Nonchurch Affiliated Hospital)

Project: Administrator

Row ID: Number of Levels = 4

Column ID: Number of Levels = 3

Observed Data

Response Groups		Amount of Control			Total
		Quite a bit	Great deal	Very great deal	
		1	2	3	
Managerial	(1)	5	13	28	46
Supervisory	(2)	3	17	28	48
Nonsuper- visory	(3)	6	19	25	50
Medical Staff	(4)	6	20	19	45
TOTAL		20	69	100	189

(O-E) Residuals

	1	2	3
1	.13	-3.79	3.66
2	-2.08	-.52	2.60
3	.71	.75	-1.46
4	1.24	3.57	-4.81

Chi Square = 4.820 DF = 6

Probability = .5670

TABLE 87

Contingency Table 5 (Church Affiliated Hospital)

 Project: Directors of Various Services

Row ID: Number of Levels = 4

Column ID: Number of Levels = 4

Observed Data

Response Groups		Amount of Control				Total
		Little + Some 1	Quite a bit 2	Great deal 3	Very Great deal 4	
Managerial	(1)	11	20	11	2	44
Supervisory	(2)	11	18	15	6	50
Nonsuper- visory	(3)	8	21	16	3	48
Medical Staff	(4)	9	20	12	4	45
TOTAL		39	79	54	15	187

(O-E) Residuals

	1	2	3	4
1	1.82	1.41	-1.71	-1.53
2	.57	-3.12	.56	1.99
3	-2.01	.72	2.14	-.85
4	-.39	.99	-.99	.39

Chi Square = 3.996 DF = 9

Probability = .9117

TABLE 88

Contingency Table 6 (Nonchurch Affiliated Hospital)

Project: Directors of Various Services

Row ID: Number of Levels = 4

Column ID: Number of Levels = 4

Observed Data

Response Groups		Amount of Control				Total
		Little + Some 1	Quite a bit 2	Great deal 3	Very great deal 4	
Managerial	(1)	10	22	10	4	46
Supervisory	(2)	10	25	9	4	48
Nonsuper- visory	(3)	11	17	19	3	50
Medical Staff	(4)	12	21	11	3	47
TOTAL		43	85	49	14	191

(O-E) Residuals

	1	2	3	4
1	-.36	1.53	-1.80	.63
2	-.81	3.64	-3.31	.48
3	-.26	-5.25	6.17	-.66
4	1.42	.08	-1.06	-.45

Chi Square = 6.833 DF = 9

Probability = .6545

TABLE 89

Contingency Table 7 (Church Affiliated Hospital)

Project: Department Heads

Row ID: Number of Levels = 4

Column ID: Number of Levels = 5

Observed Data

Response Groups		Amount of Control					Total
		Little	Some	Quite a bit	Great deal	Very great deal	
		1	2	3	4	5	
Managerial	(1)	1	20	17	4	2	44
Supervisory	(2)	2	14	19	8	7	50
Nonsuper- visory	(3)	3	14	23	6	2	48
Medical Staff	(4)	3	15	18	7	2	45
TOTAL		9	63	77	25	13	187

(O - E) Residuals

		1	2	3	4	5
1	-1.12	5.18	-1.12	-1.88	-1.06	
2	-.41	-2.84	-1.59	1.32	3.52	
3	.69	-2.17	3.24	-.42	-1.34	
4	.83	-.16	-.53	.98	-1.13	

Chi Square = 10.435

DF = 12

Probability = .5779

TABLE 90

Contingency Table 8 (Nonchurch Affiliated Hospital)

Project: Department Heads

Row ID: Number of Levels = 4

Column ID: Number of Levels = 4

Observed Data

Response Groups		Amount of Control				Total
		Little + Some 1	Quite a bit 2	Great deal 3	Very great deal 4	
Managerial	(1)	22	17	5	2	46
Supervisory	(2)	26	18	2	2	48
Nonsuper- visory	(3)	17	21	7	5	50
Medical Staff	(4)	24	14	6	3	47
TOTAL		89	70	20	12	191

(O-E) Residuals

	1	2	2	4
1	.57	.14	.18	-.89
2	3.63	.41	-3.03	-1.02
3	-6.30	2.68	1.76	1.86
4	2.10	-3.23	1.08	.05

Chi Square = 7.891 DF = 9

Probability = .5452

TABLE 91

Contingency Table 9 (Church Affiliated Hospital)

Project: First Line Supervisors

Row ID: Number of Levels = 4

Column ID: Number of Levels = 4

Observed Data

Response Groups	Amount of Control				Total
	Little	Some	Quite a bit	Great Deal Very + great deal	
	1	2	3	4	
Managerial (1)	12	25	6	1	44
Supervisory (2)	22	17	9	2	50
Nonsuper- visory (3)	15	23	8	2	48
Medical Staff (4)	15	23	4	3	45
TOTAL	64	88	27	8	187

(O-E) Residuals

		1	2	3	4
1	-3.06	4.29	-.35	-.88	
2	4.89	-6.53	1.78	-.14	
3	-1.43	.41	1.07	-.05	
4	-.40	1.82	-2.50	1.07	

Chi Square = 7.627 DF = 9

Probability = .5721

TABLE 92

Contingency Table 10 (Nonchurch Affiliated Hospital)

Project: First Line Supervisors

Row ID: Number of Levels = 4

Column ID: Number of Levels = 4

Observed Data

Response Groups		Amount of Control				Totals
		Little + Some 1	Quite a bit 2	Great deal 3	Very great deal 4	
Managerial	(1)	38	6	1	1	46
Supervisory	(2)	40	6	2	-	48
Nonsuper- visory	(3)	38	4	6	2	50
Medical Staff	(4)	34	8	2	3	47
TOTAL		150	24	11	6	191

(O-E) Residuals

	1	2	3	4
1	1.87	.22	-1.65	-.45
2	2.30	-.03	-.76	-1.51
3	-1.27	-2.28	3.12	.43
4	-2.91	2.09	-.71	1.52

Chi Square = 10.227 DF = 9

Probability = .3324

TABLE 93

Contingency Table 11 (Church Affiliated Hospital)

 Project: Nonsupervisory Employees

Row ID: Number of Levels = 4

Column ID: Number of Levels = 3

Observed Data

Response Groups		Amount of Control			Total
		Little	Some	Quite a bit + Great deal + Very great deal	
		1	2	3	
Managerial	(1)	20	20	4	44
Supervisory	(2)	29	15	6	50
Nonsuper- visory	(3)	33	13	2	48
Medical Staff	(4)	30	13	2	45
TOTAL		112	61	14	187

(O-E) Residuals

		1	2	3
1	-6.35	5.65	.71	
2	-.95	-1.31	2.26	
3	4.25	-2.66	-1.59	
4	3.05	-1.68	-1.37	

Chi Square = 8.280 DF = 6

Probability = .2183

TABLE 94

Contingency Table 12 (Nonchurch Affiliated Hospital)

Project: Nonsupervisory Employees

Row ID: Number of Levels = 4

Column ID: Number of Levels = 4

Observed Data

Response Groups		Amount of Control				Total
		Little + Some 1	Quite a bit 2	Great deal 3	Very great deal 4	
Managerial	(1)	41	3	1	1	46
Supervisory	(2)	43	5	-	-	48
Nonsuper- visory	(3)	47	3	-	-	50
Medical Staff	(4)	43	2	-	2	47
TOTAL		174	13	1	3	191

(O-E) Residuals

	1	2	3	4
1	-.91	-.13	.76	.28
2	-.73	1.73	-.25	-.75
3	1.45	-.40	-.26	-.79
4	.18	-1.20	-.25	1.26

Chi Square = 8.455 DF = 9

Probability = .4890

TABLE 95

Contingency Table 13 (Church Affiliated Hospital)

Project: Totals Hierarchical Levels

Row ID: Number of Levels = 6

Column ID: Number of Levels = 5

Observed Data

Hierarchical Levels		Amount of Control					Total
		Little	Some	Quite a bit	Great deal	Very great deal	
		1	2	3	4	5	
Governing Body	(1)	3	9	24	55	96	187
Administrator	(2)	1	1	15	75	95	187
Directors	(3)	3	36	79	54	15	187
Department Heads	(4)	9	63	77	25	13	187
First Line Supervisors	(5)	64	88	27	8	0	187
Nonsupervisory	(6)	112	61	11	3	0	187
TOTALS		192	258	233	220	219	1122

(O-E) Residuals

	1	2	3	3	5
1	-29.00	-34.00	-14.83	18.33	59.50
2	-31.00	-42.00	-23.83	38.33	58.50
3	-29.00	-7.00	40.17	17.33	-21.50
4	-23.00	20.00	38.17	-11.67	-23.50

TABLE 95 Continued

(O-E) Residuals

	1	2	3	4	5
5	32.00	45.00	-11.83	-28.67	-36.50
6	80.00	18.00	-27.83	-33.67	-36.50

Chi Square = 993.028

DF = 20

Probability = .0000

TABLE 96

Contingency Table 14 (Nonchurch Affiliated Hospital)

Project: Totals Hierarchical Levels

Row ID: Number of Levels = 6

Column ID: Number of Levels = 5

Observed Data

Hierarchical Levels		Amount of Control					Total
		Little	Some	Quite a bit	Great deal	Very great deal	
		1	2	3	4	5	
Governing Body	(1)	3	4	23	62	99	191
Administrator	(2)	1	1	20	69	100	191
Directors	(3)	5	38	85	49	14	191
Department Heads	(4)	9	80	70	20	12	191
First Line Supervisors	(5)	49	101	24	11	6	191
Nonsupervisory	(6)	105	69	13	1	3	191
TOTALS		172	293	235	212	234	1146

(O-E) Residuals

	1	2	3	4	5
1	-25.67	-44.83	-16.17	26.67	60.00
2	-27.67	-47.83	-19.17	33.67	61.00
3	-23.67	-10.83	45.83	13.67	-25.00
4	-19.67	31.17	30.83	-15.33	-27.00

TABLE 96 continued

(D-E) Residuals

	1	2	3	4	5
5	20.33	52.17	-15.17	-24.33	-33.00
6	76.33	20.17	-26.17	-34.33	-36.00

Chi Square = 989.929

DF = 20

Probability = .0000

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BIOGRAPHICAL SKETCH

B.H. Corum was born November 12, 1933, in Hillsboro, Alabama. He received his elementary school, junior high school and high school education in the public schools of Hillsboro, Courtland and Town Creek, Alabama, respectively, and was graduated from the Hazlewood High School in Town Creek, Alabama, in 1951. On September 24, 1951, he entered Auburn University at Auburn, Alabama, and on August 27, 1955, was graduated with a Bachelor of Science degree in pharmacy.

He was employed by the Model Drug Company of Leighton, Alabama as a pharmacist from September 1, 1955 to September 1, 1956. In October, 1956 he passed the Alabama State Board of Pharmacy Examination, which granted him all the rights and privileges of a licensed, registered pharmacist in the State of Alabama.

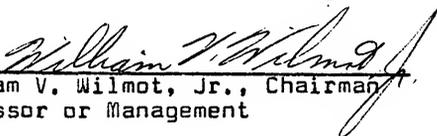
The author was commissioned a Second Lieutenant in the United States Air Force on August 27, 1955, and entered active military service on November 6, 1956, at Lackland Air Force Base, Texas. Since that time he has had many different assignments throughout Europe and the United States. Currently he is a Lieutenant Colonel assigned to

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During military service he has continued his education through course work at the University of Alabama, University of Maryland and Baylor University, from which he was graduated on August 24, 1962 with a master's degree in hospital administration. His work toward the Doctor of Philosophy degree has been accomplished at the University of Florida.

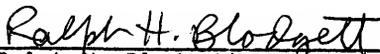
B.H. Corum is married to the former Carol Hill, and they have one daughter. He is an ordained deacon in the Baptist Church and a member of the National Beta Club and the Academy of Management as well as a past member of the American Hospital and Pharmaceutical Associations. The author is also a nominee in the American College of Hospital Administrators.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.



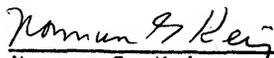
William V. Wilmot, Jr., Chairman
Professor of Management

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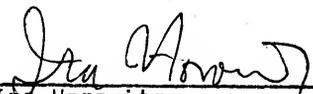
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Professor of Economics

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Norman G. Keig
Associate Professor of Economics

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.



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This dissertation was submitted to the Graduate Faculty of the Department of Management in the College of Business Administration and to the Graduate Council, and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

June 1975

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