

POWER AND ORGANIZATIONAL DECISION
MAKING: RESOURCE ALLOCATION
AT A STATE UNIVERSITY

By

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CHAPTER I

INTRODUCTION

Background

Dahl (1957, p. 201) has stated that "the concept of power is as ubiquitous as any that social theory can boast." Yet, empirical studies dealing with power and resource allocations within organizations are noticeably absent from the literature. Budgetary decisions represent a process in which power plays an important role (Wildavsky, 1968). Thus, the topic of power and the activities by which power is generated and exercised are important research areas.

In most of the literature on organizations, the issues discussed reflect a bureaucratic, rational perspective. The material regarding resource allocation is no exception. Dressel and Simon (1976) stated:

Have efficient and effective methods of resource allocation compatible with institutional organization, goals and needs been put into effect? We believe . . . that the answer is negative. This is largely because practicable resource allocation models still need to be developed, ones that are predicated on the basic organizational unit of universities, the department, and built on a planning frame that facilitates redistribution of resources on the bases of the goals of the institution and the roles of departments in fulfilling them (p. 1).

Budgeting strategies have been developed as a means to gain insight into and control of the budget. University departments are labor intensive such that faculty salaries represent the largest single departmental expenditure. Also, the tenure system contributes to an incremental (or decremental) type of budgeting in which last year's budget is increased or decreased according to the overall funds available and the anticipated student credit hour load of that department for the coming year. One such strategy is the direct cost approach in which the number of student credit hours is predicted for the coming year. These hours are then multiplied by some cost factor which determines allocations. Dressel and Simon (1976) advocated a similar form of formula budgeting. Though he conceded that this method is unlikely to provide a satisfactory approach for all departments, he argued that discrepancies between the formula estimate and the actual budget encourage scrutiny of the departments' operations to determine the reason for any discrepancy. By pursuing this task, universities are able to reallocate monies to achieve greater efficiency.

Pfeffer (1974) argued that there are two classes of decision variables that need to be used to determine resource allocations. Certainly there are those variables which represent universalistic or bureaucratic criteria. Those most commonly identified are student credit hours generated, full-time equivalent teaching faculty, and

faculty productivity as measured by various forms of scholarly output.

Most researchers employ this strategy and then proceed to derive and test propositions using these variables. Such an approach neglects one of the more important aspects of organizational structure. The structure of the organization itself may represent the outcome of a political contest for control and influence over the organization's critical resources.

March (1962), Cyert and March (1963) Baldrige (1971; 1978), and Bacharach and Lawler (1980) support Pfeffer (1981) in his argument for the use of political variables as a second category of decision variables. Here organizations are conceptualized, in part, as coalitions; the critical issue is not just the consequences of various structural arrangements, but who gains or loses from those consequences. Thus, it is argued that resource allocation decisions are partly political in nature. To understand budgetary allocations within organizations, considerations of the relative power of subunits are necessary in addition to considerations of bureaucratic criteria.

Pfeffer (1981) suggested that an individual, subunit, or organization has more power with respect to some special actors and less power with respect to others. Thus, power is context or situation specific. This is not to say that power is necessarily related to a limited set of decision issues. Whether or not power is generalizable across

decision issues is the relevant empirical question needing to be addressed.

Most studies of power in organizations have concentrated on hierarchical power. This vertical dimension of power is important, but it is only one dimension of power. Perrow (1972) acknowledged:

It is my impression that for all the discussion of research regarding power in organizations, the preoccupation with interpersonal power has led us to neglect one of the most obvious aspects of this subject: in complex organizations, tasks are divided up between a few major departments or subunits, and all of these subunits are not likely to be equally powerful (p. 59).

This researcher concurs with Pfeffer (1981) that this statement implies the recognition that power is a structural phenomenon. It is created by a division of labor and departmentalization that characterizes complex organizations. The structural approach to power constitutes the emphasis of the research, although individual characteristics which affect the exercise of structurally-determined power will be explored and incorporated into the study.

Statement of the Problem

Following the research of Pfeffer (1974), the purpose of this research was to examine the extent to which budgetary allocations to departments are explained by political and bureaucratic factors. The major research questions which guided the study were developed to operationalize those factors.

The research questions which examined bureaucratic variables and their relationship to budgetary allocations were:

1. What proportion of the university budget allocated to departments can be explained by their proportion of student credit hours?

2. What proportion of the university budget allocated to departments can be explained by their proportion of full-time equivalent faculty?

The research questions which examined the political variables and their relationship to budgetary allocations were:

1. What is the proportion of the university budget allocated to departments that can be explained by the length of tenure of the department head?

2. What is the proportion of the total university budget received by departments which can be explained by the department heads' perception of their relative power within the organization?

3. What is the proportion of the total university budget received by departments which can be explained by the proportion of departmental representation on university committees which influence budgetary decisions?

The population selected for the study was all doctoral degree granting departments at Oklahoma State University. Pearson's Product Moment Correlation and stepwise multiple regression analysis were the statistical

techniques used to test the set of independent variables against the dependent variables, budgetary allocations to departments. Analyses were performed in single years and longitudinally.

Importance of the Study

All social systems must allocate scarce resources. Pondy (1970) noted that although sociologists have devoted more attention to studying the structure and behavior of formal organizations than other social scientists, they, too, have tended to ignore the resource allocation problem and its implications for organizational decision making.

The critical issue raised by the present analysis is the criteria which are used in making resource allocation decisions. If the relative power of various criteria within a single institution can be assessed, it should be possible to begin to develop comparative studies which specify conditions affecting decision making and resource allocation. This study employed a quantitative methodology for assessing which variables most affect budget allocations. Thus, the importance of various political and bureaucratic criteria can be measured more precisely. Regarding their own work, Salancik and Pfeffer (1974, p. 472) have stated: "With the paucity of empirical studies of resource allocation within organizations . . . the propositions and their generalizations must await additional empirical work."

This research will add to the body of empirical work done primarily by Pfeffer and his associates (1974, 1977, 1981). The work of this group has been conducted exclusively at large, prestigious research institutions. It is necessary to perform similar research at different institutions in order to provide data for comparative studies.

CHAPTER II

REVIEW OF THE LITERATURE

Organizational Theories

Bureaucratic Theories

In studies of organizational decision making, different models present different variables relevant to the decision process. The bureaucratic model of organizations specifies a well-defined authority structure. Decision strategies are rational, computational, optimizing, and related to the attainment of organizational goals. Weber (1947) views the bureaucratic organization as achieving its mission through efficiency in and among offices. A cornerstone of the Weberian bureaucracy is the use of impersonal evaluations of organizationally-relevant performance as a basis for promotion and distribution of rewards within the system. The structure is hierarchical and is linked by formal chains of command and systems of communications.

Baldrige (1971) acknowledged that there are prominent bureaucratic elements within a university environment which cannot be ignored. There is a formal hierarchy with offices and a set of bylaws that specify the relations

between or among those offices. There are formal channels of communication and authority that must be respected. Formal policies govern much of the institution's routine work (see also Stroup, 1966; Anderson, 1966).

Baldrige (1971) argued that the bureaucratic paradigm is weak when it attempts to deal with nonformal types of power and influence. It explains adequately the formal structure, but it ignores the processes that give dynamism to the structure. It explains how policies are executed after they are set, but the bureaucratic model says little about the process by which policies are established in the first place. In short, this model of organizational decision making fails to deal with political issues such as the struggles of special groups which want to influence policy decisions favorable to their particular interests.

A popular theory in organizational design literature that reflects the limitations of the bureaucratic model is structural contingency theory. The basic supposition within this theory is that there is no best way to organize. Rather, the appropriate organizational structure depends on the contingencies confronting the organization (e.g., technology, environment, size). Although this approach has been supported in the classic organizational literature (Woodward, 1965; Lawrence and Lorsch, 1967; Duncan, 1972; Burns and Stalker, 1961; Dill, 1958), it has theoretical shortcomings. Most importantly, structural contingency theory presupposes the existence of

rationally-defined, consistent, agreed-upon goals. This model does not allow for examination of whose goals are to prevail.

Bacharach and Lawler (1980) argued that organizational theorists often fail to recognize that the Weberian perspective is based on a concern with group and individual action, and that Weber, himself, viewed organizational structure as emerging from the conscious political decisions of interest groups. Weber viewed organizations as imperatively coordinated systems. According to Bacharach and Lawler, organizational theorists have concentrated on Weber's exposition of coordination and have tended to ignore the imperative dimension. Therefore, they have been preoccupied with formal mechanisms of coordination without recognizing the power and political negotiations that buttress these mechanisms.

Blau and Schoenherr (1971) represent this one-sided view of Weber, and students working with their structural tradition have been guided by two assumptions that inhibit the development of a political interpretation of intraorganizational behavior. They have tended to view organizations as normatively integrated systems, thereby ignoring political tensions. Their macro interpretation of organizational behavior overlooks subunits as interest groups, a view which is crucial to the development of a political perspective. Other prominent theorists who have adopted

an apolitical view of organizations include Hage and Aken (1970) and Pugh (1968).

Political Theories

Despite the stronghold of the structural bureaucratic tradition, some social scientists have been concerned with power in organizations. Etzioni (1961) contended that any examination of compliance relationships (i.e., power relations among groups of actors within an organization) is essential to an exposition of the Weberian model. Even Blau (1964) maintained that an examination of social power in exchange relationships will aid our understanding of social structures. Crozier (1964) and Selznick (1949) contended that power is the central concept within intraorganizational behavior. Crozier asserted that it is the patterns of intraorganizational policies that have remained virtually unexamined. Bacharach and Lawler (1980) argued that Crozier's own work fails to address adequately this issue. Largely because of its case study approach, it fails to develop fully a series of hypotheses which can be examined across a large number of organizations.

✓ Although Baldrige's (1971, 1978) research was also limited due to its heavy reliance on case studies, it offers insight into the political realities of organizational decision making, particularly in university environments. There are three basic thrusts in Baldrige's (1971, 1978) work. The first is the heavy emphasis on policy

formulation. This term refers to the subset of decisions that have long-range importance--the critical rather than routine decisions. The second emphasis is the study of conflict processes in the university. Of special concern is the type of conflict that develops when interest groups attempt to influence policy decisions. Last, he concentrates on the change dynamics within the university. ✓

Baldrige (1971, 1978) contrasted the bureaucratic model and the collegial models with the political model. The bureaucratic model is derived from Weberian analysis.

In the collegial model, it is assumed that there is full participation of the members of the academic community in its management. Within this model, the community of scholars administers its own affairs, and bureaucratic officials have little influence. Millet (1962), a major proponent of this model, has declared:

The concept of community presupposes an organization in which functions are differentiated, and in which specialization must be brought together, or coordination, if you will, is achieved not through a structure of superordination and subordination of persons and groups, but through a dynamic of consensus (p. 235).

✓ Another major facet of the collegial model is the concept of professionalism. Parsons (1947) contended that professionalism is based on the professional's own superior expertise and competence, which is apart from the concept of hierarchical authority. Professionals expect to work independently, perhaps seeking the counsel of more experienced and competent colleagues, but still making their own decisions and accepting the consequences.

Although there are several criticisms of the collegial model, the primary one is its failure to deal adequately with conflict. Decisions that appear to be consensual may actually be the result of prolonged battles among contending interest groups. Many studies (Becker, 1953; Kornhauser, 1962; Ben-David, 1958) have indicated that professionals are dissatisfied with supervisory and managerial arrangements within their organizations, and conflicts in the area of authority relations for professionals employed in a bureaucracy are widespread.

Baldrige (1971) attempted to incorporate salient aspects of organizational behavior into a political model. He incorporated insightful components of the bureaucratic and collegial models in developing a political interpretation of university decision making. The theoretical perspectives he utilizes are conflict theory, community power theory, and interest group theory.

Conflict theory, derived from Marx, has been extended to analyze modern society (Dahrendorf, 1959; Coser, 1956; Gamson, 1968; Cartwright, 1956). Central to all this research is the emphasis upon interest groups, each with its own particular goals, the analysis of the social processes by which one group tries to gain advantage over another, and the study of the conflicting interests themselves.

Community power studies are focused on the nature of power in the political system, the types of power that are

available, and the manner in which they are articulated. The role of interest groups within the political arena is emphasized. Last, the various theorists (Hunter, 1963; Polsby, 1963) emphasize the political activities involved in goal setting. This latter view is in marked contrast to that of the conventional organizational theorists who concentrate on improving the technical means by which organizations accomplish rationally determined goals.

There are three classic sources for the study of organizational interest groups. Prison studies have been excellent sources traditionally (Cressey, 1961; Ephron, 1961). Another body of organizational interest group studies has come from industrial settings. The classic work of Roethlisberger and Dickson (1939), as well as others writing in the human relations tradition, devoted some attention to interest group influence on the total organization, even if this is not their primary concern (Dalton, 1959; Blau and Scott, 1962).

All of this research deals with interest groups and the importance of group influence in the determination of the goals of the organization. When conflict theory, community power theory, and interest group theory are linked, they form the theoretical background to Baldrige's (1971) political model which can be summarized as:

A complex social structure (which) generates multiple pressures, (has) many forms of power and pressure (which) impinge on the decision makers; a legislative stage translates these pressures into policy, and a policy execution phase generates feedback in the form of new conflict (p. 24).

It must be noted that Baldrige's (1971) approach is unique to studies of organizational decision making in that it focuses on the formulation rather than the execution dimension. The role that interest groups play in pressuring decision makers toward policy formulation is a crucial element in the analysis and has important implications for a study of the bases and uses of power in resource allocation.

✓ Bacharach and Lawler (1980) insisted that the key point underlying the relational aspect of power is that, regardless of the unit of analysis, researchers must acknowledge the dynamics of power relationships. Once they begin to analyze the interactional aspects, they must ascertain who the key actors are. Emphasis on the means by which groups within an organization compete for scarce resources and the manner in which units interact with other units vertically and horizontally are relational aspects of power that represent a shift in the way power in organizations has been typically studied. Bacharach and Lawler (1980) have developed one of the most comprehensive coalitional theories of organizations to date. They argue that previous studies have been limited due to the unit of analysis employed. Analysis of the organization as a whole assumes that the organization is a rational system of interdependent units functionally held together by a common goal. Attention is focused on structure and work processes (Bacharach, 1978). The problems associated with this

traditional perspective include its failure to depict organizations as dynamic entities subject to conflict and change. Structure has been reified and has become the focal point of analysis. Social control processes are simply referred to as organizational formulations (Bacharach and Lawler, 1980).

The other extreme position is that of analyzing organizations by focusing on the individual. The individualistic perspective assumes organizations are heterogeneous and subjective. Researchers have difficulty explaining how actors coordinate their actions with others to accomplish shared objectives (Bacharach and Lawler, 1980).

Another alternative, according to these authors, is an organizational model based on the group as the unit of analysis. This perspective affords a middle ground between concentrations on aggregate and on individual data. They argue that the potential for this group model has not been realized. In attempting to provide a political perspective for intraorganizational analysis, these authors stress interest groups and coalitions as the basic units of analysis. Specifically, they discuss how interest groups form and operate to influence organizational outcomes. They argue that an understanding of coalitions and bargaining is necessary to comprehend organizational politics. Coalitions are defined as socially constructed groupings such as work groups and interest groups. They

cut across and modify the day-to-day manifestations of the formal structure. Coalitions are central to organizational politics because they are emergent products of the informal influence processes. The nature and frequency of the coalition processes will vary in centralized and decentralized operations with decentralized organizations being more susceptible to the coalition formulation process.

It should be noted that coalitions differ from interest groups, in that the latter are natural groups which form among persons from different sectors of the organization. Thus, coalition theory encompasses collective bargaining in a way that interest group theory does not. Bacharach and Lawler (1980) note that bargaining may be subtle, hidden, or not even recognized by conflicting coalitions. Yet, they argue that bargaining is the most appropriate metaphor for analyzing relations among coalitions.

The importance of the recent research of Bacharach and Lawler (1980), in addition to its comprehensiveness, is that it supplies testable hypotheses. However, its limitations should be noted. More attention needs to be paid to the fluidity and/or stability of the network of coalitions within organizations. More research is suggested with respect to the nature of the interest groups joined by coalitions, such as how the mobilizations process develops and the exact type of bargaining that is manifested between and among segments of the concern.

Cyert and March (1963) and March (1962) have argued that organizations are coalitions with many different interests represented. Decision making procedures are constrained by the limited search and information-processing capabilities and are guided by the need to reduce organizational conflict that results from the different organizational interests. Cyert and March proposed that organizations typically use standard operating procedures, rely heavily on precedent, attend to goals sequentially, engage in satisficing behavior, and never fully resolve the conflict implicit in the different preferences of organizational participants.

Cyert's and March's (1963) propositions have been tested in a comparative study of executives in 109 companies. Stagner (1969, p. 12) found that executives reported that "strong divisions within the company may get their way without regard of the welfare of the whole." This statement suggests that organizational decisions may be based on the particular interests of coalitions within the organization.

Other researchers have broadened the empirical work on power by studying intraorganizational differences in power between hierarchical levels (Bacharach and Aiken, 1976) and among subunits (Perrow, 1970; Blau and Schoenherr, 1971; Hinnings et al., 1974; Lodahl and Gordon, 1973; Salancik and Pfeffer, 1974; Beyer, 1978; Hills and

Mahoney, 1978). These studies all focus attention on power as important macro-level concept.

Power in Organizations

Introduction

✓ The preceding section has demonstrated that power is a critical element of a political analysis of organizations.

Bacharach and Lawler (1980) have stated correctly:

In spite of the extensive concern about power on both levels (conceptual and empirical), there appears to be little consensus about the meaning of power or its application to concrete social circumstances (p. 10). ✕

Most conceptions of power are based on Weber's (1947) classic definition which states that power is the probability that a person can carry out his/her will without resistance. Most theorists agree with the broad definition, but there are differences in interpretations. For example, Bierstedt (1950) portrayed power as an ability to apply sanctions. Thus, it is a potential and not to be confused with the actual use of force. Furthermore, power is distinguished from influence. Power implies involuntary submission, whereas influence is persuasive and implies voluntary submission.

Dahl (1957) fused the "potential" and "use" dimensions of power and equated power with influence. Power is viewed in terms of cause and effect. From Dahl's perspective, power is exercised whenever one party affects the behavior

of another. Likewise, Emerson (1962) defined the power of A over B as equal to the dependence of B upon A. Quite simply, power derives from having something that someone else wants or needs and from being in control of the resources so that there are few, if any, alternative sources for obtaining what is desired.

Wrong (1968) differentiated among potential power, actual power, and the potential for power. He suggested that greater attention should be paid to the subjective nature of power and the processes of power acquisition. Wrong argued that the potential for power may be sufficient to alter the behavior of others. The compliance of actors is often based on their subjective expectation that the potential can and will be used when necessary. Thus, potential may make use unnecessary. Wrong further maintained that groups may have a potential for power through which they can acquire power in a particular relationship, if necessary.

Bacharach and Lawler (1980) proposed three formal dimensions of power: the relational aspect, the dependence aspect, and the sanctioning aspect. They maintained that:

Power must be embedded in the social relationship and not treated as an attribute of a single person, group, or organization. The relationship can and should be portrayed in terms of dependence. The patterns and degree of dependence are the basic parameters . . . within which actors affect one another. Within the dependence relationship, actors confront the issue of when to use sanctions and whether sanctions will be effective with

respect to the other party. Thus, a power analysis should further determine when the actors generally use power . . . and when the use of power yields results (p. 26).

There are many other differences among conceptualizations of power, and other theoretical treatments reveal further complexities (Blau, 1964; Etzioni, 1961; French and Raven, 1959; Tedeschi and Bonoma, 1972; Thibaut and Kelley, 1959). However, this discussion has illustrated the difficulty researchers have in operationalizing power and testing the concept within a theoretical framework.

Defining organizational politics is as difficult as defining power. One must distinguish between political activity and administrative activity in general. Pfeffer (1981) defined organizational politics as involving:

those activities taken within organizations to acquire, develop and use power and other resources to obtain one's preferred outcomes in a situation in which there is uncertainty or dissensus about choices (p. 7).

Politics, therefore, involve the exercise of power to accomplish an act or to expand power already possessed or the scope over which it is exercised. Thus, it is essential to develop mechanisms to distinguish between outcomes which are the result of precedent or application of rational decision procedures and those outcomes which are produced through use of power.

Assessing Power in Organizations

✓ In organizational decision making, such as in the resource allocation process, there is a social value attached

to rationality. This statement implies that in the allocation process, the use of power must be relatively unobtrusive (Pfeffer, 1977). Every attempt is made to legitimate both the decision process and the outcome through recourse to objective, universalistic, standards of behavior. ✓ Thus, for those who could conduct research on the topic of power, an accurate assessment of power is important. If we are to assess whether power is correlated with other attributes or is stable over time, then power will have to be measured.

Two tasks are required in order to measure power: the principal organizational actors need to be identified, and their relative power must be determined. Several methods of developing estimates of power for use in predicting organizational outcomes are identified in the literature.

Dahl (1957) discussed the importance of distinguishing between a social actor's ability to influence a situation and the ability to predict what would have occurred in any event. March (1966) discussed the principle of consistency which describes the interaction between multiple events and the probability of inferring social power.

Power is also assessed by its determinants (Gamson, 1968). Instead of measuring power directly, this method focuses on developing an understanding of what causes social actors to have power in the first place.

More important to the present research is assessing power by its consequences. The distribution of power can be assessed by examining its manifestations within the organization. One way is to see which social actors benefit and to what extent (Pfeffer, 1981). There are various examples of the consequences of power, including budget distributions among subunits and the allocation of positions.

✓ In order to diagnose the distribution of power by examining the consequences, it is necessary to be able to ascertain the circumstances in which power has had an effect and to be able to determine who has won or lost in such a contest. The latter may present difficulty in that it is not in the interests of persons within the organization to publicize the winners and losers. For persons who have fared relatively poorly, the announcement of such merely reaffirms their weak position. The winners may perceive disadvantages from disclosing their position. Most critical to them is the risk of setting in motion coalitions which may make winning future decisions much more difficult. Those groups who fare relatively well in organizational decisions are not likely to publicize this fact.

One way of finding out where power lies in organizations is to ask people. Perrow (1970), Hinnings et al. (1974), Pfeffer and Salancik (1978), and Pfeffer and Moore (1980) employed methodologies that ask respondents to rank

various subunits with regard to the relative power they perceive the subunits possess.

Pfeffer (1981) acknowledged that asking this question may produce answers that provide the appearance of a stratified system of power where none really exists. Thus, he advocated correlating reputational measures with other measures of power within organizations and ascertaining if power, as assessed by this method, does predict the outcome of organizational decision making.

Pfeffer (1981) conceded that the reputational method of assessing organizational power assumes that social actors are knowledgeable about power within their organization; informants are willing to divulge their knowledge about the power structure; and such a questioning process will not in itself create the phenomenon under consideration (power).

The reputational method of assessing power may be troublesome when the normative structure of the organization stresses the illegitimacy of politics in decision making. However, to the extent that this factor can be controlled, the reputational measure of power provides evidence that there are socially shared judgments concerning the distribution of power. In a study of power at the University of Illinois (Pfeffer and Salancik, 1978), there was consistency among department heads regarding, particularly, the most and the least powerful department.

Reputational indicators of power are limited by their inability to assess distributions of power over time. Representational indicators assess the position of organizational members in influential roles such as membership on key committees or in high-level administrative posts. These indicators are available as long as the position and committee occupants and their affiliations can be obtained from organizational records. This measure has two advantages. It provides indicators of power distribution over time, and the data can be gathered unobtrusively so as not to violate organizational myths regarding the political aspect of decision making.

In the studies of Pfeffer and Salancik (1978) and Pfeffer and Moore (1980), there were high correlations between reputational power measures and representational power indicators at two universities. This finding provides evidence that some of the methods of assessing power do converge.

To maintain the unobtrusiveness of power, it is important to use legitimate, accepted procedures for allocating resources in organizations (Pfeffer, 1977). Consequently, the use of committees is frequently employed to legitimate decisions in organizations. The use of committees offers several advantages (Vroom and Yetton, 1973). First, the decision is (or appears to be) diffused. Representation of interests on a committee will tend to ensure that various groups feel that they have had an

effect on the decision. Committee decisions are perceived to be democratic, and thus they appear to be more consistent with the democratic norms and values which prevail.

Stagner (1969) maintained that, as committees are established to legitimate decisions, they are important not so much for their function as for their existence. It is the process of cooperation and of interest representation which is critical in providing acceptance and legitimacy of decisions. Powerful subgroups that are strongly represented on key committees can maximize this aspect to their benefit.

Perhaps as important as knowing the distribution of power in an organization is understanding the informal ways in which decisions are actually made within the system. This knowledge is not likely to be freely dispensed. There have been relatively few studies of influence strategies that have examined the effectiveness of the strategies employed and the role of personal skills involved. Pfeffer and Salancik (1978) have reported that these skills have their greatest effects on the allocation of less critical and scarce resources. It appears that the more important a resource is within an organization, the less likely it is that the decision can be affected by the administrator's knowledge of the politics of the decision. This view is supported by Bucher (1970), who noted:

Does participation in an extensive network of relationships both inside and outside the department constitute in itself a source of power?

The data suggest that extensiveness of role-set is a necessary but not sufficient condition for power . . . (p. 37).

The model of organizational resource allocation presented in this section is one in which power and influence operate to affect decision outcomes using tactics which are as unobtrusive as possible. Legitimacy of the allocation procedures is critical. Pfeffer (1977) argued that the meaning attached to decisions and outcomes becomes a focus for the use of power; thus, the construction of meaning given to organizational actions becomes an arena for the use of influence. The point is that the definition of social reality is critical in maintaining the stability of the organization and the positions of those departments with power.

There is another reason why the outcome of organizational politics may not be readily visible. Parsons and Smelzer (1956) note that rationality is a valued social ideal. Rational decision making is to be kept for external and internal system maintenance at all costs.

Thus, it is in the organization's vested interest to make decisions appear to be made rationally. If this requires making outcomes of decisions less visible so that the distribution of rewards is less readily discerned, such activity will take place. In the absence of hard indicators, the norm of rationality is easily maintained. Pfeffer (1981) summarized this view quite succinctly:

The winners and losers are often difficult to discern. Winners appear not to have won very much. Losers act as if they did better than they had hoped . . . discerning power by observing its consequences . . . requires access to decision outcomes that may be problematic. . . . It is in the interests of few parties to make such information too readily available (p. 50).

It is necessary to recognize the inevitability of the political nature of resource allocation decisions. However, Pfeffer and Salancik (1978) note that subunit power can affect organizational decisions only to the extent that such decisions are not otherwise constrained. There is likely to be more external constraint on public than on private universities and on those organizations which are newer or less prestigious and have less power relative to such external agencies as boards or legislatures. Furthermore, there is likely to be a greater use of power in decision making in universities which have more flexibility, because they are likely to have more discretionary funds to allocate.

Studies of Power and Resource Allocation in Public Institutions

There are relatively few recent studies which deal specifically with organizational decision making and resource allocations to public institutions. The most prolific scholar in this area is Pfeffer, a professor at Stanford University. Beginning in 1974, Pfeffer began a

series of research projects which dealt with various components of the budgeting process.

In a study conducted at the University of Illinois in 1972, Pfeffer (1974) tested the effect of departmental power on resource allocations. The dependent variable was the proportional allocation of discretionary resources to the various departments in the university. Several measures of subunit power were developed (e.g., interviews with department heads, committee representation, instructional work load). Measures of departmental power were found to be significantly related to the proportion of the budget received, even after controlling for work load, the effect of College, national rank, and number of faculty. The more powerful the department was, based on political criteria, the less the allocated resources were a function of departmental work load and student demand for the courses.

A later study by Salancik and Pfeffer (1978) tested the effects of subunit power and the bases of power on organizational decision making. This research was conducted at the University of Illinois and used the data base compiled in the 1972 study. The results of this research indicated that departmental power was most highly correlated with a department's ability to obtain outside grants and contracts. Thus, they found support for the hypothesis that subunits acquire power to the extent that they provide resources critical to the organization.

Power affects resource allocation in so far as that resource is critical to the subunits and scarce within the organization.

Additional research by Pfeffer and Salancik (1978), using the 1972 data base, produced results which indicated that departments which were in a position to advocate the use of criteria favorable to their unit were more successful in obtaining resources from the organization. This effect was especially true for the more powerful departments and true when the resources were relatively less critical but scarce within the organization. Knowledge about the organization's political structure benefited the less powerful departments when the resources were allocated through committees of department representatives. However, for general funds allocations made through an administrative decision process, advocacy tended to decrease allocations. This effect was more pronounced in the more powerful departments. The authors suggested that these results showed that subunit power is derived through an interdependence between the subunit and the rest of the organization, from the function of the resources the subunit provides, and from the importance of these resources to the organization. In a university which values graduate education, research and extramural contracts are important determinants of departmental power. As these characteristics are stable (at least in the short run), they do not depend as extensively on the effectiveness of department

chairmen. The study further suggested that the effectiveness of a particular strategy depends in part on the decision being made, on the initial power of the subunit, and on the system of governance and control in which the decision takes place. Pfeffer (1978) has stated that:

If structure is the mechanism for control, the representation of control, and the manifestation of organizational power and influence, then it is logical to presume that structure will differ depending on the distribution and particularly the concentration of power in the organization (p. 46).

As has been previously discussed, one of the tenets of bureaucracy is basing organizational decisions on universalistic criteria. From the literature on social comparison processes (Perrow, 1972; Maniha, 1975; Cyert and March, 1963; Thompson and Tuden, 1959), it is argued that particularistic criteria derived from social influence will be employed in decision making under conditions of uncertainty. Pfeffer, Salancik, and Leblebici (1976) used level of paradigm development as a measure of uncertainty in science. Their study investigated the effects of National Science Foundation Grants in four social sciences over a seven year period. It was found that average year-to-year stability in grant allocations was lower in the disciplines with less developed paradigms. This research strengthened the argument that more attention should be given to the nature of the criteria used in organizational decision processes.

Hills and Mahoney (1978) attempted to verify the efforts of Pfeffer and Salancik (1978) and Salancik and Pfeffer (1974) by examining the role of power in the same resource allocation under varying degrees of resource scarcity. Their study was conducted at the University of Minnesota and focused on budget allocations to departments during the years 1964-1975. This time span included periods of both scarcity and abundance of resources. Their data suggest that decisions using political criteria were evident when resources were relatively scarce. A bureaucratic criterion such as instructional work load was influential in the allocation of resources only during the period of relative abundance.

In an extension of the earlier study of Pfeffer (1974), Pfeffer and Moore (1980) examined the determinants of power and budget allocations on two campuses of a large state university system. Faculty positions and budget allocations were found to be a function of enrollment and departmental power. Department power was related to both student enrollments and the amount of the department's grants and contract funds. An additional variable, level of paradigm development of the department, was found to predict the amount of grants and contracts as well as to help explain budget allocations. In a comparison of resource allocations on the two campuses, it was found that enrollments were the best predictor of allocation for the campus that had the more abundant resources.

Summary

✓ Distinguishing between bureaucratic and political models of organizations is difficult. Pfeffer (1981) stated that if the distribution of power is stable (which is a reasonable assumption for the short run); and if politics determines organizational decisions, then decisions should remain relatively stable over time. This stability is also a primary characteristic of the bureaucratic model. One way to distinguish between the two is to look at correlates of incremental changes in allocations in an organization. Both models might be consistent with the use of precedent for the bulk of decisions, but there might be differences in how incremental resources are allocated. A bureaucratic model would reflect changes in resource allocation patterns following either a proportional basis or some other rational method which attempts to shift resources to achieve organizational goals more effectively. The political model, by contrast, would suggest that power measures would best predict shifts in allocations.

This researcher proceeded on the assumption that a typical complex organization would reflect characteristics of both models of organizational behavior. The procedures employed represent an attempt to discern which model is the most representative over time with respect to budgetary allocations to departments. Thus, measures were developed to test both bureaucratic and political variables.

The initial study, from which the present research was patterned, was conducted by Pfeffer (1974) at the University of Illinois at Urbana-Champaign. In this prestigious university there were 34,000 students, of which 8,000 were graduate students. The unit of analysis was the academic department (of which there were 29 in the sample). Budget data were gathered over a 13 year period. The dependent variable was the average proportion of the general funds budget (i.e., those discretionary funds appropriated by the by the state legislature to the university and not committed by contract or bequest) that was received by each of the academic departments during that time. Independent variables include instructional work load of the department, departmental representation on key committees, and the perception of departments' power by department heads. Multiple regression analysis indicated that power measures, as well as bureaucratic measures, significantly affected budget allocations, even when size, College, and national prestige were statistically controlled.

This research extends the early research of Pfeffer and Salancik (1978). It represents a step in the extension of other studies by Pfeffer (1977, 1981). It marks a point of departure for examining other variables and their effects on organizational decision outcomes. Before generalizations can be made from Pfeffer's analyses (1974,

1977, 1981), studies of similar nature done in different types of organizational environments are essential.

Pfeffer and Moore (1980) stated:

In understanding power and political processes within organizations, it seems clear that it is time to proceed to comparative studies in which . . . the determinants of power vary. . . . Organizations vary in the extent to which they are political. . . . Substantial research is needed to understand comparative organizational power. The evidence from this and other studies of budget allocations indicate the importance of including specific operationalizations of social power as well as variables assessing . . . the operation of bureaucratic rational decision making (p. 652).

These comparative studies are important to conduct prior to any widespread generalization of the importance of specific bureaucratic or political criteria in predicting differential budget allocations. Finally, it is important to test the degree to which different types of educational environments conform to the political model of organizational analysis which has been proposed by Pfeffer (1974, 1977).

CHAPTER III

METHODOLOGY

Introduction

Analyses of budgets in public institutions offer distinct advantages in studying the effect of power on organizational decision making. The budget represents the outcome of a bargaining process which occurs within organizations over the setting of priorities. These objectives become represented in the budget (Cyert and March, 1963). Additionally, budgets are developed annually. Because they are visible, they provide opportunities for extending or replicating the research results.

Based on previous studies of organizational decision making, it was assumed that rational bureaucratic criteria would determine a large share of budgetary allocations to departments. This assumption is based on traditional models of organizational behavior (Weber, 1947) which focus on maximum use of resources through efficient and effective planning. However, it was expected that part of the budgetary allocation to departments could be explained by power (political) criteria. Wildavsky (1968, p. 193) stated: "If politics is regarded as conflict over whose

preferences are to prevail in the determination of policy, then the budget records the outcomes of this struggle."

Measures were thus developed to test the effects of both bureaucratic and power variables on budget allocation determinations. The researcher was interested in understanding the effect of these two categories of variables on budget allocations in single years, as well as over time. Statistical operations (Pearson's Product Moment Correlation and Multiple Regression analysis) were performed on the data in two single years, 1978 and 1980. The same process was then applied to the change in the data from 1978 to 1980, thus giving both static and longitudinal information.

Definition of Terms

The following terms are defined to provide clarity in conjunction with their use in this study:

Budget - The budget is that financial report containing estimates of income and expenses.

Bureaucratic Variables - The bureaucratic variables are represented by those decisions based on rational choice, and compose one dimension of the set of independent variables in the study. They are operationalized as student credit hour production by department, full-time equivalent faculty by department, and graduate assistants by department.

Faculty - Faculty are those persons having at least a 75 percent appointment for the years of the study and an academic rank of instructor, assistant professor, associate professor, or professor. Faculty holding emeritus appointments are excluded. Persons with administrative appointments as department heads are included.

Full-Time Equivalent Faculty - This term refers to the faculty whose work load is considered full-time as defined by the institution.

General Funds Budget - This term refers to those discretionary funds appropriated by the state legislature to the University and not committed by contract or bequest.

Instructional Units - Instructional units are defined as student credit hours, and these terms will be used interchangeably.

Key Committees - Those committees which have the authority to allocate and/or recommend scarce funds or which determine or influence educational policy with important budget implications will constitute key committees. Those used in the present study are: the budget committee of the Faculty Council; the five thrust committees of the Presidential Challenge Grant Program (water, food, human resources, energy, and materials). The latter group recommends and advises allocations of research funds.

Organization - The organization is defined as the total University (main campus) at Oklahoma State University, Stillwater, Oklahoma.

Power - Power is a concept defined as the ability of a department to affect decisions so that they conform more closely to what the department wants. The political variables compose one dimension of the set of independent variables. They are operationalized as the department heads' perception of their own and other departments in the study, departmental representation on selected committees which influence budgetary decisions, and the length of tenure of the department heads participating in the study. Political variables and power variables are used interchangeably throughout the study.

Resource Allocation - This concept is defined as the various monies which are channeled to departments within the University. In this case, monies are restricted to those in the general funds budget. For purposes of this study, it is assumed that the allocation and expenditures are the same; thus, the terms will be used interchangeably.

Restricted Funds - The term refers to extramural grants and contracts procured by academic departments.

Subunits - Subunits are the academic departments within the University.

Total College Expenditures - This term refers to the portion of total University expenditures expended by the individual Colleges: Agriculture, Arts and Sciences, Business, Education, Engineering, Home Economics.

Total College Salaries and Wages - This term refers to the portion of the total University salaries and wages budget consumed by individual Colleges in the study.

Total College Supplies and Expenses - This term refers to the portion of the total University supplies and expenses budget consumed by the Colleges in the study.

Total Departmental Expenditures - The term refers to that portion of the total University expenditures consumed by individual departments. For purposes of this study, this amount is considered to be the same as that amount allocated.

Total Departmental Salaries and Wages - The term refers to that share of the total University salaries and wages budget consumed by individual departments. For purposes of this study, this amount is considered to be the same as that amount allocated.

Total Departmental Supplies and Expenses - The term refers to that share of total University supplies and expenses consumed by individual departments. For this study, this amount is considered to be the same as that amount allocated.

Total University Expenditures - The term refers to the total amount of unrestricted funds allocated from the general funds budget to academic departments.

Total University Salaries and Wages - The term refers to that portion of total University expenditures restricted to salaries and wages allocated to academic departments.

Total University Supplies and Expenses - That portion of the University's expenditures restricted to supplies and expenses to academic departments is the budget for supplies and expenses. It is also referred to as the maintenance and operation budget.

Operational Measures of Variables

General Funds Budget

The principal dependent variable is the proportion of the discretionary unrestricted funds which are allocated to the University by the legislature and subsequently allocated to departments. In this study, available data were in the form of actual expenditures and thus will be considered to be the same as allocation data. By focusing on proportional shares to departments, the effects of growth and inflation are controlled. Analyses were performed on the data at two points in time: Fiscal Year 1978-79; 1980-81. The change between 1978 and 1980 was also included. The Office of Institutional Research could not provide data which were comparable for years prior to 1978-79.

The major dependent variable, total university expenditures, has been subdivided. Each dependent variable tested was stated in the form of a proportion. The following list comprises those derivations from the principal dependent variable:

1. Total expenditures by department as a proportion of the total university expenditures in 1978-79 ($\frac{\text{TED78}}{\text{TEU78}}$);
2. Total expenditures by department as a proportion of total university expenditures in 1980-81 ($\frac{\text{TED80}}{\text{TEU80}}$);
3. Change in total expenditures by department from 1978-79 to 1980-81 as a proportion of total university expenditures in 1978-79 ($\frac{\text{TED80}-\text{TED78}}{\text{TEU78}}$);
4. Total salaries and wages by department as a proportion of total university salaries and wages in 1978-79 ($\frac{\text{TSD78}}{\text{TSU78}}$);
5. Total salaries and wages by department as a proportion of total university salaries and wages in 1980-81 ($\frac{\text{TSD80}}{\text{TSU80}}$);
6. Change in total salaries and wages by department from 1978-79 to 1980-81 as a proportion of total university salaries and wages in 1978-79 ($\frac{\text{TSD80}-\text{TSD78}}{\text{TSU78}}$);
7. Total supplies and expenses by department as a proportion of total university supplies and expenses in 1978-79 ($\frac{\text{TSED78}}{\text{TSEU78}}$);
8. Total supplies and expenses by department as a proportion of total university supplies and expenses in 1980-81 ($\frac{\text{TSED80}}{\text{TSEU80}}$).
9. Change in total supplies and expenses by department from 1978-79 to 1980-81 as a proportion of total university supplies and expenses in 1978-79 ($\frac{\text{TSED80}-\text{TSED78}}{\text{TSEU78}}$).

Subunit Power

Political Variables. Measures of departmental power constitute one group of the independent, or explanatory variables. Because of the sensitivity of the issue of power in organizations, both direct and unobtrusive measures were obtained.

The first procedure involved administering a questionnaire (Appendix A) to heads of departments offering doctoral degrees at Oklahoma State University. They were asked for their rating of the power of each subunit, including their own, by responding to a five point Likert scale. A column for "don't know" was included as a response for unfamiliarity with a particular department. Power was defined on the instrument as the ability of the department to affect decisions so that they conform more closely with what the department wants (Perrow, 1970; Pfeffer and Salancik, 1974).

A university average of the perceived status of each department was obtained by computing the mean score of each department. The "don't know" responses were omitted in the computation of the average.

The unobtrusive measure of departmental political power was faculty membership on university committees which influences resource allocation or policy decisions affecting budget allocations. Two major categories of committees were selected. After consulting with administrators and members of the Faculty Council, the

following committees were identified as being the most influential with respect to the specified criteria:

The first category of committees are called Thrust Committees and are composed of five major thrust areas: water, food, energy, human resources, and materials. According to Dr. W. A. Sibley, Assistant Vice-President for Research (Nettleton, 1979), each thrust committee is an integral part of the Oklahoma State University Presidential Challenge Grant Program (PCGP). The PCGP sponsors an annual grants program to support outstanding faculty projects in each of the major thrust areas. Proposals chosen for awards are intended to lead to excellence and have the potential to attract outside funds. Dr. Sibley believes the committees, composed of 8 to 10 interdisciplinary faculty members in each thrust area, render a valuable service to the university by reviewing proposals submitted and assisting in the selection of those proposals ultimately chosen for the PCGP support. The committees monitor progress made in the research underway in a particular thrust area, and they lend their expertise in advising on the content of a proposal. This influence increases the proposal's potential for funding.

The budget committee of the Faculty Council was the other committee included in the analysis. According to the Faculty Handbook (1978), the budget committee is one of the Faculty Council's standing committees. These committees are the Council's operating agents. They are

available to consult with and advise administrators on matters of governance at all levels. The budget committee includes two or more members of the Faculty Council and three members from the general faculty. Its functions include the preparation and status of the university budget; salary surveys and studies; recommendations and long-range plans relating to the division of funds and resources among various university programs and activities. In addition, the committee is available to advise the President and other appropriate administrators on matters pertaining to the budget recommendations to be made to the Board of Regents for Oklahoma State University.

The length of tenure as department head was the final power variable to be included in the study. The assumption for its inclusion was based on Meyer's (1978) analysis of leadership succession on organizational structure. The supposition is that leadership stability represents the extent to which power is institutionalized. Once power is institutionalized, the possession of it enables those participants to obtain additional increments of power. Once power has been used to acquire critical resources, it can be perpetuated to provide as much or more power and/or resources in the future.

Bureaucratic Variables. Bureaucratic criteria are used to ascertain what decisions are apt to occur when rational choice is the explanatory factor, and thus they constitute the second category of independent variables.

Variables typically used in educational institutions' budgetary decisions were employed in the present study. They include: instructional work load as measured by total student credit hours taught by departments and full-time equivalent faculty members by departments. The data were expressed as a proportion of the University and/or College total in order to control for size, inflation, and the influence of College.

The reliability of the use of such criteria as those selected for this research is supported by a recent study (Jones, 1981). In a survey of 109 deans in 37 major universities in 16 states (including Oklahoma State University), the majority responded that number of full-time equivalent faculty and total number of student credit hours taught were the most important criteria for setting departmental budgets.

Summary of Independent Variables

The following list represents those explanatory (independent) variables of both a political and bureaucratic nature in the form in which they were tested in the analysis:

Political:

1. Years head of department, 1980 (YHD);
2. Department head's perception of own department's power (HPPD);

3. University average of perceived status of each department (UAPPD);
4. Number of faculty by department on committees in 1980-81 (FOCD80);
5. Number of faculty by department on committees in 1978-79 (FOCD78);
6. Change in number of faculty by department on committees 1978-79 to 1980-81 as a proportion of total university faculty on committees in 1978-79 ($\text{FOCD80} - \text{FOCD78} / \text{FOCU78}$).

Bureaucratic:

7. Total student credit hours by department as a proportion of total University student credit hours in 1978-79 ($\text{SCHD78} / \text{SCHU78}$);
8. Total student credit hours by department as a proportion of total University student credit hours in 1980-81 ($\text{SCHD80} / \text{SCHU80}$);
9. Change in total student credit hours by department 1978-79 to 1980-81 as a proportion of total University student credit hours in 1978-79 ($\text{SCHD80} - \text{SCHD78} / \text{SCHU78}$);
10. Total full-time equivalent faculty by department as a proportion of total University full-time equivalent faculty in 1978-79 ($\text{FTEFD78} / \text{FTEFU78}$);
11. Total full-time equivalent faculty by department as a proportion of total University full-time equivalent faculty in 1980-81 ($\text{FTEFD80} / \text{FTEFU80}$);

12. Change in total full-time equivalent faculty by department from 1978-79 to 1980-81 as a proportion of University total full-time equivalent faculty in 1978-79 ($FTEFD80 - FTEFD78 / FTEFU78$);

13. Total College expenditures as a proportion of total University expenditures 1978-79 ($TEC78 / TEU78$);

14. Total College expenditures as a proportion of total University expenditures in 1980-81 ($TEC80 / TEU80$);

15. Change in total College expenditures 1978-79 to 1980-81 as a proportion of total University expenditures in 1978-79 ($TEC80 - TEC78 / TEU78$);

16. Total College salaries and wages as a proportion of total University salaries and wages in 1978-79 ($TSC78 / TSU78$);

17. Total College salaries and wages as a proportion of total University salaries and wages in 1980-81 ($TSC80 / TSU80$);

18. Change in total College salaries and wages from 1978-79 to 1980-81 as a proportion of total University salaries and wages in 1978-79 ($TSC80 - TSC78 / TSU78$);

19. Total College supplies and expenses as a proportion of total University supplies and expenses in 1980-81 ($TSEC80 / TSEU80$);

20. Total College supplies and expenses as a proportion of total University supplies and expenses in 1978-79 ($TSEC78 / TSEU78$);

21. Change in total College supplies and expenses from 1978-79 to 1980-81 as a proportion of total University supplies and expenses in 1978-79 (TSEC80-TSEC78/TSEU78).

✓ Research Questions

The following questions were formulated to test the relationships between and among the dependent and independent variables. The major research question being subjected to statistical analysis, both in 1978 and 1980 and over the period from 1978 to 1980, is the degree to which budgetary allocations to departments can be explained by political factors as well as bureaucratic variables.

Question One: What proportion of total University allocations received by individual departments can be explained by their proportion of total student credit hours generated?

Question Two: What is the proportion of total University allocations received by individual departments which can be explained by their proportion of total full-time equivalent faculty members?

Question Three: What is the proportion of total University allocations received by individual departments which can be explained by the length of tenure of individual department heads?

Question Four: What is the proportion of total University allocations received by individual departments

which can be explained by the proportion of departmental representation on key committees?

Question Five: What is the proportion of total University allocations received by individual departments which can be explained by the department heads' perception of their relative power within the organization?

The research questions are designed to acquaint the reader with the specific bureaucratic (#1 and #2) and political (#3, #4, #5) variables which are being tested against the dependent variable, budgetary allocation to departments. Bivariate correlation analysis is the technique which tests the strength of the association between the dependent and independent variables separately. Multiple regression analysis tests these independent variables in concert in order to explain and/or predict the dependent variable. Thus, these five research questions will be presented together in the form of correlation coefficients and regression coefficients for the years 1978, 1980, and the period 1978 to 1980.

✓ Identification of the Population

The present study was designed to study a population of all academic departments at Oklahoma State University which offer a doctoral degree. However, due to researcher error, one doctoral degree-granting department was inadvertently omitted from the study. Another had to be eliminated due to the inability to gather accurate budgetary

data on it. ✓ The participating departments comprising the population represented all Colleges at Oklahoma State University, with the exception of Veterinary Medicine, which have faculties. The 28 departments involved in the study were: Agriculture Economics, Agriculture Education, Agriculture Engineering, Agronomy, Animal Sciences, Biochemistry, Entomology, Plant Pathology, Microbiology, Botany, Zoology, English, History, Physics, Sociology, Economics, Applied Behavioral Studies in Education, Curriculum and Instruction, Educational Administration and Higher Education, Psychology, Occupational and Adult Education, Chemical Engineering, Civil Engineering, Electrical Engineering, General Engineering, Industrial Engineering, Mechanical and Aerospace Engineering, and Home Economics Education.

Although the present study is an extension of earlier studies by Pfeffer and Salancik (1978) and Salancik and Pfeffer (1974), those research efforts studied different academic departments and were conducted at a different point in time. Thus, the results of this research cannot be generalized to those institutions nor to any other institution.

✓ Procedures for Data Collection

Data were collected in three ways: 1) from archival records, 2) by means of a questionnaire administered to academic department heads, 3) through supplementary personal interviews with selected former and current department heads and deans.

The Office of Institutional Research provided the following data: student credit hour production by department, by College, and by University totals; full-time equivalent distribution of faculty by source of funding by department; expenditure data by department, by College, and by University totals; department and College code numbers. These data were generated for FY 1978-79, 1979-80, and 1980-81.

The following data were obtained using the self-administered questionnaire: the relative ranking of all departments as perceived by the responding department and the length of tenure as department head.

From archival sources in the Edmon Low Library and the Office of the Vice-President for Research, the following data were gathered: departmental representation on the Faculty Council budget committee for the years of the study and departmental representation on the five Thrust committees.

Supplementary information on the criteria used for budget allocation was gathered from personal interviews with former and current department heads from departments not included in the population and from two academic deans. Interview candidates were selected based on their past and/or current experience with budgeting procedures and their implications. An additional criterion in the selection process was that they be candid and open in revealing their personal perceptions of the allocation

decision process at this institution. The interviews were conducted at various times during December, 1981, and January, 1982, and each interview lasted from one to one and one-half hours.

On October 26, 1981, questionnaires (Appendix A) and explanatory cover letters were mailed to 29 doctoral degree-granting department heads at Oklahoma State University. On November 20, 1981, a follow-up letter was sent to department heads who had not yet responded. Mathematical Sciences was excluded early from the study, as it was impossible to extract raw department data from "school" data. The final response rate was 89.2% (25 out of 28 which were ultimately included in the population).

The questionnaire used in this study was constructed to ascertain the responding department head's perception of the relative power of the departments, including the respondent's own department. Power was defined as the ability of a department to affect decisions so that they conform more closely to what the department wants. A "don't know" response was provided for unfamiliarity with certain departments. A Likert scale was used which ranged from "very little power" (1) to "great deal of power" (5). Department heads noted the length of their tenure as department head.

Data Analysis

✓ The purpose of this section is to describe the steps

involved in the analysis of the data and the statistical methods involved.

✓ To test the reliability of the research instrument, a test-retest methodology was employed. The questionnaire was readministered to three department heads in three Colleges three months after the original questionnaire had been returned. The researcher proceeded on the assumption that responses in categories 1 and 2 would indicate "little power" and categories 4 and 5 would indicate "great deal of power" on the retest. When the researcher compared the data gathered from these department heads on the first questionnaire with that from the retest, the second group of responses paralleled the first with minor exceptions. This finding supports the general reliability of the research instrument.

Validity checks were made by obtaining intercorrelations among the power variables used in the Pfeffer (1974) study and through the supplementary qualitative data gathered from personal interviews. The variable, head's perceived power of his/her own department, was correlated with the university average of the perceived power of departments. A positive relationship ($r=.26$) was found. The head's perceived power of his/her own department was correlated with the variable, number of faculty on committees by department. That relationship was also positive ($r=.26$), though neither were statistically significant. These relationships indicate the variables are reasonably

independent measures of power, as the sign is in the same direction. Pfeffer (1974) supports the latter method of checking the validity of the measures:

Of some importance is the fact that the unobtrusive measures of power obtained from examining representation on major committees significantly replicate the ratings of power as reported by various department heads. This finding reinforces the possibility of using unobtrusive measures to assess organizational political systems (p. 143).

Responses and archival data were coded onto cards for analysis utilizing Statistical Analysis System (SAS). The first stage of the analysis involved ascertaining the degree to which variation in one variable was associated with variation in another. Bivariate correlation provided a single summary statistic which summarized the relationship between the two variables (Nie, 1975). Thus, the technique was used to determine the association between budget allocation to departments and student credit hours generated, faculty representation on committees, graduate assistants by departments, years head of department, heads' perceived power of own and other departments, and College.

Bivariate correlation technique was used to test the relationship of the two categories of independent variables in two ways. Correlation coefficients were obtained for the years 1978 and 1980 independently and compared. Second, the same relationships were tested to see if there was a change in the relationships over the period 1978 to 1980. Those trend data were then compared to the single

year correlations to ascertain if differences in the relationships occurred over time.

In the second stage of the analysis, stepwise multiple regression analysis was used to determine the relative importance and contribution of each independent variable in explaining resource allocation to departments. Stepwise regression was used in this study primarily as a descriptive technique. It is important to note how multiple regression differs from simple bivariate regression. In simple regression analysis, values of the dependent variable are predicted from a linear function of the form $Y' = a + bX$ where Y' is the estimated value of the dependent variable Y , B is a constant by which all values of X are multiplied, and a is a constant which is added to each case. The multiple regression method extends the analysis to more than one independent variable so that the fundamental prediction equation becomes $Y' = a + b_1X_1 + \dots + b_kX_k$. According to Nie (1975), this method is important in controlling for other confounding variables in order to evaluate the contribution of a specific variable or set of variables. Kerlinger (1973) noted the advantages of using the stepwise regression technique:

The computer selects the independent variable X_a that has the highest correlation with the dependent variable Y and calculates the regression statistic. It then selects the variable X_b that, after the first variable, will contribute most of the variance of Y . It then stops to evaluate what it has done. That is, it examines the contribution the first variable would have made had it been entered second. If

this contribution turns out not to be statistically significant, the variable is dropped. The process is continued until a statistical test of significance strikes a variable X_m that does not contribute significantly to R^2 (p. 654).

By using equations stated in proportional terms, the effects of size, inflation, and differential program cost were monitored. To control for the possible effect of College, two methods were employed: 1) the proportion of College expenditures was entered into the equations; 2) dummy variables were introduced into the equations.

With regard to the latter, Nie (1975) stated that a set of dummy variables can be created by treating each category of a nominal variable as a separate variable and assigning arbitrary scores for all cases, depending on their presence or absence in each of the categories. They are called "dummy" variables because their scores have no meaning other than representing a particular category in the original variable. The multiple correlation from a dummy regression is equivalent to the conventional correlation ratio and can be interpreted as a measure of the strength of association between Y and the categorical variable.

The multiple regression analysis was employed in the same manner as the Pearson's Product Moment Correlation analysis with respect to the single year and multiple year comparisons.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

Introduction

This chapter includes the results and interpretations of the empirical research. The reader will recall that the statement of the problem and the subsequent research questions were designed to ascertain the degree to which two distinct classes of decision variables affect resource allocation to departments. Measures were developed to gauge bureaucratic criteria (e.g., student credit hours generated, full-time equivalent faculty, graduate assistants), and political, or power, criteria. The latter category consisted of the following: department head's perception of the relative power of his/her own department and other departments, faculty representation on selected committees, and length of the department head's tenure.

The presentation of the research results will be in three major sections. The first section will address the research questions (#1 and 2) which deal with bureaucratic variables. The second part will be directed toward the questions which deal with power measures (#3, 4, 5). A comprehensive narrative analysis of the findings will comprise the last stage of this chapter. This format allows

integration of the qualitative personal interview data into the quantitative analysis. These interviews provide insight into both areas of decision making considered in this study.

Bureaucratic Variables

This section examines the effect of the bureaucratic variables on budget allocation to departments in 1978, in 1980, and over the years 1978 to 1980. First, a bivariate relationship of student credit hours, full-time equivalent faculty, and graduate assistants to budget allocations is examined. Comparisons of these relationships in single years and over time are presented. The second stage, the multiple regression analysis, ascertains the ability of the bureaucratic independent variables to explain and/or predict the same dimensions of the dependent variable. The results are compared in single years and over the period 1978 to 1980.

Bivariate Correlation Analysis

To determine the strength of the relationship between budget allocation to departments and bureaucratic decision variables, Pearson's Product Moment Correlation analysis was employed. In this statistical technique, a positive correlation indicates that an increase in one variable is accompanied by an increase in the other. The converse is true when the association is negative.

The following bureaucratic variables were introduced into the matrix: student credit hours, full-time equivalent faculty, and graduate assistants. These variables were correlated with the following dimensions of budget allocation: total expenditures by department (TED), total salaries by department (TSD), and total supplies and expenses by department (TSED). All variables were scored as a proportion of the University total of the specific variable being tested (e.g., total expenditures by department divided by total University expenditures; student credit hours by department divided by total University student credit hours). This procedure was done for 1978, 1980, and for the period 1978 to 1980. An explanation for the abbreviation of terms used in the analysis can be found in Appendix B.

Table I illustrates that, in 1978, student credit hours were highly correlated with total expenditures by department ($r=.88$) and with total salaries by department ($r=.67$). Graduate assistants were correlated positively, though not as highly, with the same dependent variables ($r=.62$ and $r=.37$, respectively). No other bureaucratic variable was significant at the .10 level.

In 1980 (Table I), student credit hours were again positively and significantly associated with both total expenditures by department and total salaries by department ($r=.86$ and $r=.88$, respectively). Graduate assistants showed a positive correlation of $r=.52$ and $r=.50$ to

TABLE I
 PEARSON'S CORRELATION COEFFICIENTS BETWEEN
 DEPENDENT VARIABLES AND INDEPENDENT
 BUREAUCRATIC AND COLLEGE CONTROL
 VARIABLES, 1978, 1980,
 1978-1980*

1978											
IND. DEP.	<u>SCHD</u>	<u>FTEFD</u>	<u>GAD</u>	<u>TEC</u>	<u>TSC</u>	Dummy Variable for College of: ^a					
	<u>SCHU</u>	<u>FTEFU</u>	<u>GAU</u>	<u>TEU</u>	<u>TSU</u>	AG.	A.S.	BUS.	ED.	ENG.	H.E.
<u>TED</u> <u>TEU</u>	<u>.88</u>	.09	<u>.62</u>	.31	<u>.42</u>	<u>-.52</u>	<u>.39</u>	.19	.27	-.10	-.20
<u>TSD</u> <u>TSU</u>	<u>.67</u>	-.06	<u>.37</u>	.19	.26	-.21	.26	.15	.17	-.19	-.19
<u>TSED</u> <u>TSEU</u>	.19	.30	.24	.32	.36	<u>-.39</u>	.27	-.20	.01	<u>.36</u>	-.27

1980											
IND. DEP.	<u>SCHD</u>	<u>FTEFD</u>	<u>GAD</u>	<u>TEC</u>	<u>TSC</u>	Dummy Variable for College of: ^a					
	<u>SCHU</u>	<u>FTEFU</u>	<u>GAU</u>	<u>TFU</u>	<u>TSU</u>	AG.	A.S.	BUS.	ED.	ENG.	H.E.
<u>TED</u> <u>TEU</u>	<u>.86</u>	<u>.51</u>	<u>.52</u>	<u>.41</u>	<u>.42</u>	<u>-.52</u>	<u>.39</u>	.19	.27	-.11	-.18
<u>TSD</u> <u>TSU</u>	<u>.88</u>	<u>.51</u>	<u>.50</u>	.12	<u>.41</u>	<u>-.52</u>	<u>.38</u>	.22	.30	-.15	-.17
<u>TSED</u> <u>TSEU</u>	.09	.19	.23	.17	.16	<u>-.39</u>	.05	.15	.03	<u>.51</u>	-.18

1978-1980											
IND. DEP.	<u>ΔSCHD</u>	<u>ΔFTEFD</u>	<u>ΔGAD</u>	<u>ΔTEC</u>	<u>ΔTSC</u>	Dummy Variable for College of: ^a					
	<u>ΔSCHU</u>	<u>ΔFTEFU</u>	<u>ΔGAU</u>	<u>ΔTEU</u>	<u>ΔTSU</u>	AG.	A.S.	BUS.	ED.	ENG.	H.E.
<u>ΔTED</u> <u>ΔTEU</u>	-.31	<u>.42</u>	.07	<u>.55</u>	<u>.39</u>	<u>-.49</u>	<u>.36</u>	.18	.26	-.13	-.11
<u>ΔTSD</u> <u>ΔTSU</u>	-.19	.32	.03	<u>.42</u>	.27	<u>-.47</u>	.23	.13	.22	.01	-.008
<u>ΔTSED</u> <u>ΔTSEU</u>	-.05	.01	.22	-.10	-.15	-.21	-.24	-.03	.04	<u>.47</u>	.01

* For definition of variables see Appendix C

 = significant at .10 level

a : AG (Agriculture), AS (Arts and Sciences), BUS (Business),
 ED (Education), ENG(Engineering), HE(Home Economics)

total expenditures by department and to total salaries by department, respectively. It is noteworthy that the 1980 data indicate that full-time equivalent faculty correlate positively with both total expenditures by department and to total salaries by department ($r=.51$, $r=.51$). This relationship did not occur in the 1978 data.

Table I also illustrates the differences that occur over time measured by the change in a variable from 1978 to 1980 as a proportion of the University total for that variable in 1978 (e.g., total student credit hours by department in 1978 subtracted from total student credit hours by department in 1980 divided by total University student credit hours in 1978). An interesting observation in these trend data is what happened to associations between student credit hours and total expenditures by departments. The data now suggest that student credit hours are inversely related (although not statistically significant at the .10 level) to total expenditures by department and total salaries by department ($r=-.31$, $r=-.19$, respectively). The change in full-time equivalent faculty is positively associated with the change in total expenditures by departments ($r=.42$) and significant at .10 level. The relationship between graduate assistants and dimensions of the budget expenditures is no longer statistically significant when measured longitudinally. A fuller explanation will be developed in the narrative section of this chapter.

In order to test for the effect of College, there were attempts to control for this variable at all stages of the analysis. In the correlation matrices of Table I, two methods were used. First, College budget data (total College expenditures and total College salaries) were correlated with total expenditures by department, total salaries to department, and total supplies and expenses by department. Also, the Colleges were treated as separate dummy variables and correlated with the same budget variables. As Table I shows, there are several correlations, significant at the .10 level, between College influence and budget allocations.

In 1978, the variable, total salaries by College (TSC), was positively associated with total expenditures by department within the required significance level ($r=.42$). This suggests that the tendency to get monies is affected by the College which one's department is in. The finding becomes clearer when the Colleges are entered separately as dummy variables. For instance, there is a relatively strong negative relationship between total expenditures by department and membership in the College of Agriculture ($r=-.52$). This result suggests that being in the College of Agriculture results in relatively less monies being allocated to one's department (relative to other departments in other Colleges). Further explanation regarding this observation will be presented in the narrative section of this chapter. Conversely, being in the

College of Arts and Sciences has a positive effect on total expenditures by department ($r=.39$). The only other College relationships meeting the necessary significance level were those which exist between total supplies and expenses by department and being in the Colleges of Engineering ($r=.36$) and Agriculture ($r=-.39$).

In Table I, one can also observe the College influence for 1980. Total expenditures by College and total expenditures by department correlate positively with $r=.41$. There is a positive correlation between total salaries by College and total expenditures by department ($r=.42$). Total salaries by College is also related positively to total salaries by departments ($r=.41$). The negative association between being in the College of Agriculture and budget allocations received is statistically significant in all three budget dimensions ($r=-.52$, $r=-.52$, $r=-.39$, respectively). There is also a positive association between being in Arts and Sciences and total expenditures and total salaries by department ($r=.39$ and $r=.38$, respectively).

A similar pattern holds for the trend data in Table I, although the negative correlations between total expenditures by departments and the College of Agriculture are slightly lower, yet still statistically significant with $r=-.49$. The relationship between the College of Arts and Sciences and total expenditures by department remains significant over the 1978 to 1980 period at $r=.36$.

Multiple Regression Analysis

After examining the correlation coefficients, it is desirable to perform a more in-depth analysis of the data. Pearson's correlation coefficients give some indication of how the various bureaucratic decision variables relate to budget allocation; but they give no indication of how much variation in budget allocation they account for together, or how each one relates to the dependent variable with the other independent variables present. Thus, stepwise regression analysis was employed to ascertain the importance of each independent variable, relative to others analyzed, in explaining budget allocation to departments.

The first three columns of Table II display the partial unstandardized regression coefficients of the bureaucratic variables (student credit hours, full-time equivalent faculty, and graduate assistants) on budget allocation. The multiple regression technique allows one to determine how much of the variation in budget allocation is accounted for by the joint linear influences of the bureaucratic decision variables. The stepwise regression analysis examines the impact of one independent variable while controlling for the others, thus producing a variety of partial coefficients. Emphasis is on the examination of particular relationships within a multivariate context (Nie, 1975).

The constant b , the nonstandardized regression coefficient, is the slope of the regression line and indicates

TABLE II

PARTIAL STEPWISE REGRESSION COEFFICIENTS BETWEEN
DEPENDENT AND INDEPENDENT VARIABLES,
1978, 1980, 1978-1980*

1978															
IND. DEP.	SCHD SCHU	FTEFD FTEFU	GAD GAU	FOCD FOCU	YHD	HPPD	UAPPD	COLLEGE BUDGET	Dummy Variable for College of:						R ²
									AG	A.S.	BUS.	ED.	ENG.	H.E.	
TED TEU	.55	X	X	X				x ^a							.77
TSD TSU	.52	X	X	X				x ^b							.45
TSED TSEU	X	X	X	X				.03 ^c							.16
TED TEU	.36	X	.17	X					-.007	X	X	X	X	X	.88
1980															
IND. DEP.	SCHD SCHU	FTEFD FTEFU	GAD GAU	FOCD FOCU	YHD	HPPD	UAPPD	COLLEGE BUDGET	Dummy Variable for College of:						R ²
									AG	A.S.	BUS.	ED.	ENG.	H.E.	
TED TEU	.52	X	X	X	X	X	X	.01 ^a							.78
TSD TSU	.56	X	X	X	X	X	X	.01 ^b							.81
TSED TSEU	X	X	X	X	X	X	.01	.03 ^c							.29
TED TEU	.31	.30	X	X	-.0002	X	X		-.009	X	X	X	X	X	.89
1978-1980															
IND. DEP.	ΔSCHD ΔSCHU	ΔFTEFD ΔFTEFU	ΔGAD ΔGAU	ΔFOCD ΔFOCU	YHD	HPPD	UAPPD	ΔCOLLEGE BUDGET	Dummy Variable for College of:						R ²
									AG	A.S.	BUS.	ED.	ENG.	H.E.	
ΔTED ΔTEU	X	.14	.09	X				.04 ^d							.55
ΔTSD ΔTSU	X	.26	X	X				.05 ^e							.20
ΔTED ΔTEU	X	.19	X	X					-.006	X	X	X	X	X	.61

Notes:

X: Signifies an independent variable that was not statistically significant at .15 level. All values reported significant at .15 level.

* Refer to Appendix B for definitions of variables.

College Budget Measures: a:TEU, b:TSU, c:TSEU, d:ΔTEU, e:ΔTSU

the expected change in Y with a change of one unit in X while controlling for the effects of the other independent variables which entail the regression equation. The nonstandardized b scores would be the same value as the r value in Pearson's correlation if the b values were standardized. The R^2 , column 16, Table II, indicates the portion of variance of the dependent variable, Y, due to the independent variables in concert.

All of the independent bureaucratic variables were entered into the regression as a proportion of the University total. In interpreting Table II, the values entered under specific independent variables are the b values which were statistically significant at .15. The other variables, designated in the table as x, indicate those factors which were allowed to enter the stepwise equation but were not statistically significant. A complete list of the regression equations can be found in Appendix C.

One can see some similarities in the results of the regression analysis (Table II) and the Pearson's correlation analysis (Table I). The variable which appears to be the most important determinant of total expenditures by department in 1978 was student credit hours ($b=.55$). This variable accounted for 77 percent of the variation in the dependent variable. In 1980, student credit hours once again was the major bureaucratic determinant of total expenditures by department ($b=.52$). When exploring the

change in total expenditures by department from 1978 to 1980, a different observation surfaces. Student credit hours are no longer statistically significant. Rather, full-time equivalent faculty and graduate assistants emerge as the important determinants ($b=.14$ and $b=.09$, respectively). The narrative section of this chapter will explain this result in greater depth.

Table II illustrates the effect of student credit hours on total salaries by department in 1978 and in 1980 ($b=.52$ and $b=.56$, respectively). However, when the data are examined for the change from 1978 to 1980 full-time equivalent faculty becomes the more important determinant ($b=.26$). As these results are similar to those obtained for total expenditures by department, it suggests that the two dimensions of the dependent variable are closely related. As salaries comprise the largest share of departmental budgets, these results are expected.

To control for the effect of College, two methods were utilized: 1) College budget data were entered into the equation, 2) Colleges were introduced into the equations via dummy variables. Though one can see from Table II that the College budget is not a major determinant of any dimension of budget allocation in 1980, it is statistically significant in three cases when, in fact, some of the other bureaucratic decision variables are not. Thus, the College budget does exert some influence on budgetary allocations to departments.

When the effect of College is included in the equation explaining total expenditures by department in 1980, $R^2=.78$, indicating that student credit hours and College budgets account for 78 percent of the variation in total expenditures by department in that year. When the change from 1978 to 1980 is explored, it appears that, although the effect of the College budget is still statistically significant, the total variation accounted for decreases over time ($R^2=.55$). The $R^2=.81$ for total salaries by department in 1980 indicates that College budgets and student credit hours explain most of the variation in the dependent variable. When the change from 1978 to 1980 in this dependent variable is examined, R^2 decreases to .20, suggesting that only 20 percent of the variation over time is explained by the interaction of College budgets and full-time equivalent faculty. Though the explained variation decreases still further when total supplies and expenses in 1978 are the dependent variable ($R^2=.16$), the only statistically significant variable in this equation is the control variable for the effect of the College budget.

When Colleges were entered via dummy variables into the regression equations for 1978, 1980, and 1978-80, there was a negative influence from being in the College of Agriculture in all three cases. The effect is not large ($b=-.007$, $b=-.009$, $b=-.006$) in any instance, but the fact that it is a statistically significant determinant

corresponds to the patterns observed in the Pearson's correlation coefficients for these same dummy variables. Table II also shows that student credit hours emerges as a statistically significant determinant in the 1978 and 1980 versions of this equation ($b=.36$, $b=.31$), although their b values are not as strong as they were when College budget data were entered instead of the College dummy variables. However, the explained variation of the total expenditures by department in the equations for 1978, 1980, and 1978 to 1980, containing dummy variables, is higher than when College budget figures were used instead ($R^2=.88$, $R^2=.89$, $R^2=.61$). This observation suggests that the College of Agriculture may exert an independent influence on budget allocation. Further explanation for this finding will appear in the narrative section of this chapter.

Political Variables

This section examines the effect of the political (power) dimension of the independent variables on budgetary allocation to departments. The procedure differs slightly from that in the previous section because most of the operational measures of the power dimension of the independent variable were generated from the research questionnaire which was administered at only one point in time. The data on the variables, years as head of department, head's perceived power of his/her department, and the

university average perceived power of departments, are available for 1980 only. They are compared to the following dimensions of budget allocation: total expenditures by department, total salaries by department, and total supplies and expenses by department. The variable, faculty on committees by department, was obtained for the years 1978 and 1980; therefore, its effect on the dependent variable is examined and compared in single years and over the period 1978 to 1980. As in the previous section, both bivariate correlations and multiple regression analysis are the statistical tests used to examine the data. The final phase of this section presents information provided by department heads on the questionnaire which is relevant to the study but was not included in the statistical treatment.

Bivariate Correlation Analysis

To determine the strength of the association between budget allocation to departments and political decision variables, Pearson's Product Moment Correlation analysis was utilized. The following political (power) variables were introduced into the correlation matrices: faculty on committees by department (FOCD), years as head of department (YHD), head's perceived power of own department (HPPD), and the university average of perceived power of departments (UAPPD). These variables were correlated with total expenditures by department, total salaries by department,

and total supplies and expenses by department. The number of faculty on committees by department was entered as a proportion of the University total faculty on committees.

Table III indicates that faculty on committees by department and total expenditures by department in 1978 are significantly related ($r=.33$). This figure suggests a positive association between the two variables, although the relationship is not as strong as that between certain bureaucratic variables and total expenditures by department in the same year (see Table I).

For 1980 in Table III, an interesting observation emerges. There is a negative correlation of $r=-.36$ between years as department head and total expenditures by department. This relationship suggests that departments with heads who serve relatively long periods of time receive a relatively smaller proportion of the total University budget. Further explanation will follow in the next section of this chapter. Two of the other power relationships were significant in 1980: years as head of department and total salaries by department, and university average perceived power of departments and total supplies and expenditures by department (Table III).

The data representing the change from 1978 to 1980 in Table III is less illustrative of power relationships because of the fact that the survey data were gathered at one point in time only. Here, faculty on committees by department was the only power variable subjected to the

TABLE III
 PEARSON'S CORRELATION COEFFICIENTS
 BETWEEN DEPENDENT VARIABLES AND
 INDEPENDENT POLITICAL VARI-
 ABLES, 1978, 1980,
 1978-1980*

		1978			
IND. DEP. /		FOCD	FOCU		
	<u>TED</u> <u>TEU</u>		.33		
	<u>TSD</u> <u>TSU</u>		.17		
	<u>TSED</u> <u>TSEU</u>		.19		
		1980			
IND. DEP. /		YHD	HPPD	UAPPD	FOCD FOCU
	<u>TED</u> <u>TEU</u>	-.36	.02	-.28	.25
	<u>TSD</u> <u>TSU</u>	-.36	.01	-.31	.26
	<u>TSED</u> <u>TSEU</u>	-.28	.18	.31	.24
		1978-1980			
IND. DEP. /		Δ FOCD		Δ FOCU	
	<u>ΔTED</u> <u>ΔTEU</u>			-.17	
	<u>ΔTSD</u> <u>ΔTSU</u>			-.12	
	<u>ΔTSED</u> <u>ΔTSEU</u>			.08	

* For definitions of Variables see Appendix C.

— = Significant at .10 level

correlation analysis, and it was not significant at the .10 level.

Multiple Regression Analysis

In the stepwise regression analysis, the power variables do not emerge as major determinants of budget allocations, nor does their presence appear to account for much of the explained variation. In fact, as Table II indicates, the only equations in which the power variables are statistically significant occur in 1980 (the b value between university average perceived power of departments and total supplies and expenses by departments is .01, and the b value between years head of department and total expenditures by department is $-.0002$). In both cases, the power variables do not appear to add much to the explanation of variation in the dependent variables. Possible interpretations for these results will be presented in the next section.

Analysis of Survey Data

Table IV presents some of the results of the questionnaire administered to department heads. The N represents the number of respondents who provided information on the departments represented on the instrument. The differences in numbers of respondents (N) for any given department is due to the fact that department heads could check the "don't know" column if they were unfamiliar with a

TABLE IV
UNIVERSITY AVERAGE OF THE PERCEIVED
POWER OF DEPARTMENTS

Department	Mean	N	Standard Deviation
Agricultural Economics	4.3	23	.72
Agricultural Education	2.8	20	1.23
Agricultural Engineering	3.2	22	.94
Agronomy	4.1	22	.77
Animal Sciences	4.3	22	.73
Biochemistry	3.8	22	.91
Entomology	2.8	20	.70
Plant Pathology	2.8	18	.86
Microbiology	2.8	18	.90
Botany	2.3	17	.77
Zoology	2.7	17	.99
English	2.0	19	1.17
History	2.3	19	1.00
Physics	3.9	18	1.10
Sociology	2.3	19	.89
Economics	3.3	18	.69
ABSED	2.2	13	1.00
CIED	2.2	14	.97
EAHED	2.5	15	.99
OAED	1.9	14	.77
Psychology	2.3	19	.99
Chemical Engineering	3.8	20	.91
Civil Engineering	3.5	20	1.00
Electrical Engineering	3.8	20	.89
General Engineering	2.8	18	1.40
Industrial Engineering	3.8	20	1.00
Mechanical Engineering	3.9	20	.97
Home Economics Education	2.0	18	1.00

department and elected not to rank it. An interesting sidelight at this juncture is the fact that respondents in Engineering and Agriculture indicated a greater number of "don't know" responses relative to length of time as department head than did most department heads in other Colleges. This observation reflects, perhaps, a perception of power by department heads regarding their unit that does not show up in the particular variables measuring relative power. Pfeffer (1981) suggested:

The perceptions of those within the organization, even those knowledgeable and well placed, are not inevitably reliable in terms of portraying the extent to which a political process is operating. There are considerations . . . which bias perceptions toward finding . . . a lack of political activity (p. 238).

The phenomenon could, of course, reflect also the differential degree to which the departments identify with the discipline rather than the institution. Pfeffer (1981) also suggested that weaker departments depend to a greater degree than powerful departments on forming internal alliances. To the extent that the Colleges of Agriculture and Engineering are powerful because of the land grant mission, they might not perceive it necessary to be cognizant of differential power statuses outside their own Colleges.

The standard deviation (the measure of dispersion about the mean) scores are also presented for each department in Table IV. The larger the number, the greater is the dispersion of scores around the mean for each

department. The smaller the standard deviation score, the more consensus there is regarding the relative power of the particular department. For purposes of illustration, let us assume that any scores over 1.0 represent a lesser degree of consensus and those scores below 1.0 represent a greater degree of consensus of relative power. Economics (S.D.=.69) ranks as the department with the most shared consensus of relative power (i.e., the smallest standard deviation), and the amount of power is moderate (\bar{x} =3.3). Conversely, General Engineering (S.D.=1.4) has the largest disparity of scores and therefore the least consensus about its relative power (\bar{x} =2.8, little to moderate power). To reiterate, these departments were not perceived by the group as being the most or least powerful; rather, they represent the departments which had the most and least shared consensus as to their relative power.

With N less than or equal to 23, mean scores are not as meaningful due to error bias for extreme scores. However, Agriculture Economics, which has the highest mean score (\bar{x} =4.3, with 4=some power), also has a relatively small standard deviation score (S.D.=.72). It is fairly safe to conclude that there is a considerable amount of consensus among department heads as to the perceived relative power of that department. In the same sense, Occupational and Adult Education has the lowest mean score (\bar{x} =1.9, with 1=little power) as well as a small standard deviation score of .77. There appears to be a shared

consensus among departments about the most and least powerful departments at this institution.

Because of the necessity to insure confidentiality of department heads' responses, the researcher did not present data regarding the department heads' perceptions of the relative power of their own department. Table V shows there is a positive correlation between individual department heads' responses regarding their own departments and the University average perceived power of departments, although the association is not particularly strong ($r=.26$), nor is it significant at $.10$.

TABLE V
CORRELATION COEFFICIENTS AMONG POWER
VARIABLES FOR THE ENTIRE
POPULATION, 1980

	HPPD	UAPPD	FOCD ₈₀
YHD	-.17	-.08	-.28
UAPPD	.26	1.0	.42
FOCD ₈₀	.26	.42	1.0

Another correlation of interest in the matrix presented in Table V is the negative correlation between years

as head of department and head's perceived power of his/her department ($r=-.17$). Although the association is not statistically significant, the direction of the sign suggests that heads' perceptions of the relative power of their respective departments decreases with increased tenure as department head. When the university average perceived power of the department is correlated with years as head of department, it suggests the same trend, although the association is weaker still ($r=-.08$). This negative relationship persists with years as head of department being related inversely to number of faculty on committees ($r=-.28$). These figures seem to suggest that the longer the department head's tenure, the relatively weaker the department is on other power variables. This statement is made as a speculation only, as none of these correlations were significant at the .10 level. In the survey, the average tenure of the department head was 7.04 years. It is noteworthy that the College of Arts and Sciences was in a transition period in that the School concept was being abolished (e.g., School of Social Sciences) and "chairmen" were being replaced by "heads." Thus, there were some persons serving as department heads who were quite new to the position. The longest tenure as department head reported in the data was 34 years; the shortest tenure was four months. The interpretation of these data becomes even more complex as some of the department heads indicated that, although they were relatively new to the

administration position, they were long-term faculty members at Oklahoma State University. It seems plausible that their perception of relative power might be reasonably accurate, due to length of service at the institution.

Thus, although the researcher does not come to any definitive conclusions regarding these correlations among power measures themselves, there does seem to be, at least, a shared consensus among department heads concerning the most powerful and the least powerful departments. It is interesting to note that the three department heads who chose not to complete the questionnaire ranked relatively high in average perceived power (Physics, Animal Sciences, Electrical Engineering--see Table IV). This observation conforms to the information presented in the literature review (Pfeffer, 1981) which stated that more powerful subunits do not always perceive it as advantageous to their relative standing in the organization to advertise their importance.

Discussion and Interpretation of Data

The major research question addressed by this study was how much of the variation in total budget allocation to departments could be explained by political as well as bureaucratic criteria. The empirical results presented thus far would indicate that power variables are not a significant determinant of budget allocations at Oklahoma State University. Rather, what appears to be the major

explanatory factors are student credit hours and the control variable, total College budget, in a single year and full-time equivalent faculty and total College budget over time. As Pfeffer and Salancik (1974) found both political as well as bureaucratic criteria to be statistically significant in addition to finding the effects of total College budget to be statistically insignificant, it is necessary to examine more closely the possible explanations for the divergent results of the present study.

The fact that student credit hours account for a large part of the explained variation of total expenditures by department in a single year is not too surprising. It may illustrate a rational method of incremental budgeting, and this practice is supported in the literature (Jones, 1981; Pfeffer and Salancik, 1978; Salancik and Pfeffer, 1974). It is supported further by a personal interview with a former Oklahoma State University department head who reported that he was always told that expected student credit hour production was a major determinant of the departmental budget allocation.

The fact that trend data show full-time equivalent faculty rather than student credit hours as being the important determinant of budget allocation over time can be interpreted in a variety of ways. The raw data collected for the population for the change during the period from 1978 to 1980 (Table VI) demonstrate the fact that, although student credit hours generated over time decreased

TABLE VI
 DATA FOR BUREAUCRATIC VARIABLES, BY
 DEPARTMENT, 1978 TO 1980

Department	Change in Total Expenditures	Change in Total Student Credit Hours	Change in Total Full-Time Equivalent Faculty
Agricultural Economics	\$ +84,679	+402	+7.10
Agricultural Education	+92,590	+142	+ .45
Agricultural Engineering	+67,043	+125	+2.00
Agronomy	+113,270	-646	+1.90
Animal Sciences	+92,580	+774	+6.00
Biochemistry	+45,774	-230	+9.50
Entomology	+49,942	-3	+2.00
Plant Pathology	+31,597	-96	+ .75
Microbiology	+156,913	-3302	+4.56
Botany	+80,585	-163	+2.40
Zoology	+99,443	-489	+2.79
English	+299,074	-363	+ .57
History	+224,455	-2817	+3.25
Physics	+382,806	-654	+2.42
Sociology	+184,480	-1153	+ .62
Economics	+200,862	+1606	+6.50
ABSED	+178,659	+488	+5.24
CIED	+181,698	-1993	+1.00
EAHED	+58,432	+550	+1.10
OAED	+176,153	+618	+3.97
Psychology	+271,984	-813	+ .25
Chemical Engineering	+27,140	+4	+2.30
Civil Engineering	+255,179	-377	+4.13
Electrical Engineering	+149,966	+236	- .34

TABLE VI (Continued)

Department	Change in Total Expenditures	Change in Total Student Credit Hours	Change in Total Full-Time Equivalent Faculty
General Engineering	\$ +4,893	-21	+4.10
Industrial Engineering	+89,847	+476	+.82
Mechanical Engineering	+176,761	+301	+3.51
Home Economics Education	+87,117	+4	+.49

significantly in some departments, new faculty positions still accrued. For example, microbiology showed a net decrease of 3,302 student credit hours from 1978 to 1980 and an increase of 4.56 full-time faculty. This may indicate a number of things:

1. There may be a lag time when student credit hours are dropping that is not apparent when data are generated at one point in time; the effect of that phenomenon on the budget allocation also may suffer a lag effect.

2. The goal of the administration may be to reduce the faculty/student ratio over time rather than to reward departments for student credit hour production. In this case, the decision on the amounts to be allocated to departments is still based on rational choice, though perhaps not on the criterion generally supposed (i.e., student credit hour production). This supposition has support from an interview with a former Oklahoma State University dean who said that funds were earmarked at the dean's office for hiring new faculty in an effort to reduce the faculty/student ratio and the teaching assistant/student ratio, which was a "high priority from the dean's perspective." This statement also helps to explain the fact that the proportion of graduate assistants by departments is a statistically significant predictor in the regression equation in some budgetary decision categories.

3. The fact that the trend data indicate that student credit hours are inversely related to total

expenditures by department warrants additional consideration. This observation may reflect a regression toward the mean. That is, departments which traditionally generate large numbers of student credit hours may be losing student credit hours over time, while departments with low enrollments may be gaining over time. Because of the tradition of using the previous year's budget as the base and budgeting incrementally, the inverse relationship of student credit hours to total expenditures by department might not appear in the single year analyses, but it would be reflected over time.

The fact that the College influence is an important determinant regardless of the way in which it was measured requires additional attention. In the present study, that variable appears to be (at least from the perspective of this researcher) an important factor in understanding and in explaining budgetary allocation at this institution. This researcher suggests that power variables may be as important at Oklahoma State University as in previous studies (Pfeffer and Salancik, 1978). The fact that there are significant discrepancies in results may be due, in part, to the operational measures of power used in the present study. The College influence appears to be a power variable at Oklahoma State University. The results of the other power relationships in this study become more meaningful as one analyzes the effects of College influence from a variety of perspectives.

It is necessary at the onset to deal with the fact that the effect of the College of Agriculture is inversely related to budget allocation in this study. A plausible explanation for this relationship is the manner in which the budget data were gathered. Neither state nor federal appropriations to the Agriculture Experiment Station and the Agriculture Extension Division were included in the operational definition of total University expenditures to departments. This excluded amount accounted for between 10 and 15 million dollars per year to that College during the time frame under study. Thus, the allocations to departments in the College of Agriculture were biased downward. It is not clear from the Pfeffer and Salancik (1978) research how this issue was handled. But one can see from Table VI that departments in Arts and Sciences were "rewarded" relative to departments in the College of Agriculture for loss of student credit hours, both in relative appropriations and new full-time equivalent faculty.

In the interview with a former dean, questions regarding the importance of mission and resource allocation were addressed. The dean was convinced that the land grant mission concept operates very strongly at this institution. He stated that outside constituencies such as prominent farm groups exert tremendous pressure on the legislature and the State Regents for Higher Education to reward the College of Agriculture. He mentioned how the composition of the Oklahoma State operating board affects

the budget of the College of Agriculture positively. The 1944 amendment to the state Constitution created a nine member board to be appointed by the governor with the advice and consent of the senate. The ninth member is the president of the State Board of Agriculture. The amendment requires that a majority of the members be persons whose primary occupation is farming or ranching (Frye, 1978). The dean stated that the board's influence can effect the choice of executive leadership at the University. He paraphrased a story which said that a president had been hired because his wife had shown cattle in 4-H in high school. Although this statement was obviously made in jest, it supported his personal view of the importance of the agricultural mission. He stated repeatedly that if, for any reason, the College of Agriculture would lose some of its federal funds, he believed that reallocations would be made at the departmental level in other Colleges to offset the deficit in the College of Agriculture.

That College influence plays a part in differential budget allocations was supported by all the supplementary interviews which included: a current dean, a former dean, an acting department head, a former department head, and a current department head. Only the current department head gave responses which differed in content from the general consensus in any category of questioning.

The former dean said that there was another issue in which department heads tended to differ from deans in

terms of how monies were to be expended at the departmental level. He argued that faculty and departments tend to identify with the discipline rather than with the institution. Therefore, departments attempted to prioritize funds in this order: graduate programs, courses for majors, and general education courses. Thus, department heads who were able to gain the confidence of the dean's office in how they would allocate funds at the departmental level, were rewarded accordingly. The former department head echoed this sentiment: "My rewards came not from being a good administrator or even a good scholar, but from my ability to satisfy the dean's office." Dressel et al. (1969) support this statement:

Departments observe the administrators closely and display adeptness at imitating their gamesmanship . . . the confidence game is a central element in university operations. The winners . . . are those departments with the . . . resources to . . . reward the faculty members for those activities in which they wish to engage (pp. 274-278).

The fact that there was a negative association between length of tenure as department head and proportion of monies allocated to departments does not correspond to the facts presented in the literature review (Pfeffer, 1981; Meyer, 1978). However, the findings is not too surprising in the present instance, based on the interview data gathered in this research. The former dean stated that he felt there was a pattern at this institution that was analogous to a "honeymoon period." That is, administrators are well treated at the onset of their

administrative tenure with respect to monies allocated. Thus, he felt there was a correlation between the monies allocated and the length of tenure of the administrator. He reiterated that "during the 'honeymoon period,' allocations can be garnered from the Vice-President (of Academic Affairs) regardless of direction of growth."

This statement was supported by the former department head. He was hired to start a new department at this institution. The goal was to create "a first-rate department." He argued for and got new faculty positions to the point of doubling the size of the faculty. Faculty positions were awarded primarily because of the department's success in procuring extramural monies rather than for expected or past student credit hour production. This supports, at least indirectly, the fact that the trend data indicate full-time equivalent faculty rather than student credit hours explain budget allocations over time. However, he felt his influence and ability to play the "confidence game" well was declining toward the end of his tenure as department head. This supports at the department level what the former dean suggested happens at the College level.

The interview data also reflect another feature of the effect of College on budget allocations that, from the perspective of this researcher, marks a point of departure from the previous research in the area. That is the aspect of the centralization of power that appears to

operate at the College level at Oklahoma State University. The former dean commented: "God and deans help those who help themselves." When asked to elaborate, the dean replied that the primary subjective criterion which he used to allocate funds to departments was his confidence in the department to use the funds effectively. He acknowledged freely, as did the present dean, that deans at this institution have an inordinate amount of power. The former dean said, "They have more (power) than they should. It becomes a collection of Colleges rather than a University. For instance, most institutions this size have a central research center. Problems are channeled to the appropriate director rather than to a College dean." The former department head was more emphatic in his statement: "Its (the power) not only centralized, its entrenched. Its virtually a military mentality . . . the Faculty Council is crippled by the involvement of the President, and that reflects the centralization. The Council can't be an advocate of the faculty when the President is the chief executive officer." Pfeffer (1981, p. 87) supports what appears to be operating at this institution: "The decision-making process appears to be orderly and rational only because . . . goal disagreements have been submerged . . . through the use of concentrated power."

Thus, it appears that when power is highly centralized, there will be little political activity observed. Power will be used, in part, to make the choice, but it

will be the power of the central authorities. This explanation helps account for the lack of apparent significance of the use of committees as a determinant of power and budget allocation. In the Pfeffer studies (1974, 1981) there were approximately 13 committees which had influence on budget decisions. The fact that in the present case only two major committee categories could be identified (budget committee of the Faculty Council and the Thrust committees of the Presidential Challenge Grant Program) may be a reflection of the degree of centralization that exists. However, an alternative explanation should be considered. Davis (1969) and Galbraith (1973) argue that committees can serve other functions besides representation and cooptation of interests. They can be a forum for the pulling together of expertise and mechanisms for coordinating interdependent activities within the organization. This researcher speculates that the committees identified for this research study are representative of these functions rather than mechanisms for cooptation and legitimation of vested interests.

Another issue which can help explain centralization of power is the interplay between the centralization of power at certain levels of the organization and resource dependence. Decision making authority is seldom granted in an effort to enhance organizational efficiency. Rather, decision making discretion is provided to those with enough power in the organization to effectively demand

and claim that discretion. The key factor is not the relative amount of the budget controlled by the social actor seeking power (in this study, the College deans), but rather the proportion of discretionary funds controlled by that actor. Pfeffer (1981) notes that even when most of the budget is fixed (i.e., a large proportion based purely on rational criteria such as student credit hours or full-time equivalent faculty), a party with discretionary control to award or withdraw the variable proportion of the budget will have tremendous power, regardless of how large or small the absolute amount of variable resources are. The strategy involves first building organizational dependence on the resources before an attempt is made to exercise control.

This point becomes more clear by an example provided by the former department head. He believed that one way in which deans perpetuated resource dependence and subsequently increased centralization of power was through allocation of the maintenance budget. For instance, departments who were successful in procuring large amounts of extramural funds often had an inadequate maintenance budget based on internal allocations. Thus, when the external funds ran out, the departmental maintenance budget suffered accordingly. Because amounts of grants and contracts procurement did not enter into this study, this effect was not tested empirically, but it illustrates one

mechanism by which the central administration can influence resource dependence and subsequent allocations.

There is another interesting footnote to this argument. Pfeffer (1981) notes that subsequent to the publication of the University of Illinois study, two things occurred at Illinois. An announcement was made specifically stating that student credit hours would not be considered as a basis for budget requests. Prior to that time, there had been an assumption that one way of increasing the budget was to take in more students. Though this had not been the case (certain powerful departments showed an inverse relationship between student credit hours taught and proportion of the total budget received), it did have the interesting effect of causing lower power departments to take in more of the students who were formerly taught by the higher power departments. This benefited the latter but not the former. Pfeffer (1981) states:

The announcement was made to formally and finally deny the existence of any enrollment economy governing resources. Confronted with the evidence that nonbureaucratic criteria were being used, great care was taken to justify and legitimate those criteria and to completely discredit the bureaucratic criteria (p. 238).

Additionally, in a series of steps, some of the Research Board's power was stripped away and given to the Dean of the Graduate Division. This act was part of a general move to centralize power and control in the administration.

When interviewing the department head of a non-doctoral-degree-granting department at Oklahoma State

University, the department head said: "He (the dean) is de-emphasizing criteria such as student credit hours and relying more on intangible things such as department prestige (to determine allocations)." It appears also from a recent memo from the Vice-President of Academic Affairs that the Thrust committees for the Presidential Challenge Grant Program will be dismantled shortly. A change in the manner in which the program will be administered has been announced by the President. In the future, final decisions will be made at the College level and reviewed annually by the President. What effect this procedure may have on increasing the centralization of power at the College level at this institution is yet to be determined.

It appears that these strategies by a particular academic dean and by the President may be an attempt to further centralize power at the College level by attempting to legitimate arbitrary and subjective allocation criteria. If that is the case, it suggests that power may indeed play an important role in resource allocation at particular administrative levels. The reason that power does not emerge as a statistically significant variable in the present research may well be due to the particular operational measures of power used in this study.

CHAPTER V

CONCLUSION AND RECOMMENDATIONS

Conclusion

The research was designed to examine the extent to which budgetary allocations to departments are explained by political and bureaucratic factors. Data were gathered to test both dimensions. Secondary budget data for 1978-79, 1979-80, and 1980-81 were used to measure the dependent variable, budgetary allocations to academic departments. This variable was subcategorized as: total expenditures by department, total salaries by department, and total supplies and expenses by department. The dependent variable was stated and tested in the form of a proportion of the respective University total in each instance. Student credit hour production, graduate assistants, and full-time equivalent faculty constituted measures of the bureaucratic dimension of the set of independent variables. To obtain measures of the political (power) dimension of the set of independent variables, three procedures were employed. First, a self-administered questionnaire to be completed by the department head was sent to 29 doctoral degree-granting departments at Oklahoma State University. One department was excluded from the

study at the onset due to the inability to obtain appropriate budgetary data on it. Three department heads chose not to participate, leaving a total of 25 departments. The questionnaire provided information on the following variables: length of tenure of each department head, the department head's perception of the relative power of his/her department, and the department head's perception of the relative power of the other departments in the survey. Second, faculty representation on key committees, which were identified as the budget committee of the Faculty Council and the five Thrust committees of the Presidential Challenge Grant Program, was obtained from archival sources. Third, supplementary personal interviews with selected department heads and academic deans were obtained.

The following general empirical results emerged from Pearson's Product Moment Correlation analysis and/or from stepwise multiple regression analysis:

Bureaucratic Variables:

1. In a given year, student credit hours are the best predictor of total budget allocations to departments. The control variable, College budget, is statistically significant in most equations.

2. The trend data (1978 to 1980) suggest that full-time equivalent faculty explain more of the variation in budget allocation to departments over time than do student credit hours. The latter do not emerge in the trend analysis as being statistically significant from their

inclusion in the regression equation. Again, the control variable, College budget, is statistically significant in explaining budget allocations to departments over time.

Political Variables:

3. Though there are some associations which are statistically significant, the political (power) dimension of the set of independent variables, when introduced into the regression equations, did not contribute much of the explanatory power.

In summary, the results of this research was not consistent with the results of the Pfeffer and Salancik (1978) and the Salancik and Pfeffer (1974) research. In those studies, both student credit hour production and full-time equivalent faculty were statistically significant in predicting budget allocations throughout the analysis; while in the present study, the importance of those variables was contingent on whether the analysis was contingent on whether the analysis was conducted in single years or over time. Also, in the present study, none of the power variables contributed much variation in differential budgetary allocations. However, the control variable, College influence, was a partial determinant of budget allocations to departments in most equations. The Pfeffer (1974) research indicated that the department heads' perceptions of power in their own and other departments and departmental committee representation were important political determinants of budget allocations,

while the influence of the College variable was not. Thus, in the present study it appears that power, rather than being dispersed and showing up in the form of differential power at the department level, appears to be concentrated at the College level.

Based on the literature review, it was expected that bureaucratic criteria would emerge as the best predictors of budgetary allocations to departments. The fact that trend data reflect full-time equivalent faculty as a better predictor of budget allocations than student credit hours still reflects a bureaucratic rational choice decision. Reasons posited for this shift in the results, when measured longitudinally, included the lag effects of the budget process and the long-term objectives of the administration to reduce student/faculty ratios. Also, the fact that the longitudinal data in this study were analyzed for a relatively short time span may be masking long-term trends which perhaps exist. The Pfeffer (1974) research used a 13 year time series, while the present analysis utilized a three year period.

In the present study, committee influence does not appear to benefit departments, nor does it appear to disperse any power which accrues to academic deans. Perceived power, when measured as individual departmental power or the university average of the power of individual departments, does not seem to be related to the direction of budgetary allocations to departments at this

institution. The length of tenure as department head was inversely related to the proportion of the budget received by departments. Possible explanations for this included the "honeymoon period" discussed by former administrators, as well as the administrative transition that was occurring in the College of Arts and Sciences during the time frame under study. Because the Schools were being dismantled into departments, the change in title from "chairman" to "head" was accompanied by personnel changes in several departments. Thus, relatively powerful departments may have been represented in the survey by newly-appointed heads, causing a spurious relationship in an analysis conducted at one point in time.

The personal interviews provided insight regarding what appeared to be a centralization of power at the College level. One explanation was the amount of discretionary power afforded College deans by the President and Vice-President of Academic Affairs in terms of allocating monies to departments. Another speculation was that the centralization of the administrative structure of the State System of Higher Education in Oklahoma may be reflected by a concentration of power at College levels and a minimal dispersion of power at the departmental level. An example of this would be the difference in numbers of committees influencing budget decisions in this institution and the institutions in the Pfeffer (1974) reports. Two major categories of committees were identified at

Oklahoma State University, while the Pfeffer (1974) research identified 13. Other administrators suggested that concentration of power at the College level was pervasive in this geographic region.

The use of departmental power in influencing resource allocation is not unconstrained, as this study has shown. There may be internal constraints mandated by tradition and organizational structure. External forces such as state legislatures and governing bodies affect the allocation of resources within the organization. However, the fact that organizational decision making has elements of political power has implications for understanding organizational behavior (Pfeffer, 1974). This study has illustrated that the bases and uses of power as it relates to the resource allocation process varies from institution to institution, and thus offers avenues for further research.

Limitations of the Study

Several questions were raised that could not be answered definitively as a result of this research project. The most hindering limitation developed as a result of the absence of consistent trend data. The time frame which was ultimately utilized was less than what would be generally desirable in time series analysis. This problem was unavoidable as the data were not available in a form which could be compared for a longer period of time.

As College influence proved to be a significant explanatory factor, it would have been advantageous to have developed additional operational measures to account for its influence. Insight on the influence of College was provided from the qualitative data, but they were not in a form that could be tested empirically in the present study.

A third limitation concerned the manner in which the dependent variable, total university expenditures, was operationalized. The figure used was the summation of the total expenditures to academic departments, but it did not include appropriations to the Agriculture Extension Division or to the Agriculture Experiment Station. As the academic departments in the College of Agriculture benefit from these funds, the negative association between the College of Agriculture and total expenditures to departments in this College may be spurious. Exclusion of these monies biases the effect downward. This limitation also appears to affect the degree to which the land grant mission determines and/or affects allocations to departments.

As was pointed out in the definition of terms, expenditures by department and allocations to department were assumed to be the same monetary amount. This was because data were not available on monies which were allocated at the beginning of the fiscal year and those monies which were actually expended during the fiscal year. This researcher suspects that some evidence of departmental

power might have appeared had these data been available for comparison. This conclusion comes as a result of the interview with the former dean, who acknowledged the existence of discretionary "slush funds" at both the deans' level and at higher administrative levels. These funds could provide the "cushion" for departmental cost overruns, if they occur. Thus, departments which are able to spend more dollars than are originally allocated to them might be presumed to be more powerful, relative to other departments. Additionally, the existence of "slush funds" suggests that certain departments may be the recipient of goods and/or services which do not show up in the departmental budget data. An example of this might be the awarding of certain departments such items as typewriters, and so forth, which then allows departmental maintenance budgets to be diverted to other uses.

Certain resources can be obtained from the Oklahoma State University Foundation. Frye (1978) noted that private dollars received by the Foundation may be used for such things as supporting students who are traveling as representatives of the University or for financing fee waiver scholarships for non-resident students. Whether differential departmental power plays a part in the distribution of such rewards was not a consideration in the present study.

A factor which may have been a limitation is that Oklahoma State University was not experiencing general

resource scarcity during the years of the study. The Hills and Mahoney (1978) research indicated that power measures did not emerge as statistically significant during periods of relative resource abundance.

A final limitation proved to be the small number of persons selected for personal interviews by the researcher. As this source of information proved to be significant in explaining the results of the study, it would have been beneficial to have chosen a sample of deans and department heads who were willing to be candid in their responses, and who were representative of all the Colleges in the study.

Recommendations

Future research possibilities in the vein of this study are numerous, and recommendations for ways to approach them are plentiful. For purposes of illustration, this researcher proposes incorporating a different methodology to approach the same basic research question: To what extent do political and bureaucratic variables predict budget allocations to departments? The bureaucratic variables used in this study seem adequate, though by no means exhaustive. Others which could be incorporated into future studies include: amount of extramural funds procured by departments, faculty recognition at national and international levels, and the level of departmental paradigm development. These variables have been included as bureaucratic measures in previous studies (Lodahl and

Gordon, 1973; Pfeffer, Salancik, and Leblebici, 1976; Pfeffer and Moore, 1980) and have been statistically significant in explaining variations in departmental funding.

To measure more accurately the effect of power on budgetary allocations, this researcher recommends exploring the use of sociometric measurement. Kerlinger (1973) stated:

Sociometry is a simple, economical and naturalistic method of observation and data collection. Whenever such human actions as choosing, influencing, dominating, and communicating . . . are involved, sociometric methods can be used. Sociometry has considerable flexibility. . . . Its quantification and analysis possibilities . . . are rewarding. . . . Matrix methods are the outstanding example. With them, one can discover cliques in groups, communication and influence channels, patterns of cohesiveness, connectedness, hierarchization, and so on (p. 563).

This technique could illustrate how power manifests in informal networks rather than in the formal organizational hierarchy.

Rather than using College budget as the control variable as was done in this study and in the previous studies (Pfeffer and Salancik, 1978; Salancik and Pfeffer, 1974), this variable could be operationalized in such a way that it becomes one of the set of independent variables of the power dimension. Other considerations that could be incorporated into future studies are: controls for length of tenure of deans, changes in proportional allocations to Colleges as a result of a change in the person in the deanship, as well as changes in personnel at the department head level.

As this research has illustrated, bases and uses of power as they affect resource allocation cannot, at this state of the art, be generalized to all institutions. Additional research of this type is necessary at institutions with different organizational structures from the one in the present study. However, it is recommended that future studies be conducted, if possible, at other comprehensive universities in this region. This recommendation was suggested by all department heads interviewed. In discussing the centralization of power at the dean's level, they all believed that power was entrenched in tradition and was a regional phenomenon, especially within the Big Eight institutions. There have been no studies of which this researcher is aware that have addressed this issue.

A final recommendation would be to replicate the present study at this institution at a later point in time. Should resources become more competitive in the future, political criteria in the form in which they were operationalized in this instance may emerge as statistically significant determinants of budget allocations.

In conclusion, if hindsight were foresight, this research might have been a definitive work on power and organizational decision making. However, this researcher is encouraged by what has been discovered about power in decision making by this study and for the avenues it suggests for further study.

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APPENDIXES

APPENDIX A

THE RESEARCH INSTRUMENT

October 26, 1981

XXXX
XXXX
XXXX
Campus

Dear Dr. XXXX:

We are currently engaged in research which is investigating whether a significant relationship exists between perceived departmental prestige on the one hand, and budget allocation expenditures on the other.

In order to advance this effort, we are seeking the cooperation of selected doctoral-degree-granting departments at Oklahoma State University. We would greatly appreciate your assistance and request that you complete and return the enclosed form by November 20. The form is designed to let you rank departments in terms of perceived prestige.

Your responses will be held in strict confidence.

Thanks, in advance, for your help.

Sincerely yours,

Thomas A. Karman
Professor and Head
Department of EAHED



Carol Olson
Research Associate

TK:co

INSTRUMENT

I. Please rate each of the academic departments listed below (including your own) in terms of how you perceive their power status within the total university. Power is defined as the ability of a department to affect decisions so that they conform more closely to what the department wants. If you are unfamiliar with a department below, please check the "Don't Know" column.

- | | |
|-----------------------|-------------------------|
| (1) Very Little Power | (4) Some Power |
| (2) Little Power | (5) Great Deal of Power |
| (3) Moderate Power | (6) Don't Know |

DEPARTMENT	(1)	(2)	(3)	(4)	(5)	(6)
Agricultural Economics						
Agricultural Education						
Agricultural Engineering						
Agronomy						
Animal Sciences						
Biochemistry						
Entomology						
Plant Pathology						
Microbiology						
Botany						
Zoology						
English						
History						
Mathematical Sciences						
Physics						
Sociology						
Economics						
Applied Behav. Studies in Educ.						
Curriculum & Instruction						
Educ. Admini. & Higher Educ.						
Occup. & Adult Educ.						
Psychology						
Chemical Engineering						
Civil Engineering						
Electrical Engineering						
General Engineering						
Industrial Engineering						
Mechanical & Aerospace Engineer.						
Home Economics Education						

- II. (1) Department Name _____
- (2) Length of Time in position as Department Head (Chairman) _____
- (3) Length of Time on Faculty, Including Time as Department Head (Chairman) _____

APPENDIX B
GLOSSARY OF TERMS

Glossary of Terms Used in
Statistical Analysis

1. TED: Total Expenditures by Department
2. TEU: Total Expenditures, University
3. TSD: Total Salaries by Department
4. TSU: Total Salaries, University
5. TSED: Total Supplies and Expenses by Department
6. TSEU: Total Supplies and Expenses, University
7. SCHD: Student Credit Hours by Department
8. SCHU: Student Credit Hours, University
9. FTEFD: Full Time Equivalent Faculty by Department
10. FTEFU: Full Time Equivalent Faculty, University
11. GAD: Graduate Assistants by Department
12. GAU: Graduate Assistants, University
13. FOCD: Faculty on Committees by Department
14. FOCU: Faculty on Committees, University
15. YHD: Years Head of Department
16. HPPD: Head's Perceived Power of own Department
17. UAPPD: University Average Perceived Power of Department

APPENDIX C

MULTIPLE REGRESSION EQUATIONS

TABLE VII
 MULTIPLE REGRESSION EQUATIONS: 1978,
 1980, 1978-1980

DEPENDENT VARIABLE	INDEPENDENT VARIABLES
1. $\frac{TED_{78}}{TEU_{78}}$	$\frac{SCHD_{78}}{SCHU_{78}}, \frac{FTEFD_{78}}{FTEFU_{78}}, \frac{GAD_{78}}{GAU_{78}}, \frac{FOCD_{78}}{FOCU_{78}}$ $\frac{TEC_{78}}{TEU_{78}}$
2. $\frac{TED_{80}}{TEU_{80}}$	$\frac{SCHD_{80}}{SCHU_{80}}, \frac{FTEFD_{80}}{FTEFU_{80}}, \frac{GAD_{80}}{GAU_{80}}, \frac{FOCD_{80}}{FOCU_{80}}$ $\frac{TEC_{80}}{TEU_{80}}, YHD, HPPD, UAPPD$
3. $\frac{TED_{80} - TED_{78}}{TEU_{78}}$	$\frac{SCHD_{80} - SCHD_{78}}{SCHU_{78}}, \frac{FTEFD_{80} - FTEFD_{78}}{FTEFU_{78}}$ $\frac{GAD_{80} - GAD_{78}}{GAU_{78}}, \frac{FOCD_{80} - FOCD_{78}}{FOCU_{78}}$ $\frac{TEC_{80} - TEC_{78}}{TEU_{78}}$
4. $\frac{TSD_{78}}{TSU_{78}}$	$\frac{SCHD_{78}}{SCHU_{78}}, \frac{FTEFD_{78}}{FTEFU_{78}}, \frac{GAD_{78}}{GAU_{78}}, \frac{FOCD_{78}}{FOCU_{78}}$ $\frac{TSC_{78}}{TSU_{78}}$
5. $\frac{TSD_{80}}{TSU_{80}}$	$\frac{SCHD_{80}}{SCHU_{80}}, \frac{FTEFD_{80}}{FTEFU_{80}}, \frac{GAD_{80}}{GAU_{80}}, \frac{FOCD_{80}}{FOCU_{80}}$ $\frac{TSC_{80}}{TSU_{80}}, YHD, HPPD, UAPPD$
6. $\frac{TSD_{80} - TSD_{78}}{TSU_{78}}$	$\frac{SCHD_{80} - SCHD_{78}}{SCHU_{78}}, \frac{FTEFD_{80} - FTEFD_{78}}{FTEFU_{78}}$ $\frac{GAD_{80} - GAD_{78}}{GAU_{78}}, \frac{FOCD_{80} - FOCD_{78}}{FOCU_{78}}$ $\frac{TSC_{80} - TSC_{78}}{TSU_{78}}$
7. $\frac{TSED_{78}}{TSEU_{78}}$	$\frac{SCHD_{78}}{SCHU_{78}}, \frac{FTEFD_{78}}{FTEFU_{78}}, \frac{GAD_{78}}{GAU_{78}}, \frac{FOCD_{78}}{FOCU_{78}}$ $\frac{TSEC_{78}}{TSEU_{78}}$
8. $\frac{TSED_{80}}{TSEU_{80}}$	$\frac{SCHD_{80}}{SCHU_{80}}, \frac{FTEFD_{80}}{FTEFU_{80}}, \frac{GAD_{80}}{GAU_{80}}, \frac{FOCD_{80}}{FOCU_{80}}$ $\frac{TSEC_{80}}{TSEU_{80}}, YHD, HPPD, UAPPD$
9. $\frac{TSED_{80} - TSED_{78}}{TSEU_{78}}$	$\frac{SCHD_{80} - SCHD_{78}}{SCHU_{78}}, \frac{FTEFD_{80} - FTEFD_{78}}{FTEFU_{78}}$ $\frac{GAD_{80} - GAD_{78}}{GAU_{78}}, \frac{FOCD_{80} - FOCD_{78}}{FOCU_{78}}$ $\frac{TSEC_{80} - TSEC_{78}}{TSEU_{78}}$

These equations were repeated using college dummy variables instead of college budget data.

APPENDIX D

RAW DATA: 1978-1979

TABLE VIII
BUREAUCRATIC VARIABLES BY DEPARTMENT,
1978-1979

Department	Total Expendi- tures	Total Student Credit Hours	Total Full-Time Equivalent Fac- ulty
Agricultural Economics	\$230,143	7146	30.75
Agricultural Education	140,342	1912	6.55
Agricultural Engineering	149,464	2609	19.50
Agronomy	313,161	7086	43.10
Animal Sciences	490,836	9886	35.00
Biochemistry	119,163	2522	15.50
Entomology	104,207	1474	14.00
Plant Pathology	46,680	789	8.75
Microbiology	391,453	3302	14.07
Botany	178,975	1511	6.44
Zoology	311,222	2615	11.20
English	794,265	31384	34.68
History	436,570	19440	17.00
Physics	548,949	12929	23.88
Sociology	475,684	16319	17.88
Economics	498,650	20172	18.00
ABSED	421,133	13380	19.00
CIED	619,471	17192	24.60
EAHED	179,982	2165	7.75
OAED	265,790	5286	13.73
Psychology	604,524	19996	23.00
Chemical Engineering	275,434	2095	7.15
Civil Engineering	402,293	5335	15.50

TABLE VIII (Continued)

Department	Total Expenditures	Total Student Credit Hours	Total Full-Time Equivalent Faculty
Electrical Engineering	\$324,022	4296	11.94
General Engineering	11,933	24	.25
Industrial Engineering	277,824	3254	10.25
Mechanical Engineering	408,308	5299	12.68
Home Economics Education	125,022	1673	4.91

APPENDIX E

RAW DATA: 1980-1981

TABLE IX
BUREAUCRATIC VARIABLES BY DEPARTMENT,
1980-1981

Department	Total Expendi- tures	Total Student Credit Hours	Total Full-Time Equivalent Fac- ulty
Agricultural Economics	\$314,822	7548	37.85
Agricultural Education	196,932	2054	7.00
Agricultural Engineering	216,507	2734	21.50
Agronomy	426,431	6440	45.00
Animal Sciences	583,416	10,660	41.00
Biochemistry	164,938	2292	25.00
Entomology	154,149	1471	16.00
Plant Pathology	78,277	693	8.00
Microbiology	548,366	2850	18.63
Botany	259,560	1348	8.84
Zoology	410,665	2126	13.99
English	1,093,339	31,021	35.25
History	661,025	16,623	20.25
Physics	931,755	12,275	26.30
Sociology	660,164	15,166	18.50
Economics	699,512	21,778	24.50
ABSED	599,792	13,868	21.24
CIED	801,169	15,199	25.70
EAHED	238,414	2715	8.75
OAED	441,943	5904	17.70
Psychology	876,508	19,183	22.75
Chemical Engineering	302,574	2099	9.45
Civil Engineering	657,472	4958	19.63

TABLE IX (Continued)

Department	Total Expenditures	Total Student Credit Hours	Total Full-Time Equivalent Faculty
Electrical Engineering	473,988	4532	11.60
General Engineering	16,826	3	4.35
Industrial Engineering	367,671	3730	11.07
Mechanical Engineering	585,069	5600	16.19
Home Economics Education	212,139	1677	5.40

~
VITA

Carol Margaret Olson

Candidate for the Degree of

Doctor of Education

Thesis: POWER AND ORGANIZATIONAL DECISION MAKING: RESOURCE ALLOCATION AT A STATE UNIVERSITY

Major Field: Higher Education

Biographical:

Personal Data: Born in Washington, D.C., in 1943, the daughter of T. F. and Mary Anita Voiles; married to Kent W. Olson; children, Michael W. Burdge, John T. Burdge, and Stephanie C. Burdge.

Education: Graduated from Perryton High School, Perryton, Texas, in May, 1961; received Bachelor of Science degree in Sociology from Oklahoma State University in 1977; received Master of Science degree in Sociology from Oklahoma State University in 1979; completed requirements for the Doctor of Education degree at Oklahoma State University in May, 1982.

Professional Experience: Office Manager, Texco Grain Company, Hooker, Oklahoma, 1968-70; 1972-75; Graduate Teaching Assistant, Department of Sociology, Oklahoma State University, 1978-79; Academic Counselor, Department of Sociology, Oklahoma State University, 1979-81; Assistant to the Dean, Graduate College, Oklahoma State University, 1981 to present; Adjunct Instructor, Department of Sociology, Oklahoma State University, 1981 to present.