Institutional Environments and Resource Dependence: Sources of Administrative Structure in Institutions of Higher Education

Pamela S. Tolbert

Two theoretical perspectives are combined to explain the pattern of administrative offices in public and private institutions of higher education. The first perspective, resource dependence, is used to show that the need to ensure a stable flow of resources from external sources of support partially determines administrative differentiation. The second perspective, institutionalization, emphasizes the common understandings and social definitions of organizational behavior and structure considered appropriate and nonproblematic and suggests conditions under which dependency will and will not predict the number of administrative offices that manage funding relations. The results of the analyses indicate that dependence on nontraditional sources of support is a strong predictor of administrative differentiation and demonstrate the validity of integrating these two theoretical perspectives.•

In explaining the formal structure of organizations, classic organization theory emphasizes problems of coordination and control of work activities (e.g., Taylor, 1911; Weber, 1946; Simon, 1956). Reflecting this tradition, research on sources of growth in the administrative component of organizations has typically focused on factors such as size and complexity that are assumed to impede the efficient supervision of tasks (Terrien and Mills, 1955; Bendix, 1956; Anderson and Warkov, 1961; Pondy, 1969; Blau, 1970; Hsu, Marsh, and Mannari, 1983).

Recent work on this problem, however, places greater emphasis on environmental relations and influences than on internal relationships as determinants of administrative structure (Freeman, 1973; Meyer and Brown, 1977). A number of different perspectives on organizational environments and the way in which environments affect organizational behavior and structure have emerged. In one, the environment is conceptualized in terms of other organizations with which the focal organization engages in direct exchange relations (Levine and White, 1961; Thompson, 1967; Pfeffer and Salancik, 1978). Administrative structure, from this perspective, reflects efforts to ensure a stable flow of resources and to manage problems and uncertainties associated with exchange transactions. Increasing dependence on exchange relationships produces administrative differentiation as organizations create offices and positions to manage these relationships.

In a second approach, the environment is conceptualized in terms of understandings and expectations of appropriate organizational form and behavior that are shared by members of society (Zucker, 1977, 1983). Such normative understandings constitute the institutional environment of organizations. Organizations experience pressure to adapt their structure and behavior to be consistent with the institutional environment in order to ensure their legitimacy and, hence, their chances of survival (Meyer and Rowan, 1977; DiMaggio and Powell, 1983).

This research integrates these two perspectives to explain administrative differentiation in colleges and universities. A central premise of this approach is that dependency relationships can, over time, become socially defined as appropriate and legitimate. It is hypothesized that when relations are

institutionalized in this way, variations among organizations in actual level of dependency will be unrelated to the number of administrative offices associated with the management of the relations. When an organization enters into an exchange relationship that runs counter to institutionalized patterns, however, the maintenance of this relationship will generally require intensive administrative effort. It is hypothesized that when relations are not institutionalized, increasing dependence will be directly associated with the proliferation of administrative offices to manage the relationship. Thus, the institutional environment defines the conditions under which increased dependency leads to administrative differentiation. This research investigates these hypotheses, focusing on patterns of dependence among higher education institutions and the number of administrative offices that manage these dependencies.

THE INSTITUTIONAL ENVIRONMENT AND RESOURCE DEPENDENCE

In modern, rational-legal societies, organizations are typified as systems of rationally ordered rules and activities (Weber, 1946). Because of this shared typification, behavior that occurs in an organizational setting is particularly apt to be perceived as rational and "fact-like," not reflecting the random error of personal idiosyncracies. In this context, organizational practices and policies readily become institutionalized, that is, they become widely accepted as legitimate, rational means to attain organizational goals (Zucker, 1977; Meyer and Rowan, 1977; Scott and Meyer, 1983). Such widespread social conceptions of appropriate organizational form and behavior constitute the institutional environment of organizations. Organizations experience pressure to conform to these common understandings of rational and efficient structure, since violating them may call into question the legitimacy of the organization and thus affect its ability to obtain resources and social support (Rowan, 1982; Tolbert and Zucker, 1983; DiMaggio and Powell, 1983).

Using this framework, two additional propositions are advanced here. The first is that the institutional environment of organizations is differentiated. It is not that some organizations are constrained by the institutional environment while others are not; rather, there are different expectations for different types of organizations. Many of the commonplace distinctions that are drawn between public and private organizations reflect such differentiated expectations. Second, patterns of interorganizational exchange relations, as well as elements of structure, are presumed to be subject to the process of institutionalization. In other words, in the institutional environment there are normative understandings of appropriate and inappropriate organizational dependency patterns.[1]

Structural arrangements associated with institutionalized dependencies often become institutionalized as well. Thus, organizations characterized by a common, socially defined dependency pattern will exhibit similar structural features — common administrative offices, formal policies, and so forth. Since these elements of structure are part of the organizations' institutional environment, their presence in organizations will not be directly related to actual increases or decreases in the level of dependency.

[1]
The intense debate over the bail-out of the Chrysler Corporation by the federal government is a highly visible example of the institutionalized nature of dependencies. Criticisms of the government's actions clearly reflected not only long-run cost concerns, but common conceptions of the appropriateness and legitimacy of public support of a private organization (see Chapman, 1979; Friedman, 1979; Samuelson, 1979).

Dependency relations that are not institutionalized are general-
ly less predictable, more uncertain. As these relations become
an increasingly important source of support for the organiza-
tion, the number of administrative offices and positions associ-
ated with the management of the relations is likely to grow. In
this case, the magnitude of dependency will predict adminis-
trative differentiation. Formal offices are created to serve a
directly functional role in negotiating and managing the de-
mands and problems accompanying the relationship. They
serve a symbolic role as well, since their presence can act as
an indicator, or signal, of the organization's commitment to the
exchange relationship (Spence, 1973, 1974; Meyer, 1979).
Thus, the institutionalization of dependency relations deter-
mines whether or not increasing dependence will directly
affect the proliferation of formal administrative offices within
organizations.

ADMINISTRATIVE DIFFERENTIATION AND PATTERNS OF DEPENDENCE

In applying these ideas to an examination of administrative
differentiation in colleges and universities, distinctions must be
made between public and private institutions. The two types of
institutions have a long-standing tradition of drawing on differ-
ent sources of financial support. Public institutions have typi-
cally relied heavily on governmental sources of support, espe-
cially support from state legislatures, while private institutions
have received their income primarily from tuition, endow-
ments, and gifts and grants from private donors.

These patterns derive historically from a major legal decision
addressing the issue of state control over institutions of higher
education. During the colonial period, state governments pro-
vided substantial subsidies to private institutions within their
jurisdictions. In 1819, however, a Supreme Court ruling estab-
lished the autonomy of private higher education institutions
from government supervision and control. Following this deci-
sion, states rapidly withdrew support from these institutions
(Rudolph, 1962; Brubacher and Rudy, 1965). While private
institutions became increasingly reliant on tuition and privately
sponsored endowment funds as primary sources of revenues,
an ideology developed to accompany this independence,
promoted largely by the institutions themselves. As Rudolph
(1962: 189) noted, "Before long, college presidents would be
talking like President Eliot [of Harvard University] as spokes-
men for rugged individualism, for the virtues of independence
and freedom from state support."

Over time, differences in dependency relations for public and
private colleges and universities have become institutional-
ized; dependence on different sources of support is viewed as
an appropriate difference between the two types of organiza-
tions. Patterns of support for public and private colleges and
universities provide evidence of the institutionalization of these
dependencies, as shown in Table 1.

Private institutions have regularly derived approximately 10
percent of their income from private gifts and donations,
whereas public institutions have typically received only about 2
percent of their income from this source. Public institutions, on
the other hand, have been able to depend heavily on state and

Table 1

Percentage of Revenues of Public and Private Colleges and Universities from Major Sources of Support, 1939–1974*

	Public				Private			
	State	Federal	Tuition	Gifts	State	Federal	Tuition	Gifts
1939–49	61.9	13.5	20.3	1.9	3.1	.1	57.0	13.8
1953–54	65.6	16.0	13.3	3.1	2.6	19.1	47.0	16.6
1959–60	59.4	21.6	13.2	3.4	2.1	25.9	43.8	15.6
1961–62	44.0	18.6	10.4	2.4	1.7	23.2	32.4	10.6
1963–64	42.9	19.1	11.2	2.2	3.0	26.5	30.4	10.6
1967–68	44.5	17.8	11.6	.6	1.3	28.2	33.6	7.6
1970–71	47.5	11.7	13.1	1.9	2.2	12.1	35.8	9.5
1971–72	46.3	11.8	13.7	1.9	2.2	11.8	35.8	9.7
1972–73	47.1	12.1	13.4	2.0	2.3	11.5	35.6	9.4
1973–74	47.9	11.1	12.9	2.0	2.7	11.0	35.8	9.5

*Data for the years 1939–1960 are from O'Neill (1973); data for the remaining years are from U.S. Department of Health, Education and Welfare, National Center for Education Statistics, *Financial Statistics of Higher Education.*

local legislatures for support. This is clearly not the case for their private counterparts. Moreover, the proportion of revenues derived from each of these major sources shows remarkably little variation within each set of institutions over the 20-year period. Only revenues from the federal government show any substantial change, reflecting waxing and waning support for academic research. This overall stability suggests strongly institutionalized patterns of dependency relations. Private donors and alumni target private colleges and universities as appropriate beneficiaries of their largesse, while government agencies favor those in the public sector as appropriate recipients.

Consequently, public institutions typically find it more difficult to obtain significant financial support from private funding agencies and alumni than do private institutions. The latter, in turn, often find governmental bodies, particularly state and local legislatures, extremely reluctant to offer financial support. A small but noteworthy indication of this is the move by many private institutions to relabel themselves as "independents." This accompanies efforts by these institutions to attract public sources of funding (Breneman and Finn, 1982).

It has been argued that it is only when dependency relations are not institutionalized that the degree of dependency will predict administrative differentiation. Thus, it is hypothesized:

Hypothesis 1: Dependence on public sources of support will strongly predict the number of administrative offices that manage public-funding relations among private institutions.

Hypothesis 1a: Dependence on public sources of support will not predict the number of public-funding offices among public institutions.

Hypothesis 2: Dependence on private sources of support will strongly predict the number of administrative offices that manage private-funding relations among public institutions.

Hypothesis 2a: Dependence on private sources of support will not predict the number of private-funding offices among private institutions.

If differentiation is linked simply to the management of particular types of dependency relations, there should be no interaction effects of control and dependency as predictors of dif-

ferentiation. If administrative differentiation is affected by the institutionalization of the relationship, dependence on particular sources of support should show an interactive relationship with control in predicting differentiation.

METHOD

Data

Data used in the analyses are from the Higher Education General Information Survey (National Center for Education Statistics, 1980) and other secondary data sources for 1975–1976. The survey is conducted annually among two- and four-year institutions of higher education in the United States and gathers a variety of information on these institutions, including enrollment, sources of revenues, and expenditure patterns. In addition, the survey asks respondents to list key administrative officers and their positions; each position is then assigned a common job code, based on the description of the associated administrative responsibilities. These data have two advantages. First, they are the only publicly available data on college and university administration at the national level. Second, because common job codes are assigned, there is no problem with functionally equivalent offices having different job titles.

Sample

The sample was drawn from the set of higher education institutions classified by the Carnegie Commission as either doctorate-granting or as "comprehensive." This included all major research institutions, universities granting at least 20 Ph.D.'s yearly, and institutions offering professional programs in addition to a basic liberal arts curriculum. These institutions were stratified by public and private control, and a random sample was drawn within each stratum. The resulting sample contained 281 institutions, of which 167 were public and 114 were private.

Measuring Administrative Differentiation

From the list of coded administrative positions, six were selected as having major responsibility for managing relations with external sources of financial support. These were used to measure the dependent variables, the number of offices with primary responsibility for the management of private-funding sources and the number responsible for dealing with public-funding sources.

Administrative positions with responsibility for managing private funding include those of chief development officer, director of alumni relations, and director of admissions. The job description of the duties of the chief development officer includes obtaining financial support from alumni and other organizations, coordinating volunteer fund-raising activities, and managing general public relations activities (Jones, 1977). The duties of the director of alumni relations are very similar, though obviously targeted specifically at alumni groups. The director of admissions is responsible for the recruitment, selection, and admission of students. Since tuition fees are often a significant source of private-sector support, how the recruitment and selection processes are managed can have an important impact on the institution's support base.

Responsibility for dealing with sources of public funding is assigned to the director of the information office, the chief planning officer, and the director of institutional research. The duties of the director of the information office center on providing information about the institution to students, faculty, and the general public. This includes preparing and reviewing news releases and information bulletins, and managing relations with the news media. The director of institutional research carries out research on the institution itself and disseminates this information to appropriate sources (e.g., legislative or governmental agencies). The responsibilities of the chief planning officer include monitoring and managing state and federal relations, as well as long-range planning to allocate institutional resources. It should be noted that the office of each serves a variety of functions, not all directly involving funding relations.

Table 2 shows the percentage of public and private institutions that report having each of these administrative positions. The percentage of private institutions reporting the presence of a

Table 2

Percentage of Public and Private Institutions Reporting Selected Administrative Positions for Funding Relations

Administrative positions	Public	Private
Chief Development Officer	47.9	83.3
Director of Admissions	66.5	86.8
Director of Alumni Relations	50.3	61.4
Chief Planning Officer	43.7	28.9
Director of Information	43.1	25.4
Director of Institutional Research	45.5	24.6

chief development officer and a director of admissions is significantly higher than that of public institutions. A noticeably higher proportion of private institutions also reports having a director of alumni relations, although the difference does not reach significance. Public institutions, on the other hand, report significantly more often having the positions that manage relations associated with sources of public funding.

These results accord with expectations derived from both the institutionalization and resource dependence perspectives. In the first perspective, structural patterns are expected to be associated with institutionalized dependencies. Thus, the greater frequency of private-funding offices among private institutions and public-funding offices among public institutions is predicted. Likewise, from a resource dependence perspective, private-funding offices would be expected to occur more frequently among private institutions that presumably depend more heavily on private sources of support, while the reverse would be expected for public-funding offices.

However, the resource dependence perspective suggests that increasing dependence should predict an increase in such offices, regardless of the type of organizational control. If, in contrast, the creation of these offices is affected by the institutionalization of dependency relations, increased dependence on public funding should be a better predictor of the occurrence of the three public-funding offices in private institutions than in public ones. Similarly, the creation of the three

private-funding offices should be more strongly predicted by dependence on private funds in public universities.

Measuring Dependence

Dependence was measured by the proportion of the institution's total revenues derived from four primary sources of support: government appropriations, government grants and contracts, gifts and grants from private sources, and "self-generated" funds — tuition, fees, and endowment income. The first category, government appropriations, is a source of support traditionally viewed as a mainstay of public institutions, while the last two categories are support that is conventionally associated with private status. Although public and private institutions have both received government grants and contracts for research since World War II (Nelson, 1978), government grants will be treated here as technically a public source of support.

Control Variables

In addition to the measures of dependency, the analyses included two other independent variables as controls: size and a measure of research orientation. Size, measured here by total student enrollment, has often been linked to administrative differentiation (Terrien and Mills, 1955; Blau, 1970; Hsu, Marsh, and Mannari, 1983). This measure was logged to correct for skewedness. The complexity of administration in institutions with a strong research orientation, measured by the percentage of total expenditures allocated for research activities, might also be expected to produce administrative differentiation. Thus, these variables were included to ensure that the observed relationships were not merely reflections of differences in size or between research and nonresearch institutions.

ANALYSIS

To test the effects of resource dependence on administrative differentiation, two dependent variables were created, one based on the number of public-funding offices reported and one based on the number of private-funding offices reported. Table 3 shows the means and standard deviations of the variables by type of institution.

Table 3

Means and Standard Deviations of Resource-Dependence Variables by Type of Institution

Variable	Public ($N = 167$)		Private ($N = 114$)	
	Mean	S.D.	Mean	S.D.
Size (in 1000's)	16.511	11.214	8.722	6.556
% Expenditures for research	9.133	8.691	8.344	8.822
% Revenues				
Government appropriations	48.044	13.659	2.345	4.920
Government grants	11.708	7.506	13.642	10.217
Private gifts	2.462	2.242	7.837	5.275
Self-generated	15.496	8.322	51.034	19.289
Number of public-funding offices	1.396	.876	.876	.877
Number of private-funding offices	1.718	.938	2.389	.760

In each case, the dependent variable can assume one of only four possible values (0–3). Because multivariate linear analy-

ses are based on assumptions requring an interval level of measurement for the dependent variable (Maddala, 1983), the use of ordinary-least-squares techniques is inappropriate.[2] Instead, an ordered probit model was employed. This is an extension of a dichotomous probit model that is applicable to analyses involving ordinal dependent variables (McKelvey and Zavoina, 1975; Winship and Mare, 1984). With this analytic procedure, a distinction is drawn between an underlying theoretical dependent variable, which has an interval scale of measurement, and the observed dependent variable, which is ordinal. In the present case, the latent theoretical variable may be thought of as the amount of pressure for administrative differentiation; the observed variable is the presence of zero, one, two, or three offices.

More formally, if Y^* is the underlying theoretical variable, and Y is the observed variable, then it is assumed:

$$Y^* = \beta X + u, \tag{1}$$

where $u \sim N(0, \sigma^2)$. To set the scale of measurement, $\sigma^2 \equiv 1$ (see Jöreskog and Sörbom, 1981).

Then:

$$Y = \begin{cases} 0 \text{ if } Y^* \leq \alpha_0 \\ 1 \text{ if } \alpha_0 < Y^* \leq \alpha_1 \\ 2 \text{ if } \alpha_1 < Y^* \leq \alpha_2 \\ 3 \text{ if } \alpha_2 < Y^* \end{cases} \tag{2}$$

The alphas in this equation represent the threshhold points in the distribution of Y^* at which the observed Y takes on a different value. The relationship between the latent variable, Y^*, and the observed Y is depicted in Figure 1.
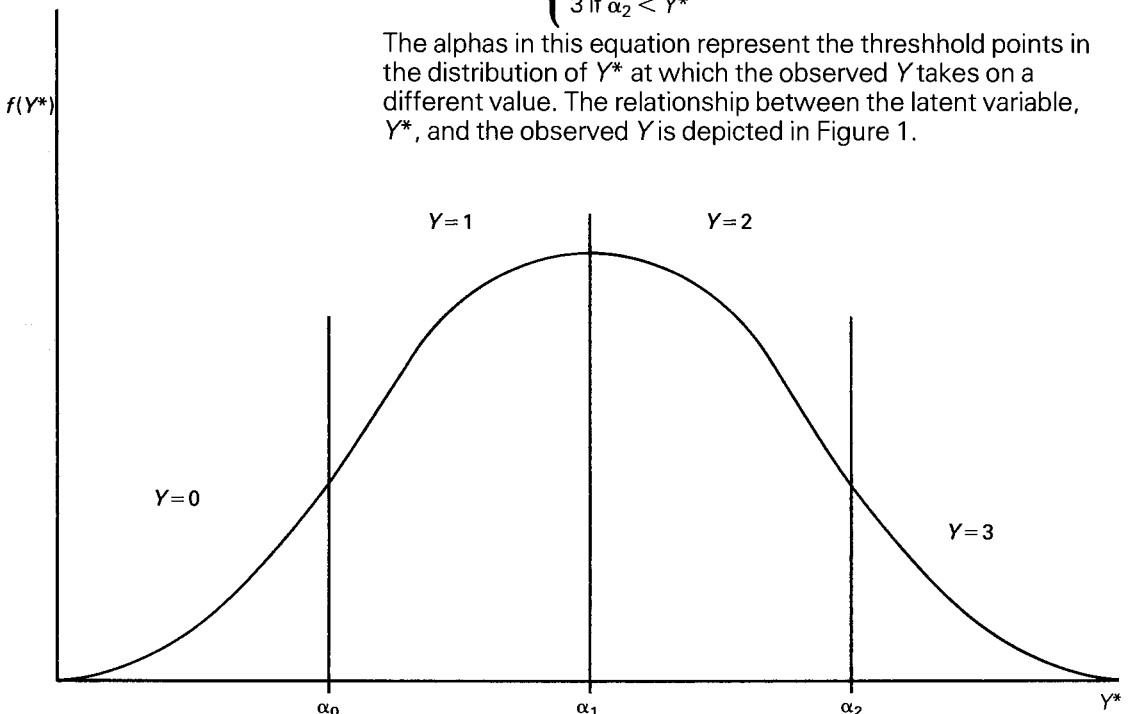

Figure 1: Relationship between observed ordinal variable (Y) and latent continuous variable (Y^*).

2
Linear regression models are based on the assumption that the distribution of data points around the regression line yields a set of error terms with a mean of zero and a constant variance. When dealing with an ordinal dependent variable, these assumptions are generally not valid (McKelvey and Zavoina, 1975).

Combining the first two equations implies that:

$$P(Y = 0|X) = \tag{3}$$
$$P(Y^* \leq \alpha_0|X) =$$
$$P(\beta X + u \leq \alpha_0) =$$
$$P(u \leq \alpha_0 - \beta X) =$$
$$F(\alpha_0 - \beta X),$$

where $F(\alpha_0 - \beta X)$ signifies a standard normal cumulative density function (see Figure 1). This can readily be extended to the other values of Y. Because ordered probit models take into account ceiling and floor restrictions on probabilities, they are highly preferable to linear models when the observed Y is markedly skewed (Winship and Mare, 1984).

Maximum likelihood methods (Berndt et al., 1974; McKelvey and Zavoina, 1975; Chow, 1983) were used to obtain estimates of the parameters of the model. Separate analyses were carried out for each dependent variable, using the full sample of institutions. These analyses were then repeated, using the subsamples of public and private institutions.

RESULTS

Table 4 presents the results of the ordered probit analysis of the number of public-funding offices, using the full sample of institutions. The beta coefficients represent the slope coefficients in the latent regression, or the increment in Y^* brought about by a unit change in the independent variable. The first alpha coefficient is automatically set to zero for normalization. The other two alphas represent the remaining cutpoints in the distribution of Y^*. The λ is a test of the overall significance of the model, based on a comparison of the presented model with one in which the betas are constrained to be zero.

Table 4

Ordered Probit Analysis of Public-Funding Offices in Total Sample

Independent variables	B	S.E.	t-value
Constant	−.231	.200	−1.16
Size	$.267^{-4}$	$.774^{-5}$	3.45•••
% Research expenditures	−.006	.012	−.50
Control (public)	.653	.363	1.70•
% Government appropriations	.038	.033	1.12
% Government grants	.016	.013	1.17
Control x appropriations	−.032	.016	−1.95••
Control x grants	−.028	.016	−1.77•
α_1	1.137	.095	12.00•••
α_2	2.183	.135	16.17•••
Log L	−333.07		
λ	44.44•••		

•$p<.10$; ••$p<.05$; •••$p<.01$.

There are clear interactive effects of control and dependence on government grants and appropriations. Apart from size, the strongest and only significant predictors of the number of public-funding offices are public control and the interaction terms.

In Table 5 the analysis is repeated, using the number of private-funding offices as the dependent variable.

Dependence on private gifts and self-generated sources of funding are not, by themselves, strong predictors of the number of offices. The interaction term for control and dependence on private gifts does emerge as significant, however, along with the terms for control and for size.

Table 5

Ordered Probit Analysis of Private-Funding Offices in Total Sample

Independent variables	B	S.E.	t-value
Constant	1.678	.499	3.36•••
Size	$.171^{-4}$	$.763^{-5}$	2.25•••
% Research expenditures	.008	.009	.85
Control (public)	−1.210	.492	−2.46•••
% Private gifts	−.003	.022	−.14
% Self-generated	.013	.013	.57
Control x gifts	.061	.034	1.87•
Control x self-generated	.013	.013	.98
α_1	1.996	.113	8.79•••
α_2	2.050	.133	15.41•••
Log L	−333.65		
λ	53.18•••		

•$p<.10$; ••$p<.05$; •••$p<.01$.

Both analyses suggest, then, that the effect of dependency on administrative differentiation varies for public and private institutions. To examine this more closely, the analyses were repeated, using the subsamples of each type of institution.

The ordered probit analyses for public-funding offices by public and private institutions are shown in Table 6.

Table 6

Ordered Probit Analysis of Public-Funding Offices in Public and Private Institutions

Independent variables	Public B	S.E.	t-value	Private B	S.E.	t-value
Constant	.521	.343	1.52	−.469	.240	−1.96••
Size	$.187^{-4}$	$.895^{-5}$	2.08••	$.680^{-4}$	$.241^{-4}$	2.83•••
% Research expenditures	−.005	.013	−.34	−.020	.030	−.68
% Government appropriations	.005	.005	.97	.037	.018	1.94••
% Government grants	−.009	.015	−.64	.018	.023	.78
α_1	1.156	.122	9.47•••	1.001	.253	6.78•••
α_2	2.207	.167	13.23•••	2.223	.177	11.38•••
Log L	−209.49			−120.46		
λ	6.30			18.62•••		

•$p<.10$; ••$p<.05$; •••$p<.01$.

Among public institutions, only size emerges as a strong predictor. Increasing dependence on public sources of support has no substantial effect on the number of public-funding offices. Overall, the low value of λ indicates that these variables add little to the prediction of administrative differentiation. Among private institutions, on the other hand, dependence on governmental appropriations is significantly related to differentiation. The test statistic for the overall model is also significant in this case. These results, then, are consistent with the first hypothesis and its corollary.

Table 7 presents the analyses for private-funding offices by type of institution. As hypothesized, increasing dependence on private sources of support, particularly private gifts, is a much stronger predictor of differentiation in public than in private

Table 7

Ordered Probit Analysis of Private-Funding Offices in Public and Private Institutions

Independent variables	Public B	Public S.E.	t-value	Private B	Private S.E.	t-value
Constant	.475	.250	1.90●●	1.567	.695	2.54●●●
Size	.100⁻⁴	.834⁻⁵	1.20	.686⁻⁴	.297⁻⁴	2.31●●
% Research expenditures	.016	.012	1.33	−.021	.020	−1.06
% Private gifts	.059	.030	1.92●●	.006	.025	.24
% Self-generated	.018	.012	1.51	.001	.008	.06
α_1	.957	.112	7.81●●●	1.166	.292	3.99●●●
α_2	2.060	.153	13.47●●●	2.179	.307	7.09●●●
Log L	−212.87			−117.20		
λ	13.92●●			9.00		

●$p<.10$; ●●$p<.05$; ●●●$p<.01$.

institutions. In the latter case, the measures of dependence on each source have virtually no relationship to the number of private-funding offices. Thus, these results provide support for the second set of hypotheses as well.

As expected, dependence on public or private sources of funding predicts the proliferation of administrative offices only when the dependencies are not aligned with traditional patterns. In other words, dependence on a given exchange relationship may or may not lead to the creation of offices and positions to manage those relationships. Since institutionalized dependencies are often accompanied by the institutionalization of structural components, organizations characterized by such relations adopt those components ceremonially, independent of actual levels of support. Thus, increasing dependence does not necessarily produce administrative differentiation. It is only when dependency relations are not institutionalized that increasing dependence is strongly associated with the development of separate administrative offices to manage them.

DISCUSSION

These analyses suggest that an institutionalization perspective defines conditions under which hypotheses generated by a resource dependence perspective will hold. There are, however, alternative explanations and modifications of this argument to be considered. First, it could be argued that the results of the analysis simply reflect the limited variance of the independent variables when dependencies follow traditional patterns. Examination of the means and standard deviations of the variables, shown in Table 3, substantially weakens the plausibility of this argument. None of the measures of traditional dependencies (e.g., government appropriations among public institutions, gifts and donations among private institutions) has a markedly restricted variance. The range for the measure of dependence on government appropriations among public institutions is from 10 to 84 percent of total revenues; the range for dependence on private gifts is from 1 to 33 percent among private institutions. Thus, this alternative is not supported by the data.

It might also be argued that the relationship between dependence and administrative differentiation should be reciprocal.

While a plausible case may be made for this, the central concern of the present analysis is to demonstrate the link between two general theoretical perspectives that focus primarily on the sources of administrative differentiation rather than on the consequences. The latter, however, remains an interesting problem for further research.

CONCLUSIONS

Contemporary research on organizations has produced a variety of theoretical perspectives, each pointing to different explanatory factors. Although the complementarity of different perspectives is sometimes acknowledged (Aldrich and Pfeffer, 1976; Ulrich and Barney, 1984), empirical research typically draws on a single theoretical approach in explaining particular cases of organizational behavior and structure. Positive outcomes are interpreted as evidence of the validity of that perspective.

It is clear, however, that most of the perspectives that currently guide research are not truly competitive, such that support for one undermines another. Instead, they are more likely simply to be applicable under different conditions, as was the case in this study. By combining resource dependence and institutionalization perspectives, a much fuller explanation of the process of administrative differentiation was provided than could have been provided by either perspective independently.

Organizational phenomena are much too complex to be described adequately by any single theoretical approach. Current research on organizations could benefit greatly if researchers were to pay closer attention to specifying the points of intersection of different theoretical perspectives and to combining these perspectives to provide more complete explanations of the behaviors they study.

REFERENCES

Aldrich, Howard, and Jeffrey Pfeffer
1976 "Environments of organizations." In A. Inkeles (ed.), Annual Review of Sociology, 2: 79–105. Palo Alto, CA: Annual Reviews.

Anderson, Theodore, and Seymour Warkov
1961 "Organizational size and functional complexity: A study of administration in hospitals." American Sociological Review, 26: 23–38.

Bendix, Reinhard
1956 Work and Authority in Industry New York: Wiley.

Berndt, E. K., B. H. Hall, R. E. Hall, and J. A. Hausman
1974 "Estimation and inference in non-linear structural models." Annals of Economic and Social Measurement, 3: 653–666.

Blau, Peter
1970 "A formal theory of differentiation in organizations." American Sociological Review, 35: 201–218.

Breneman, David, and Chester Finn, Jr.
1982 "An uncertain future." In D. Breneman and C. Finn (eds.), Public Policy and Private Higher Education: 1–62. Washington, DC: Brookings.

Brubacher, John, and Willis Rudy
1965 Higher Education in Transition. New York: Harper & Row.

Chapman, Stephen
1979 "No-fault capitalism." New Republic, 181 (November 17): 11–14.

Chow, Gregory
1983 Econometrics. New York: McGraw-Hill.

DiMaggio, Paul, and Walter Powell
1983 "The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields." American Sociological Review, 48: 147–160.

Freeman, John
1973 "Environment, technology and the administrative intensity of manufacturing organizations." American Sociological Review, 38: 750–763.

Friedman, Milton
1979 "Are jobs the issue?" Newsweek, 94 (September 10): 66.

Hsu, Cheng-Kuang, Robert Marsh, and Hiroshi Mannari
1983 "An examination of the determinants of organizational structure." American Journal of Sociology, 88: 975–996.

Jones, Dennis
1977 A Manual for Budgeting and Accounting for Manpower Resources in Postsecondary Education. Washington, DC: National Center for Education Statistics.

Jöreskog, Karl, and Dag Sörbom
1981 Analysis of Linear Structural Relationships by Maximum Likelihood and Least Squares Methods. Uppsala: University of Uppsala.

Levine, Sol, and Paul White
1961 "Exchange as a conceptual framework for the study of interorganizational relationships." Administrative Science Quarterly, 5: 583–601.

Maddala, G. S.
1983 Limited Dependent and Qualitative Variables in Econometrics. Cambridge: Cambridge University Press.

McKelvey, Richard, and William Zavoina
1975 "A statistical model for the analysis of ordinal level dependent variables." Journal of Mathematical Sociology, 4: 103–120.

Meyer, John, and Brian Rowan
1977 "Institutionalized organizations: Formal structure as myth and ceremony." American Journal of Sociology, 83: 340–363.

Meyer, Marshall
1979 "Organizational structure as signaling." Pacific Sociological Review, 22: 481–500.

Meyer, Marshall, and M. Craig Brown
1977 "The process of bureaucratization." American Journal of Sociology, 83: 364–385.

National Center for Education Statistics
1980 Longitudinal File of Financial, Enrollment and Faculty Statistics for Institutions of Higher Education: 1974–75 to 1977–78. Washington, DC: NCES.

Nelson, Susan
1978 "Financial trends and issues." In D. Breneman and C. Finn (eds.), Public Policy and Private Higher Education: 69–142. Washington, DC: Brookings.

O'Neill, June
1973 Sources of Funds to Colleges and Universities. Washington, DC: Carnegie Foundation.

Pfeffer, Jeffrey, and Gerald Salancik
1978 The External Control of Organizations. New York: Harper & Row.

Pondy, Louis
1969 "The effects of size, complexity and ownership on administrative intensity." Administrative Science Quarterly, 14: 47–61.

Rowan, Brian
1982 "Organizational structure and the institutional environment: The case of public schools." Administrative Science Quarterly, 27: 259–279.

Rudolph, Fredrick
1962 The American College and University. New York: Knopf.

Samuelson, Paul
1979 "Judging corporate handouts." Newsweek, 94 (August 13): 58–61.

Scott, Richard, and John Meyer
1983 Organizational Environments. Beverly Hills, CA: Sage.

Simon, Herbert
1956 Administrative Behavior. New York: Macmillan.

Spence, Michael
1973 "Job market signaling." Quarterly Journal of Economics, 83: 355–374.
1974 Market Signaling. Cambridge, MA: MIT Press.

Taylor, Fredrick
1911 Principles of Scientific Management. New York: Harper & Row.

Terrien, Fredric, and Donald Mills
1955 "The effects of changing size on the internal structure of organizations." American Sociological Review, 20: 11–13.

Thompson, James
1967 Organizations in Action. New York: McGraw-Hill.

Tolbert, Pamela, and Lynne Zucker
1983 "Institutional sources of change in organizational structure: The diffusion of civil service reform, 1880–1930." Administrative Science Quarterly, 23: 22–39.

Ulrich, David, and Jay Barney
1984 "Perspectives in organizations: Resource dependence, efficiency and population." Academy of Management Review, 9: 471–481.

Weber, Max
1946 Essays in Sociology. New York: Oxford University Press.

Winship, Christopher, and Robert Mare
1984 "Regression models with ordinal variables." American Sociological Review, 49: 512–525.

Zucker, Lynne
1977 "The role of institutionalization in cultural persistence." American Sociological Review, 42: 725–743.
1983 "Organizations as institutions." In S. Bacharach (ed.), Research in the Sociology of Organizations, 2: 1–47. Greenwich, CT: JAI Press.