H.Ü. İktisadi ve İdari Bilimler Fakültesi Dergisi, Cilt 19, Sayı 1, 2001, s. 61-80

ORGANIZATIONAL SUB-UNIT POWER AND ITS RELATIONSHIP WITH RESOURCE ALLOCATION IN A TURKISH STATE UNIVERSITY[†]

Demet VAROĞLU
(Instructor Dr., Middle East Technical University, Dept. of Business Administration, e-mail: demet@metu.edu.tr)

Serhan TUFAN
(Product manager, KoçSistem Information and Communication Services Inc e-mail: serhant@kocsistem.com.tr)

Abstract:

A model for departmental (sub-unit) power together with its bases and its relationship to resource allocations is tested on 33 departments from 5 faculties of a Turkish State university. Correlation and stepwise multiple regression analyses have been performed on data gathered through questionnaires and also secondary data. From among the ten bases of power, only three (the faculty to which the department belongs, the monetary worth of the projects conducted per academic staff, and the number of academic staff) were found to significantly correlate with departmental power measures. However, all the power measures were highly explained by a few of the proposed power bases, but the resource allocation variables were not strongly explained by the departmental power measures and power bases. Another important statement the researchers of this study make is the relevance of studying faculties as sub-units, because the faculties directly allocate some resources of the university.

[†] This paper was presented as a work-in-progress paper at the **Fifth International Western Academy of Management Conference**, İstanbul, June 29-July 2, 1998.

Keywords: University, power, sub-unit power, resource allocation.
Anahtar Sözcükler: Üniversite, güç, örgütsel birim gücü, kaynak dağılımı.

Özet:

Bir Türk Develt Üniversitesinde Örgütsel Birimlerin Güç ve Kaynak Dağılımı ile İlişkisi

Bir Türk devlet üniversitesinin beş fakültesine bağlı 33 bölümü üzerinde, bölüm gücü ve belirleyicileri ile kaynak dağılımı arasındaki ilişkiler, önerilen bir model aracılığıyla çalışılmıştır. Anket verileri ve yazılı belgelerden elde edilen veriler üzerinde korelasyon ve basamaklandırılmış çoklu regresyon analizleri yapılmıştır. Gücün on kriteri arasından sadece üçü (bölümün bağlı olduğu fakülte, bölümün döner sermaye projelerinin bölüm akademik personeli başına düşen payı ve bölüme bağlı akademik personel sayısı) bölüm gücü ile önemli ölçüde ilintili bulunmuştur. Buna rağmen, bölüm gücü değişkenleri (ün, temsil ve semboller) önerilen güç kriterlerinin çok azıyla oldukça güçlü bir biçimde açıklanabilmiştir. Ancak, kaynak dağılımının regresyon denklemlerinin açıklayıcılığı, bölüm gücü regresyon denklemlerinin açıklayıcılığına erişememiştir. Çalışmanın sonunda araştırmacılar, kaynak dağıtımındaki rollerine dayalı olarak fakültelerin gücünün de çalışılmasının anlam taşıyacağını belirtmektedirler.

I. INTRODUCTION

Even though it is tempting to see organizations as rational decision-making bodies, individual and organizational sub-unit power differences exist, and these differences are reflected on the resource allocation process where the sub-units of the organization compete for limited resources. Being limited, then a critical area of decision-making in organizations becomes resource allocable, and sub-units have to acquire necessary resources for their survival. The allocation of scarce resources to sub-units has almost never been totally clear and predictable. In other words, it is argued that the resource allocation process in organizations is not only rational, but also political in nature (Pondy, 1970; Pfeffer and Salancik, 1974; Salancik and Pfeffer, 1974; Pfeffer and Leong, 1977; Hills and Mahoney, 1978; Pfeffer and Moore, 1980; Hackman, 1985) and a complete understanding of it requires considering the power of the sub-units as well as the rational criteria. Being successful in acquiring the necessary resources does not only bring power but also requires some power, and an organizational sub-unit's power comes mainly from its abi1ities to contribute critical resources to the organization.

2. SUB-UNIT POWER

Until Perrow's article, published in 1970, researchers were preoccupied with interpersonal power, neglecting the organizational sub-units' power differences. In his study of industrial firms, Perrow (1970) found out that the

sales and production departments were more powerful than research and development, and finance departments. In an organizational context, sub-unit power is the ability of a sub-unit to affect organizational decisions so that they conform more closely to what the sub-unit wants.

Measuring power has always been a difficult issue due to difficulties in operationalizing the concept. Only a single perceptual measure is used in most of the research on sub-unit power (Enz, 1989). Enz indicates that few researchers have developed both objective and perceptual measures and used them in combination (Hinings et. al., 1974; Salancik and Pfeffer, 1974). General measures of perceived power (Salancik and Pfeffer, 1974; Perrow 1970) ask for an overall impression of a sub-unit's influence, while issue-specific measures (Hinings et. al., 1974) use a multi-issue approach to capture the capacity or ability of a given sub-unit to exercise power in various situations. Another objective measure used by some other researchers was "participation power" (Hinings et. al., 1974; Fried, 1989). Participation power assesses a sub-unit's involvement in various stages of decision-making on various issues.

In universities, the decisions usually pass through permanent and large committees. Salancik and Pfeffer (1974) argued that since some committees in the university have actual impact on resource allocation, the membership in those committees would provide power to the departments providing these members. Therefore, they used the representation on decision-making committees in the university as an objective measure.

Power may also be measured by using its visible consequences like some symbols. Symbols of power include things such as titles, special parking places, special eating facilities, restrooms, automobiles, airplanes, office size, placements, and furnishings (Pfeffer, 1981). In a study by Pfeffer (1981), the departments of a university with more power were found out to be located on higher elevation in the campus.

3. DECISIONS ON ALLOCATION OF RESOURCES TO ORGANIZATIONAL SUB-UNITS

Sub-unit power affects decisions not because organizational participants are intentionally political, prone to conflict, or interested in self-aggrandizement; rather, the reason is that non-bureaucratic decision making mechanisms are necessary when there is no clear agreement or conflict over the possible results of different actions or priorities. Resource allocation is such an

area where disagreement and/or conflict can easily be found. That is why particularistic (political) criteria (Pondy, 1970; Baldridge, 1971; Pfeffer and Leong, 1977) are also used together with universalistic (bureaucratic) ones in resource allocation. However, these two sets of criteria may sometimes be difficult to distinguish from each other since it is possible for a sub-unit to use power for determining the universalistic criteria that are used in resource allocation. The sub-units will certainly prefer those universalistic criteria that will provide an advantage to them.

Pfeffer, Salancik and Leblebici (1976) considered the universalistic criteria as organizationally relevant (Tütüncü, 1995), and the particularistic criteria as being derived from social familiarity and social influence. They argue that particularistic criteria will be used more under conditions of uncertainty, which was measured by the paradigm development in the field of science under investigation. They tested their hypothesis on National Science Foundation grant allocations during the period 1964 to 1971, and found out that in the fields with less developed paradigms the year-to-year stability in the allocations was lower.

Rather than taking it as a rational given criterion, Cyert and March (1963), claimed that the 'budget' was the result of the bargaining process going on within the coalition that constituted the organization. The goals were acting as independent constraints through this bargaining. The result was the establishment of general policies that remained as decision guidelines thereafter. Their model also indicated that there was a tendency towards reliance upon standard industry and organizational budgeting rules in resource allocation in order to avoid uncertainties.

4. SUB-UNIT POWER AND RESOURCE ALLOCATION IN UNIVERSITIES

Pfeffer and Salancik (1974) aimed at finding the effect of sub-unit power on resource allocation decisions in a university (University of Illinois at Urbana-Champaign). They used departments as units of analysis and developed several measures for departmental power. 29 department heads were interviewed and asked to rate each department in the university, including their own, with respect to power on a seven-point Likert-type power scale. This gave a reputational indicator of power, but it is actually the same measure that was used by Perrow (1970). Representation on major university committees gave a representational indicator of power. Ongoing committees that dealt with resource allocation or student policy were selected.

Beside these, Pfeffer and Salancik used “Instructional Units" (IUs) as the only universalistic criterion. This is nothing but the number of students taught multiplied by the number of credit hours per course. IUs form a measure of the student demand for the department, and it also shows the workload of the department. Their analysis of the data showed that the proportion of the budget received was a function of IUs and the proportional representation on committees. The effects of national rank and the faculty to which the department belongs were also examined, but were not found out to be significant.

Another study (Salancik and Pfeffer, 1974) moved the focus of the research one step backward in the process, namelly to the bases of sub-unit power. The dependent variable used in the study was sub-unit power, measured in the same way as in the previously mentioned study. The independent variable was the extent to which the sub-unit provided resources to the organization and the importance of the resources thus provided. To measure the independent variable, the department heads were asked to rank six bases in the order of importance for allocating the budget. These were the numbers of graduate and undergraduate students, national rank (or prestige) of the department, administrative and service contributions to the university, amount of outside grants and contracts and public visibility of the department.

The department heads were also asked to rank the resources that the department provided to the university in the order of overall importance for the university. These resources included all the above and moreover business and professional contracts as a seventh resource. The results showed that the most preferred basis of budget allocation was the number of graduate students. The number of graduate students was also the most important among the resources provided to the university. The most important determinant of sub-unit power was found out to be the amount of outside funds the sub-unit provided to the organization, which was contrary to the results obtained through the interviews, which placed very low emphasis on it. This may be a reflection of the desires of the department heads to use the criteria that favor their own departments.

Salancik and Pfeffer’s study (1974) also reflect the fact that power is gained by providing resources that have overall importance to the whole organization. In return, this power enables the sub-units to obtain scarce and critical resources from the organization, which will produce even more power.

In later years, Pfeffer and Moore (1980) replicated the two former studies. A complete model for power, including both the bases and the budget allocation, was introduced. In their model, power was the function of the

department's ability to provide two important resources to the university: Grant and contracts, and student enrolment. These two resources were the most significant ones discovered in the previous study. Student enrolment also affected resource allocations since it acted as a universalistic criterion. Pfeffer and Moore introduced an additional variable, being the level of paradigm development in the field of the department. This variable was found out to have an effect on the amount of grant and contract money as well as on the resource allocation decisions, since a high level made results of the research more predictable and certain, and therefore encouraging funding (Lodahl and Gordon, 1973). The authors also included a comparison of the two campuses of the university from which they collected data. This revealed the fact, that the effect of power on budget allocations was less and the effect of student enrolment was more in the campus that faced less scarcity of resources. It verifies that power is used more for scarce resources.

Hackman (1985) also proposed a theory on resource allocation in universities. He claimed that the centrality (match between a unit's purposes and the central mission of the organization) of a unit affected how other concepts (internal resource allocations, environmental power, institutional power, and resource negotiation strategies) interact. He categorized the units of a university as "core" (academic departments and schools) and "peripheral" (administrative and support offices) and claimed that they acquire the resources in different ways. Resource allocation was the dependent variable in Hackman's study and included money, space and campus location. It was found out that a unit's institutional power also affected the internal resources it was allocated. This theory was tested on six colleges and universities of different characteristics, and most of the variance in resource allocations was explained.

Ezzamel and Bourn (1995) studied the resource allocation decisions in an U.K. university under varying levels of resource availability. The results of this study show that incremental budgeting is used both in periods of resource scarcity and availability, but a weak form of non-incremental budgeting was also used when resources were scarce. Power and workload were found out to be always effective in the same way on the allocation process.

5. METHOD

5.1. Data Collection

A large state university, which is also a campus university, was picked to test a model that was developed for showing the relationship between sub-unit power and resource allocation. All of the 33 departments, which belonged to all

of the five faculties of the university, were included in the study.

Self-administered questionnaires were distributed to the 14 deans and vice deans (return rate = 64%), 33 department heads (return rate=42%), and 36 assistant heads (return rate =77%). Two versions of the questionnaire were used-one for the department heads and assistant heads, and one for the deans and assistant deans. Besides the questionnaire data, secondary data were also collected for the study. The university's activity report was a major source of secondary data.

5.2. The Model

5.2.1. Description

The data that were collected were on the following variables shown in Figure 1. According to this proposed model, departmental (sub-unit) power, as determined by nine particularistic criteria –of which three are also universalistic-, is linked to the decisions taken on resource allocation. Beside departmental power, all the universalistic criteria, of which three are also particularistic, are linked to resource allocation. The three criteria, which could be categorized as both universalistic and particularistic, are about size (the numbers of undergraduate and graduate students, and academic staff). As it has not been clearly found until now whether more power brings more resources or more resources brings more power, the relationship between power and resource allocation is shown to work two-directional. The same two-directionality in the model can also be found between the power bases and departmental power. Therefore, to test the model relationships, correlation and stepwise multiple regression analyses were performed on the collected data using the Simstat version 3.5 statistical package and the data analysis module of Microsoft Excel version 7.0 spreadsheet software.

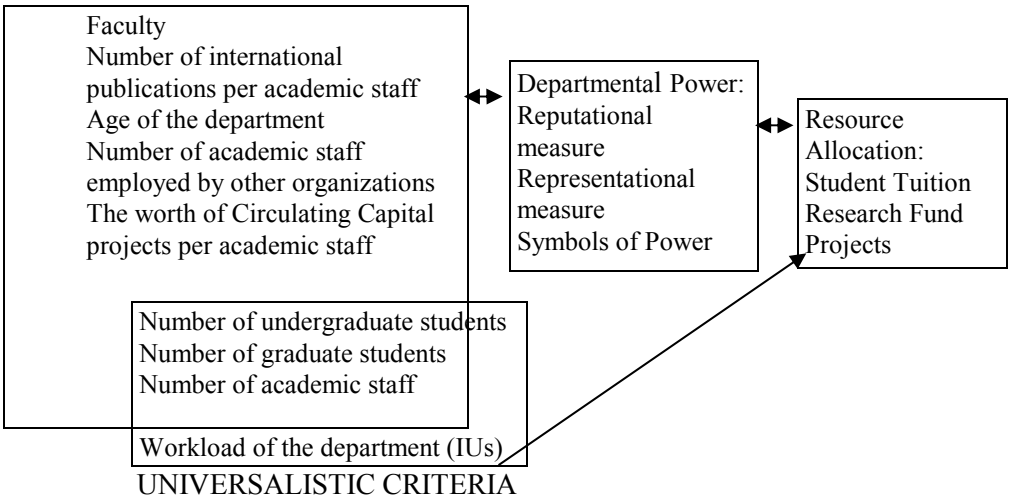

Figure 1 - A Sub-unit Power and Resource Allocation Model for a University

5.2.2. Variables of the Model

Rank of the Department: To serve as a national rank (or prestige) measure of the department, as there is no objective ranking body like the American Council on Education, the preferences made by high school graduates in the National University Entrance Examination are used. A department with high prestige will be preferred more, and it will be placed more among the first preferences made by high school graduates. The percentage of each department's students, who have entered their department after making it their first preference, provides a 'prestige score' for that department. The data on the students' preferences were obtained from the university's activity report. The 'prestige score' of the department does not only show the student demand, or popularity of the department, but higher popularity also may bring power. Popular departments contribute to the university as a whole, and this brings power.

Faculty: The power of a department cannot be thought as being independent from the power of the faculty to which it is attached. The power of a faculty may contribute positively or negatively to the power of its departments. This variable appeared as a dummy variable in regression equations. Four dummy variables were defined, namely for the Faculty of

Economic and Administrative Sciences, Faculty of Arts and Science, Faculty of Engineering, and Faculty of Architecture. Depending on the faculty to which the department belonged, one of these variables was coded as one, and all the others had simultaneously zero as their values.

Number of International Publications: This is assumed as an indicator of the scientific activity of the department; so a high number should indicate a higher activity and should thus increase the academic prestige of the department, both nationally and internationally. In order to remove the possible unfair effect, the crowded departments with a high number of publications would bring; for each department; the number of publications was divided by the number of academic staff. The higher the value of this variable, the more power the department is expected to have. The data on publications were also obtained from the university's activity report.

Age of the Department: Older departments are expected to have more power since they have more established links than younger departments. They would have more visibility, both nationally and internationally. They would have more knowledge on the mechanisms that bring power, and more representatives in the university committees. The age data were obtained from records and the questionnaires filled by the department heads.

The Number of Academic Staff who are also Employed by Other Organizations: This is the number of academic staff who are using their right to work for other organizations according to the articles no. 36 and 38 of the Turkish Law no. 2547. This is considered as an indicator of the public visibility of and the demand for the department. The number of a department's academic personnel, who were using the above-mentioned employment rights, was divided by the total number of the department's academic staff. The data were obtained from the university's activity report. The higher the value of this variable, the more powerful the department would be.

The Dollar Worth of Circulating Capital Projects per Academic Staff: The projects that are conducted for outside organizations may be seen as the 'sales' of the university. Departments that conduct projects with a higher dollar worth (per academic staff) contribute more to the university and are expected to have more power. The international projects show a demand for the know-how of the department and they also provide resources to the university. Data on this variable were obtained from the university's activity report. The Circulating Capital uses Turkish Lira for the worth of projects, so these values were converted to Dollars using the Central Bank's average exchange rate for

that year.

The Number of Undergraduate Students: The more undergraduate students a department has, the more powerful it is expected to be. A higher number of undergraduate students let the department justify more need for resources easily and it also increases the visibility of the department. Data on undergraduate students were obtained from the university's activity report.

The Number of Graduate Students: Like the undergraduate students, the departments with more graduate students are expected to be more powerful. Besides justifying increased resource needs easily, graduate students also may give power to the department by increasing its prestige, since graduate programs are generally perceived to be more difficult to conduct. Data on the graduate students were also obtained from the university's activity report.

The Number of the Academic Staff: Being the third size variable, this number is also expected to bring power to the department if it is high. More academic staff helps the department justify its need for more resources easily, and there will be more people to join committees and conduct activities for the sake of their department. Academic staff data were obtained from the university's activity report.

Workload of the Department: This is the last universalistic criterion in the model. It is measured in Instructional Units, which are calculated by multiplying the credit of each course by the number of students taking that course. The university catalog was used for determining the courses taken by students in a particular semester, and the credits of these courses. The numbers of the students were taken from the university's activity report.

Departmental Power: The following indicators are used in the study:

A. Reputational Measure: The department heads, vice department heads, deans and vice deans were asked through a questionnaire to indicate on a seven-point Likert-type scale, the power of the departments in their faculty, including their own, and the power of all the faculties in the university. A definition of power was also included for clarification and to serve as a measure for perceived power. The respondents were also asked to indicate the boards and committees in which their departments were represented, and administrative positions occupied by their departments' members.

The raw reputational power scores obtained for each department and each faculty were averaged. These raw scores were then converted to standardized scores (z-scores) in order to take into account the deviations from the mean. The final reputational power scores of the departments were calculated by weighting the department scores by the faculty scores. This was a way of combining the powers of the departments and faculties, and makes certain that a department in a faculty with low power will have a lower final score than a department in faculty with high power when they have the same departmental z-score. Since the z-scores may have a minus sign, the multiplication of two z-scores would produce a positive score, which would be logically incorrect. In order to eliminate this effect, another form of standardized scores; T-scores were used instead of z-scores.

B. Representational Measure: This variable gives an account of the memberships in important boards, committees (e.g., University Senate, Budget-Plan-Investments Committee, Computerization and Informatics Committee, Campus Planning and Development Committee), together with administrative and consultant-for-president positions that departmental personnel hold. In order to obtain percentage representation figures, data obtained from the department heads through questionnaire were divided by the total number of positions available on these particular boards, committees, etc.

C. Symbols of Power: *Physical location* may be considered as a power indicator. A department closer to the center of the campus (the center may be taken as the Presidency Building) will have some advantages, like easier access to general-purpose facilities located close to the center of the campus, like the Library and Cafeteria. They will also have more visibility in the university, and this may be perceived as prestigious. Therefore, more powerful departments may be the ones closer to the center.

Another symbol of power is *physical space*. Occupying larger space can also be considered as an indicator of higher power. The physical space occupied is the total floor space of the department building, and the total space is assumed to be divided equally among the departments in cases of shared classrooms (e.g. the classrooms of a faculty building, which are shared by six departments forming the faculty).

Space is scarcer near to the center of the campus, and more space is available away from the center. Taking this fact into account, a measure that incorporates both symbols (physical location and physical space) was developed. A weight (coefficient) was assigned for each m^2 of floor occupied

by a department. The distance of the department from the center of the campus determined the coefficients. As can be seen from Table 1, the weights are higher for departments closer to the center of the campus, and lower for the departments away from the center. The distances of the departments from the center were measured on a scaled (1:5000) campus map obtained from the Construction Unit of the university. The distances were measured on a straight line and the distances between the department/faculty entrances were used. Then, data on the area occupied by these departments that was also obtained from the same unit of the university was multiplied by the weights to arrive at a departmental space measure.

Table 1 – Coefficients for Distance

Distance from the Center (meters)	***Coefficient***
0 - 250	3.0
251 - 500	2.5
501-750	2.0
751 - 1000	1.5
1001+	1.0

Resource Allocations: The resource allocation processes of this university differ from those studied previously. Most of the resource allocations in this university are done on a faculty basis and depend almost completely on formulas. The resources that could be examined in this study are as follows:

A) Student Tuition: The money from the pool formed by the income of the Student Social Services Unit is allocated to both the faculties and departments. The deans may request funds for use by the faculty or may approve the requests of the departments and forward them. For the Faculty of Economic and Administrative Sciences, the Faculty of Architecture, and the Faculty of Education, most of the funds are used for the faculty as a whole, but not for specific departments. The reason for this is that these faculties contain all of their departments in the same building. Therefore, most of the money is used for buying equipment or repairing the buildings. On the other hand, the Faculty of Engineering and the Faculty of Arts and Science have their departments in separate buildings, so most of the resources are used on a departmental basis. As a result, only the figures for the departments of these faculties are included in the study. The services and small repair, consumable, and inventory article expenses are also used. The figures on these expenses are obtained from the Student Social Services Unit.

B) Research Fund Projects*:* As the national research fund projects (RFP) are allocated to the departments depending on the decisions of the Research Fund Commission and the University Board, the total monetary worth of these projects is used as a variable in the study. The figures are taken from the university's activity report.

6. RESULTS AND DISCUSSION

After running a correlation analysis (Pearson product-moment with one-tailed t-tests) among all the variables, the reputational power measure was found to correlate significantly with more of the model variables (Table 2). Even though the "reputational power measure" correlated with seven out of the ten criterion variables (power bases); the "representational power measure" correlated with four, and the "symbols of power" correlated with five variables. Among the criterion variables, the "number of international publications" and the "worth of Circulating Capital projects" were found to correlate significantly with only the "reputational power measure". "Reputational power measure" was also the only power measure which correlated with all the size-related variables (numbers of undergraduate, graduate students, and academic staff).

Table 2 – The List of Variables Which Significantly Correlate with the Three Power Measures

The Power Measure	***The Correlated Variables***	***The Coefficients of Correlation (99% confidence interval)***
Reputational Measure	Faculty (member of Engineering Faculty)	0.66
	Age of the Department	0.46
	Worth of Circulating Capital Projects	0.46
	Number of Undergraduate Students	0.57
	Number of Graduate Students	0.71
	Number of Academic Staff	0.79
	Research Fund Projects	0.55
Representational Measure	Age of the Department	0.48
	Number of Academic Staff	0.72
	Student Tuition	0.61
	Research Fund Projects	0.48
Symbols	Age of the Department	0.49
	Number of Undergraduate Students	0.65
	Number of Graduate Students	0.72
	Number of Academic Staff	0.91
	Research Fund Projects	0.64

Thus, the only power measure which correlated with both of the resource allocation variables was the "representational measure of power". The common correlated variables were the "age of the department", the "number of academic staff", and the "Research Fund Projects".

It was not surprising to find out that older departments' buildings were located closer to the center of the campus, because organizations grow out of the center and the newer departments usually find places away from the center. Being more established; these departments were also represented more in various committees. May be based on these, older departments were more likely to be perceived as powerful (reputational power). Being closer to the center and occupying a larger space (power symbols) was also found to strongly correlate with the "number of academic staff" (0.91).

The criterion variables which did not correlate with any of the power measures were "rank of the department", "number of international publications", "number of academic staff employed by other organizations", and "workload of the department (IUs)". The measure used for the "rank of the department" did not work for this university. This may indicate that either the rank measure for the department does not affect power, or the proposed measure is not valid. The rank of a department leads to prestige and power, and then more resources in U.S.A. universities in a more direct way than it does for the Turkish State universities. The number of students taken into the undergraduate and graduate programs in Turkish State universities do not easily fluctuate from one year to the other. Therefore, these universities are left only with the quality of the high school graduates, whom they are able to attract, which may not be necessarily seen as a very important contribution to the university, so that it will automatically be paid back in the form of resources.

A possible reason why the "number of international publications" did not significantly correlate with any of the power measures may be that the frequency and/or ease of doing this differs from one academic discipline to the other. For the "number of the academic staff also employed by other organizations", which did not show a strong correlation, there are two possible explanations: 1) This may be seen much more as an internal affair of the department; therefore, the department will hardly have a reputation for being powerful because of that; and/or 2) This might be a more meaningful measure for personal power. Only the academic staff who are also employed outside of the university may be more likely to be perceived as having high personal power.

The reason for no significant effect of the "workload of the department" on resource allocations may be the unaccounted-for workloads of the departments. The calculated workloads do not include workloads other than the university courses. However, some of the academics, who also want to be active as researchers might be reluctant to have much course load; or because of having administrative positions, they might inevitably be teaching a few or no courses.

Coming to the correlation among the three power measures, only "symbols of power" was found significantly correlated with both of the "reputational" (coefficient=0.76) and "representational" measures (coefficient=0.65) (p=0.000), but "reputational" and "representational" measures did not correlate significantly (p=0.113). The coefficient of correlation between the "reputational" and "representational" measures was 0.26, whereas the same relationship was found to be 0.61 in the University of Illinois study (Pfeffer and Salancik, 1974).

In the stepwise multiple regression analyses, these criteria were used: P to enter: 0.050; P to remove: 0.055; Tolerance: 0.0001. Five regression equations were formed in the study. Three of these equations belonged to the three measures of power and two of the equations belonged to the two resource allocation variables (Table 3). Being a member of either the Faculty of Economics and Administrative Sciences or the Faculty of Engineering entered into the regression equations of both reputational and representational power measures as reflections of the "faculty" variable before the stepwise method was used. Thus, it should also be noted that there was no significant evidence for concluding that membership in other faculties has a negative effect on power.

Table 3 – The Regression Equations of the Power and Resource Allocation Variables

The Dependent Variable	***The Regression Equations***	***Adjusted R^2***
Reputational Power	1985.33 + 15.05 (number of academic staff) + 0.024 (worth of Circulating Capital projects)	0.61
Representational Power	-0.61 + 0.082 (number of academic staff)	0.72
Symbols of Power	-5834.34 + 410.97 (number of academic staff)	0.80
Student Tuition	1559.72 + 41.63 (number of academic staff) – 0.99 (reputational power)	0.56
Research Fund Projects	-28.06 + 6.63 (number of academic staff)	0.45

Looking at the adjusted R^2s, one can notice that the regression equations of the power measures had more explanatory power (the lowest adjusted R^2=0.61) than the regression equations of the two resource allocation variables (the highest adjusted R^2=0.56). The most amount of variation was explained for the "symbols of power", whereas the least amount of variation was explained for "Research Fund Projects". The common independent variable that found its place in all of the regression equations is the "number of academic staff". Therefore, it can be claimed that the more academic staff a department has, the more powerful it is and the more resources it can get (Figure 2). For instance, the persons to fill the administrative positions, like faculty deans, are usually chosen from the larger departments. Based on this, the administrative bodies of the departments can be advised to increase the number of their academic staff in order to easily justify their comparatively bigger requests from the university administration.

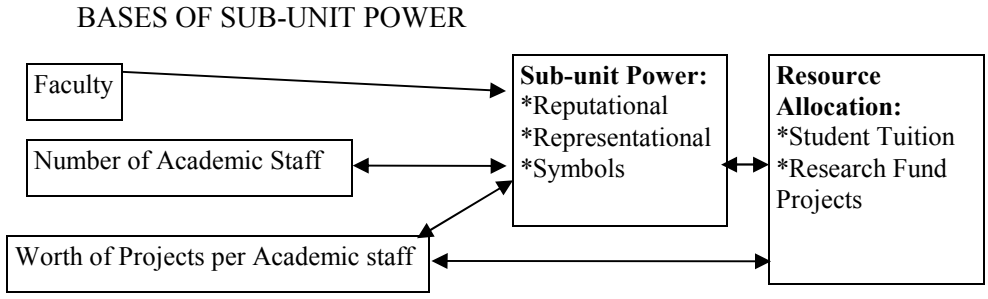

Figure 2- The Finalized Model for the State University

Finally, when Figure 1 and Figure 2 are compared, it can be seen that only three out of the ten proposed criterion variables were left in the model. Neither one of the criterion variables in the finalized model are totally universalistic or particularistic. Therefore, it would not be wrong to state that this study does not provide full support for either the rational or political model for decision-making on resource allocation.

Thus, the Sub-unit Power and Resource Allocation Model for a university still needs some effort to be developed and to have a better explanatory power. A more complete understanding of the role of power on resource allocation may be gained by taking more resources into account in the analysis. Departmental data on the student tuition allocation should be available for all departments. The amount of grants collected may also be useful as a

power base variable. If mechanisms for recording every spending at the departmental level are developed in the future, it will be much easier to introduce new resource allocation variables to the model.

7. CONCLUSIONS AND FUTURE RECOMMENDATIONS

Compared with this study, the studies on departmental power, which were conducted abroad, have found more statistically significant results supporting their hypotheses. The main reason for this is the structural differences between the universities in U.S.A. and U.K., and the universities in Turkey. Departments, being more autonomous, have more importance as sub-units in U.S.A. and U.K. universities. They have more direct contacts with the outside environment, have competition with each other to obtain more student enrollment, and attracting more students provides them more power. Resources are also usually allocated on a departmental basis. On the contrary, the faculty is a more important sub-unit in Turkey. Most of the allocations are done at the faculty level. Faculties are direct allocators of some of the resources. They act as a filter between the university administration and the departments. Doing the analysis on the basis of faculties may seem more logical, but it is impossible to obtain results of any statistical significance using only five faculties in the analysis. The number of faculties in Turkish universities will always be in ranges that will not let the use of most statistical methods. Because of this reason, the analyses in this study were done at the departmental level and the faculty was incorporated into the model. In the future, the model for the university may be scaled down to a model for the faculty. This will require modifications on some variables, and also the removal of the faculty variable. In such a study, a more detailed analysis may be done using the faculty as the allocator of resources.

Following Astley and Sachdeva's (1984) definition of sub-unit power, and being inspired by the concept of "centrality" (Hickson et. al., 1971), another important variable for explaining organizational sub-unit power, the "contacts with other sub-units" can be considered in terms of its relationship with resource allocation in future studies. For a university department, the contacts with other departments can be operationalized through the number of courses given to and taken from the other departments. The courses given to other departments enhance the power of the department by forming other departments' dependence on the department, whereas the courses taken from the other departments lower the departmental power because of establishing dependence.

In the studied university, the History, Mathematics, Physics, Chemistry, Computer Engineering and Industrial Engineering departments give service courses, so they should have more power. When the collected data were examined, it was seen that all of these departments, except for the History and Mathematics departments had high power scores. The most powerful departments in the university were found to be the Mechanical Engineering and Civil Engineering departments. These departments were also the departments that were giving the highest number of courses to other departments when the service courses were excluded (Mechanical Engineering–4; Civil Engineering-6 courses). These results show that the departments which give more courses to other departments have more functional centrality (Astley and Zajac, 1990). In other words, these departments will have positive net dependence on other departments when the workload is considered.

The "level of paradigm development" was not put into the proposed model, because in the pilot study of the university, the researchers learned that the allocations of Research Fund Projects were not determined by paradigm development to a great extent. Rather, there were important differences in the sub-cultures of departments, which relayed itself in more or less preference for research activities. For instance, the Department of Business Administration was a department, which seemed to show a preference for adult training programs for various public and private organizations rather than conducting research projects. However, when the Research Fund Projects' allocations were analyzed on a departmental basis, departments like Chemistry, Mathematics, Civil Engineering, Electrical and Electronics Engineering, and Mechanical Engineering were found to have higher shares in these allocations. On the other hand, departments like Business Administration, Philosophy, Psychology, and Foreign Language Education were among the least funded. This showed that funding favored the departments with developed paradigms. Therefore, this variable needs to be studied in the future for its relationship with power and resource allocation.

The budgeting process (Pfeffer and Salancik, 1974; Hills and Mahoney, 1978; Wildavsky, 1979) is a field that relative levels and games of power can be observed, but the relevant data is very difficult to obtain because budgetary meetings' minutes are not kept in many Turkish universities. These data may be obtained through intensive interviews with the parties involved in the negotiations, most of whom may be reluctant to give such information. Such interviews to reveal the power struggles in the university may be used in future studies, but it should be noted that this would be a challenging task for the researcher.

The results of this study may be extended in the future, by being tested on other universities including private universities. These universities should have a large number of departments in order to obtain statistically significant results. A sample of state universities compared with private universities will also ease the understanding of the effect of structure and administration on sub-unit power and resource allocation.

REFERENCES

Astley, G. W. and P. S. Sachdeva (1984), "Structural Sources of Intraorganizational Power: A Theoretical Synthesis", **Academy of Management Review**, 9(1), 104-113.

Astley, G. W. and E. J. Zajac (1990), "Beyond Dyadic Exchange: Functional Interdependence and Sub-unit Power", **Organization Studies**, 11, 481-501.

Baldridge, J. V. (1971), **Power and Conflict in the University**, New York: Wiley.

Cyert, R. M. and J. G. March (1963). **A Behavior Theory of the Firm**, Englewood Cliffs, New Jersey: Prentice Hall.

Enz, C. A. (1989), "The Measurement of Perceived Intraorganizational Power: A Multi-respondent Perspective", **Organization Studies**, 10, 241-251.

Ezzamel, M. and M. Bourn (1995), "Budget Allocation in a UK University: Contrasting Periods of Resource Availability with Resource Scarcity", **Journal of Management Studies**, 32, 310-338.

Fried, B. J. (1989), "Power Acquisition in a Health Care Setting: An Application of Strategic Contingencies Theory", **Human Relations**, 41, 915-927.

Hackman, J. D. (1985), "Power and Centrality in the Allocation of Resources in Colleges and Universities", **Administrative Science Quarterly**, 30, 61-77.

Hickson, D. J., C. R. Hinings, C. A. Lee, R. E. Schneck and J. M. Pennings (1971), "A Strategic Contingencies' Theory of Intraorganizational Power", **Administrative Science Quarterly**, 16, 216-229.

Hills, F. S. and T. A. Mahoney (1978), "University Budgets and Organizational Decision Making", **Administrative Science Quarterly**, 23, 454-465.

Hinings, C. R., D. J. Hickson, J. M. Pennings and R. E. Schneck (1974), "Structural Conditions of Intraorganizational Power", **Administrative Science Quarterly**, 19, 22-44.

Lodahl, J. B. and G. Gordon (1973), "Funding the Sciences in University Departments", **Educational Records**, 54, 74-82.

Perrow, C. (1970), "Departmental Power and Perspectives in Industrial Firms", in N. Z. Mayer (ed.), **Power in Organizations**, Nashville: Vanderbilt University Press, 59-89.

Pfeffer, J. and G. R. Salancik (1974), "Organizational Decision Making as a Political Process: The Case of a University Budget", **Administrative Science Quarterly**, 19, 135-151.

Pfeffer, J. G., R. Salancik and H. Leblebici (1976), "The Effect of Uncertainty on the Use of Social Influence in Organizational Decision Making", **Administrative Science Quarterly**, 21, 227-245.

Pfeffer, J. and Anthony Leong (1977), "Resource Allocations in United Funds; Examination of Power and Dependence", **Social Forces**, 55, 775-790.

Pfeffer, J. and W. L. Moore (1980), Power in University Budgeting; A Replication and Extension", Administrative Science Quarterly, 25, 637-653.

Pfeffer, J. (1981). **Power in Organizations**. Cambridge, Massachusetts: Ballinger Publishing Company.

Pondy, L. R. (1970), "Toward a Theory of Internal Resource Allocation", in N. Z. Mayer (ed.), **Power in Organizations**, Nashville: Vanderbilt University Press, 270-311.

Salancik, G. R. and J. Pfeffer (1974), "The Bases and Use of Power in Organizational Decision Making: The Case of a University", **Administrative Science Quarterly**, 19, 453-473.

Tütüncü, İ. C. (1995), **Design and Implementation of a Simulation Model for Predicting Resource Requirements of Instructional Activities in METU**, Unpublished master's thesis, Ankara: METU Graduate School of Social Sciences.

Wildavsky, A. (1979), **The Politics of the Budgetary Process**, Boston: Little, Brown.